

承認書

APPROVAL SHEET

客戶名稱
Customer: 研揚科技股份有限公司

飛偉料號
FW P/N: FWAA-1216

客戶料號
Cus. P/N: 1709103100

規格敘述
DESCRIPTION: AUDIO CABLE 310mm

審 核 Approved By	業 務 Sales Dept	品 保 QA Dept	工 程 Engineering Dept
王俊偉	張全生	劉江華	楊仁貴

客戶簽章

Customer Signature:

審 核 Approved By	核 對 Checked By	檢 驗 Tested By

飛偉科技有限公司

FLYINGWAY TECH CO., LTD

Address: 新北市永和區中和路345號7F-4

TEL: 02-22311313

FAX: 02-22311020

CONTACT: Chino Wang

E-Mail: chino@flyingwaytech.com.tw

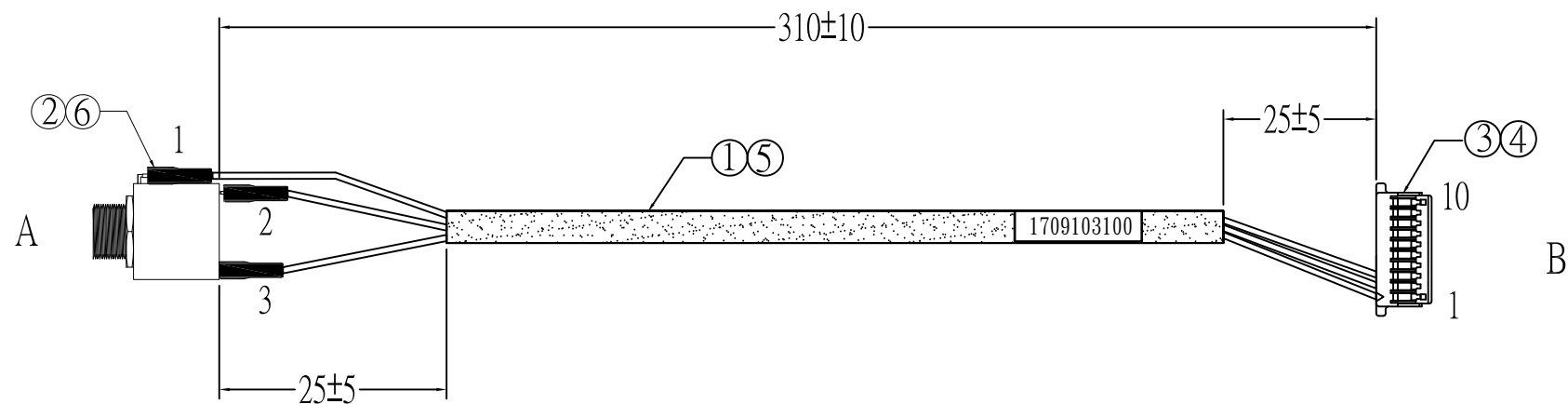
Cellphone: 0983588528

DATE: 2019/10/29

RoHS Compliant

Pin對照表

A	1	2	3
B	3	1	2
顏色	黑	棕	紅



附上螺帽，不用鎖在PHONE JACK上

6	套管: L=10mm 厚 黑	3	pcs	WORE或同級品
5	套管: L=260mm 薄 黑	1	pcs	WORE或同級品
4	TER:11002TOP-2E	3	pcs	ICTC或同級品
3	HSG:11002H00-10P	1	pcs	ICTC或同級品
2	3.5mm PHONE JACK:SCJ311MINXS1B00G	1	pcs	旭全 或同級品
1	線材:UL1571#28 OD=0.8 黑;棕;紅 各1	共3	pcs	瑞興或同級品
NO	品 名 規 格	數量	單位	生產廠商

客戶工程師	Jimmy	
版次	變更內容	變更日期
A	新發行	2019/04/19
B	修改PIN位	2019/07/24
飛偉科技有限公司 FLYINGWAY TECH CO., LTD		
TEL:02-2231-1313 FAX:02-2231-1020 E-MAIL:chino@flyingwaytech.com.tw		
TITLE: AUDIO CABLE 310mm		
FW P/N: FWAA-1216		
CUS. P/N: 1709103100		
REV: B	DWG BY: Silvia	CHECKED BY: Chino
DATE: 2019/07/24		



UL 1571 HOOK-UP WIRE

80°C 30V 環保 SR-PVC 電子線

UL Subject 758

UL FILE NO:E108485

說明:

應用:

- 導體使用單條或絞線最小至 50AWG 裸銅或鍍錫銅
- 環保 SR-PVC 絕緣
- 額定溫度:80°C, 額定電壓:30Volts
- 可通過 UL VW-1 垂直型耐燃測試。

- 電子設備二次迴路中內部連接用線

Applications:

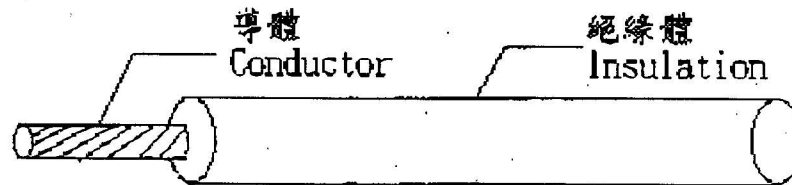
- Internal wiring in electronic equipments

Product Description:

- Tinned, annealed, attended or solid copper conductor, MIN,50AWG
- Lead FreeSR- PVC insulation.
- Rated temperature: 80°C, Rated voltage:30volts.
- Uniform thickness of wire to ensure easy stripping and cutting
- Passes UL VW-1 vertical flame test.

構造及電氣性能

structure & electric properties(UL STANDARD 758:外徑 0.70mm 以下不印字)



UL 1571	額 定 Range		導 體 Conductor		絕 緣 體 Insulation		公差值 Tolerance Mm	最大導體	最小絕緣	絕緣耐電
	溫 度 Temp ℃	電 壓 Voltage V	線號 AWG	構 成 NO./mm	厚 度 Thickness mm	外 徑 O.D mm		阻抗 Maximum Conductor Resistance Ω/km	阻抗 Minimum Insulation Resistance MΩ/km	壓(VAC/min) Insulation Potential Strength
Stranded 多芯線	80℃	30V	34	7/0.060	0.20	0.60	±0.05	728	15	500
			32	7/0.080	0.20	0.65		703		
			30	7/0.100	0.20	0.70		397		
			28	7/0.127	0.20	0.80		248		
			26	7/0.160	0.20	0.90		152		
			24	11/0.160	0.20	1.05		88.6		
			22	17/0.160	0.20	1.20		62.5		
			20	21/0.180	0.20	1.50		39.5		
34			7/0.060	0.20	0.60	728				
32			7/0.080	0.20	0.65	703				
30			7/0.100	0.20	0.70	397				
28			7/0.127	0.20	0.80	248				
26			7/0.160	0.20	0.90	152				
24			7/0.200	0.20	1.05	88.6				
30			1/0.254	0.20	0.65	377				
28			1/0.320	0.20	0.75	245				
26	1/0.404	0.20	0.85	155						



瑞興電線電纜製品廠
REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.
承 認 書
SPECIFICATION

型號 STYLE			UL 1571								
額定溫度/電壓 RATING TEMP./VOLT.			80℃/30V								
導體 CONDUCTOR	線號 SIZE		AWG	34	32	30	28	26	24	22	20
	芯數 NUMBER		NO.	7	7	7	7	7	11	17	21
	銅線直徑 DIAMETER		MM	0.060	0.080	0.100	0.127	0.160	0.160	0.160	0180
	最小銅線直徑 MIN.DIAMETER		MM	0.054	0.074	0.090	0.117	0.150	0.150	0.150	0.170
	導體截面積 CROSS SEC AREA OF COND	AVG.	CM	39.7	64	100	159	253	404	640	1020
		MIN.		35.1	62.7	98	156	248	392	621	989
	絞距 LAY OF BUNCH		INCH	0.40	0.40	0.40	0.50	0.60	0.70	0.80	1.25
最大電阻 MAX.RESISTANCE			Ω/KM	728	703	397	248	152	88.6	62.5	39.5
絕緣體 INSULATION	完成外徑 O.D. (±0.10)		MM	0.60	0.65	0.70	0.80	0.90	1.05	1.20	1.50
	絕緣體厚度 INSULATION THICKNESS	AVG	MM	0.20							
		MIN		0.15							
	外被厚度 JACKET THICKNESS	AVG	MM	/							
		MIN		/							
最小絕緣電阻 INSULATION ESISTANCE			MΩ/KM	15							
火花試驗 SPARK TEST			KV	2KV/0.15sec							
最小伸長率 ELONGATION			%	100%							
最小抗張強度 TENSIL STRENGTH			PSI	1500							
最小老化後伸長率 LO.(AFTER AGING)			%	OF UNAGED 65							
最小老化後抗張強度 TEN.ST.(AFTER AGING)			%	OF UNAGED 70							
老化試驗溫度/條件 AGING TEMP./TIME			113℃/168HRS								
耐燃燒試驗 FIAME TEST			VW-1								
高溫纏繞試驗 HEAT SHOCK TEST			80℃/1HR 1.60MM MANDREL								
低溫纏繞試驗 COLD BEND TEST			-10℃/1HR 3.2MM MANDREL								
耐電壓試驗 I NSULATION POTENTIALST			500VAC/min								

ISSUED	1997-01-17	APPROVED	CHECKED	PREPARED
REVISION		洪夾詩印	李榮天印	劉安輝



Underwriters Laboratories Inc.®

File E108485

Vol. 2

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2600 N.W. Lake Road
Camas, WA 98607-0542
United States Country Code
(360) 017-5500
FAX No. (360) 017-6000
<http://www.ul.com>

FOLLOW-UP SERVICE PROCEDURE (TYPE L)

COMPONENT - APPLIANCE WIRING MATERIAL (AVLV2, AVLV8)

Manufacturer:
(342072-001)

REI HSING WIRE & CABLE CO LTD
TSENG TEN INDUSTRIAL PARK
CHEN KOU
CHANG AN TOWN
DONGGUAN GUANGDONG CHINA

Applicant:
(559504-001)

REI HSING WIRE CO LTD
56-5 JIUN-ING ST
SHUH-LIN CITY
TAIPEI HSIEN TAIWAN

Recognized
Company:
(559504-001):

SAME AS APPLICANT

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The Prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and the representative of Underwriters Laboratories Inc. and is not used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

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UNDERWRITERS LABORATORIES INC.

J. J. Ritchie

J. J. Ritchie
Vice President

Laboratory Management and Operations



A not-for-profit organization
dedicated to public safety and
committed to quality service

TABLE OF AUTHORIZED STYLES SINGLE-CONDUCTOR THERMOPLASTIC INSULATED WIRE

Page	Issued	Page	Issued	Page	Issued	Page	Issued
F 1007	1997-06-04	F 1333	2003-12-08	F 1723	2003-12-08		
F 1010	2003-02-27	F 1371	2003-12-08	1726	2003-12-08		
F 1011	1997-06-04	1429	2004-11-24	F 1789	2004-11-24		
F 1013	1997-06-04	F 1430	1999-04-29	F 10064	2003-12-08		
F 1015	1997-06-04	1431	2004-11-24	10070	2006-07-21		
F 1028	1997-06-04	F 1497	1997-06-04	10109	2004-05-04		
1032	2001-06-19	F 1500	1997-06-04	10198	2006-07-21		
1061	1997-01-17	1516	2004-05-04	10362	2003-12-08		
1080	2003-01-03	1533	2000-11-09	10368	2004-11-24		
F 1095	1997-06-04	F 1538	2003-12-08	10369	2004-11-24		
1164	2004-05-04	1569	2003-06-17				
1180	2004-05-04	F 1571	1997-01-17				
1185	2000-11-09	F 1577	2003-12-08				
1198	2004-05-04	F 1581	2001-05-09				
1199	2004-05-04	1584	2004-05-04				
1212	2004-05-04	F 1589	2007-06-19				
1213	2004-05-04	1591	2003-12-08				
1226	2003-12-08	1592	2003-12-08				
1227	2003-12-08	1617	1997-01-17				
F 1283	2003-02-27	1618	2003-02-27				
1285	2003-01-08	1672	2003-02-27				
F 1316	2003-02-27	1674	2003-02-27				
F 1330	2003-12-08	F 1685	2004-11-24				
F 1331	2003-12-08	1709	2003-12-08				
F 1332	2003-12-08	1710	2003-12-08				



Test Report (SVHC)

No. CANEC1901488302

Date: 30 Jan 2019

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-01
Client Ref. Info. : I-PE-01;I-TPE-01; I-PP-01; I-PU-01; I-RU-01; I-TPR-01;I-PPE-01
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



SGS-CSTC Inspection & Testing Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

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Date: 30 Jan 2019

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.002	White liquid	6
SN2	CAN19-014883.005	White liquid	181
SN3	CAN19-014883.008	White liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Report (SVHC)

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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	002 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	005 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	008 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Test Report (SVHC)

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum
RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	005
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	005
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	005
I	4	Anthracene	120-12-7	0.050	005
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	005
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	005
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	005
I	8	Cobalt dichloride*	7646-79-9	0.005	005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	005
I	10	Diarsenic trioxide*	1327-53-3	0.005	005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	005
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4,319 4- 55-6	0.050	005
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	005
I	15	Triethyl arsenate*	15606-95-8	0.005	005
II	16	2,4-Dinitrotoluene	121-14-2	0.050	005
II	17	Acrylamide	79-06-1	0.050	005
II	18	Anthracene oil**	90640-80-5	0.050	005
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	005
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	005
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	005
II	23	Diisobutyl phthalate	84-69-5	0.050	005
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	005
II	25	Lead chromate*	7758-97-6	0.005	005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	005
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	005
III	29	Ammonium dichromate*	7789-09-5	0.005	005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	005
III	32	Potassium chromate*	7789-00-6	0.005	005
III	33	Potassium dichromate*	7778-50-9	0.005	005
III	34	Sodium chromate*	7775-11-3	0.005	005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	005
III	36	Trichloroethylene	79-01-6	0.050	005
IV	37	2-Ethoxyethanol	110-80-5	0.050	005
IV	38	2-Methoxyethanol	109-86-4	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	005
IV	40	Chromium trioxide*	1333-82-0	0.005	005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	005
V	45	1,2,3-trichloropropane	96-18-4	0.050	005
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	005
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	005
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	005
V	49	2-ethoxyethyl acetate	111-15-9	0.050	005
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	005
V	51	Strontium chromate*	7789-06-2	0.005	005
VI	52	1,2-Dichloroethane	107-06-2	0.050	005
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	005
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	005
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	005
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	005
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	005
VI	60	Calcium arsenate*	7778-44-1	0.005	005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	005
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	005
VI	64	Lead dipicrate*	6477-64-1	0.005	005
VI	65	Lead styphnate*	15245-44-0	0.005	005
VI	66	N,N-dimethylacetamide	127-19-5	0.050	005
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	005
VI	68	Phenolphthalein	77-09-8	0.050	005
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	005
VI	70	Trilead diarsenate*	3687-31-8	0.005	005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	005
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	005
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	005
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	005
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050	005
VII	78	Diboron trioxide*	1303-86-2	0.005	005
VII	79	Formamide	75-12-7	0.050	005
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	005
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	005
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	005
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	005
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	005
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	005
VIII	88	1-Bromopropane	106-94-5	0.050	005
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	005
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	005
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	005
VIII	93	4-Aminoazobenzene	60-09-3	0.050	005
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	005
VIII	95	4-Nonylphenol, branched and linear	-	0.050	005
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	005
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	005
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	005
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	005
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	005
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	005
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	005
VIII	103	Diethyl sulphate	64-67-5	0.050	005
VIII	104	Diisopentylphthalate	605-50-5	0.050	005
VIII	105	Dimethyl sulphate	77-78-1	0.050	005
VIII	106	Dinoseb	88-85-7	0.050	005
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	005

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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	005
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	005
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	005
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	005
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	005
VIII	114	Lead cyanamidate*	20837-86-9	0.005	005
VIII	115	Lead dinitrate*	10099-74-8	0.005	005
VIII	116	Lead monoxide*	1317-36-8	0.005	005
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	005
VIII	121	Methoxyacetic acid	625-45-6	0.050	005
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	005
VIII	123	N,N-dimethylformamide	68-12-2	0.050	005
VIII	124	N-Methylacetamide	79-16-3	0.050	005
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	005
VIII	126	o-Aminoazotoluene	97-56-3	0.050	005
VIII	127	o-Toluidine	95-53-4	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	005
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	005
VIII	134	Tetraethyllead*	78-00-2	0.005	005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	005
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	005
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	005
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	005
IX	141	Cadmium oxide*	1306-19-0	0.005	005
IX	142	Cadmium*	7440-43-9	0.005	005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	005
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	005
X	145	Cadmium sulphide*	1306-23-6	0.005	005
X	146	Dihexyl phthalate	84-75-3	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	005
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	005
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	005
X	150	Lead di(acetate)*	301-04-2	0.005	005
X	151	Trixylyl phosphate	25155-23-1	0.050	005
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	005
XI	153	Cadmium chloride*	10108-64-2	0.005	005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	005
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	005
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	005
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	005
XII	159	Cadmium fluoride*	7790-79-6	0.005	005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	005
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	005
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	005
XIV	164	1,3-propanesultone	1120-71-4	0.050	005
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	005
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	005
XIV	167	Nitrobenzene	98-95-3	0.050	005
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	005
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	005
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	005
XVI	171	4-Heptylphenol, branched and linear	-	0.050	005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	005
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	005
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	005
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	005
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	005
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	005
XVIII	178	Cadmium carbonate*	513-78-0	0.005	005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	005
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	005
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	008
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	008
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	008
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	008
XIX	186	Disodium octaborate*	12008-41-2	0.005	008



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	008
XIX	188	Ethylenediamine	107-15-3	0.050	008
XIX	189	Lead*	7439-92-1	0.005	008
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	008
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	008
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	002
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	002
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	002
XX	195	Fluoranthene	206-44-0	0.050	002
XX	196	Phenanthrene	85-01-8	0.050	002
XX	197	Pyrene	129-00-0	0.050	002



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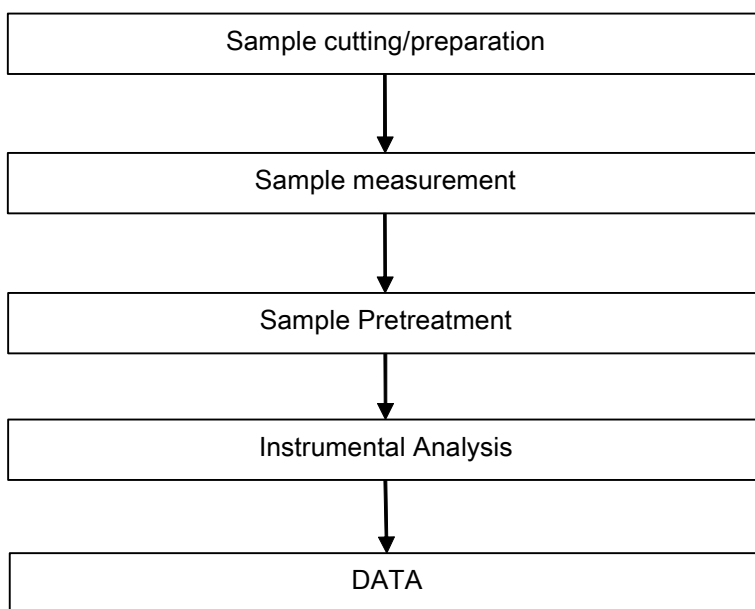
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SVHC Testing Flow Chart



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Sample photo:



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Test Report

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Date: 21 Jun 2019

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SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

This report is to supersede test report CANEC1910676513

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-02

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



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Test Report

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.003	Black liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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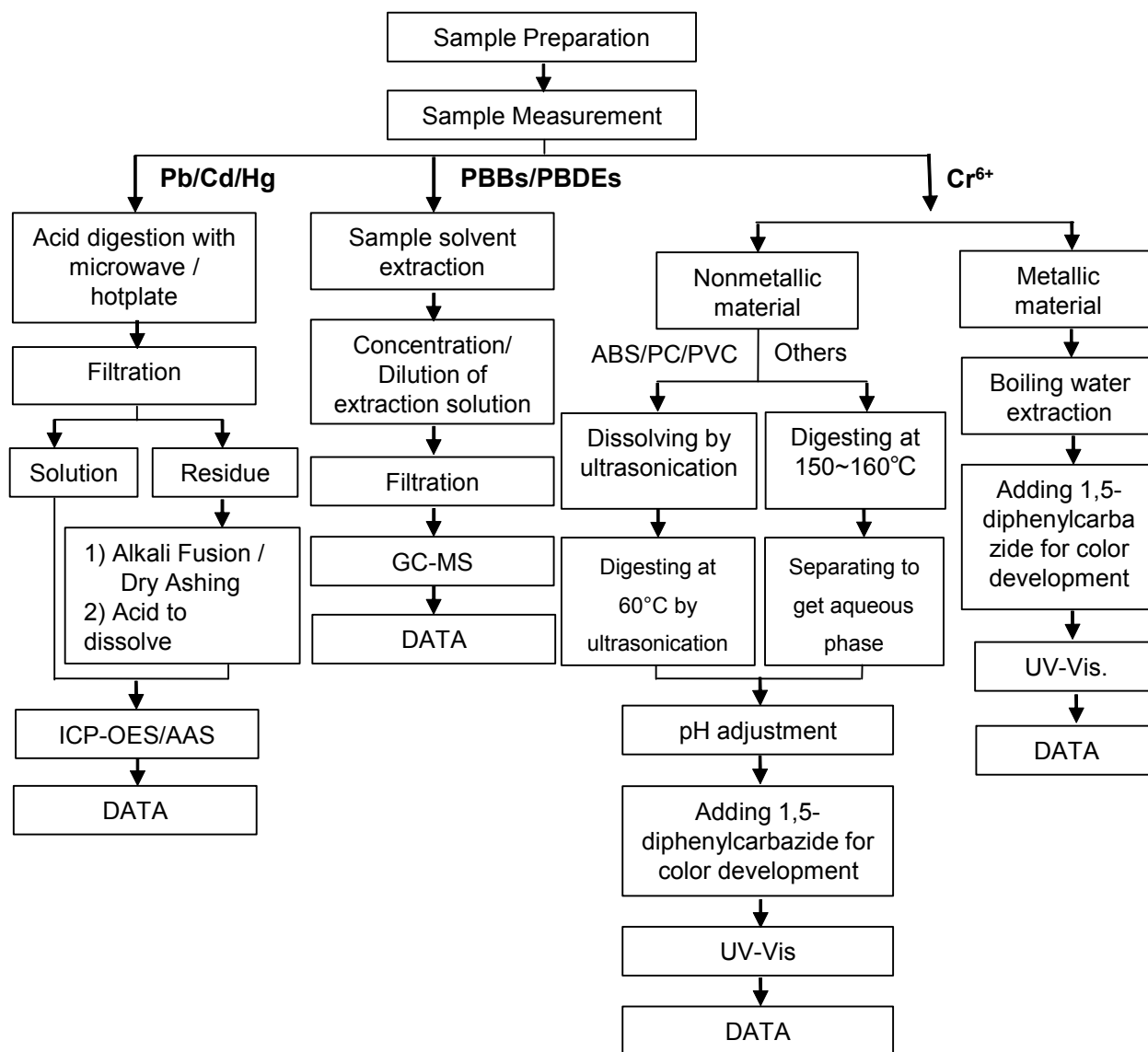
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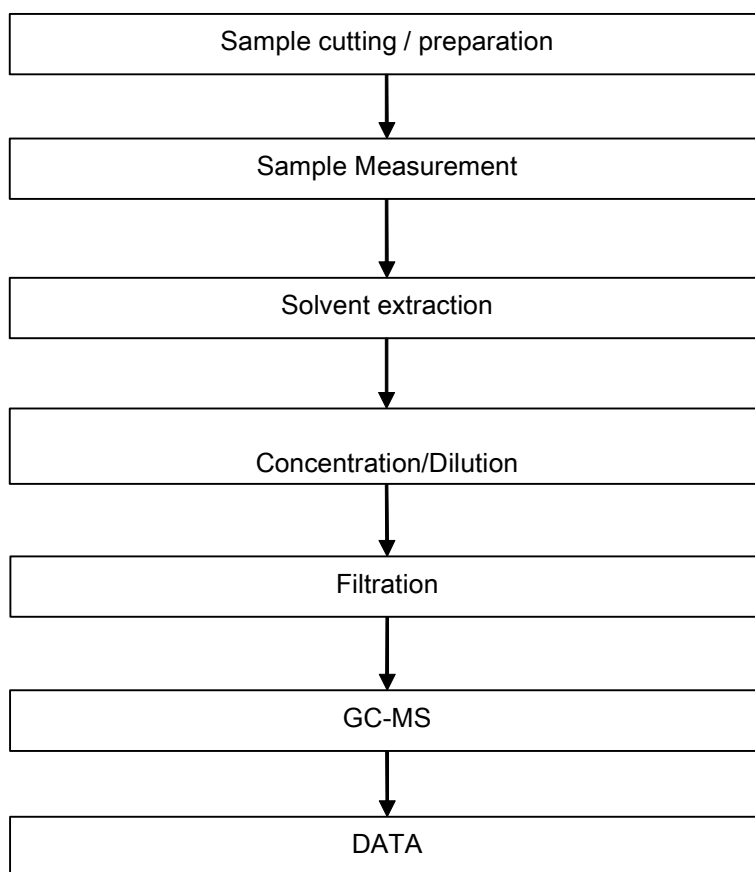
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



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Date: 21 Jun 2019

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Sample photo:



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Test Report



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Report No. A2190175998101034

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BROWN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101034

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101034

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101034

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	96 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Brown wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

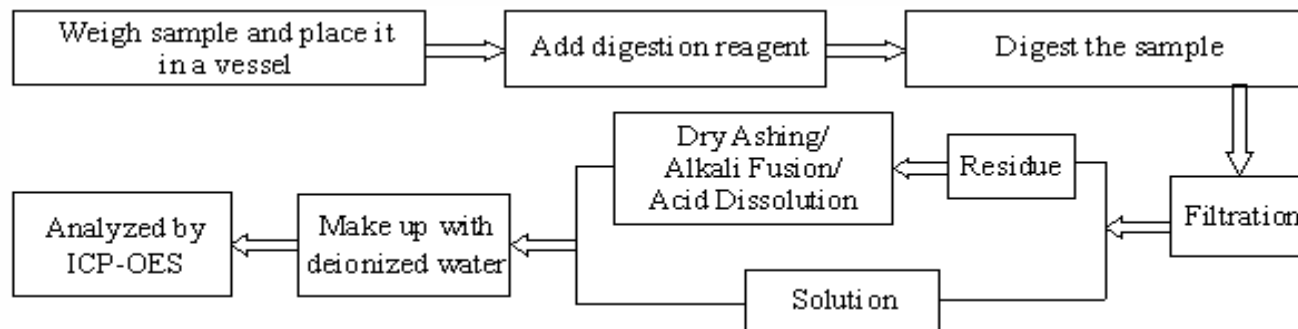
Test Report

Report No. A2190175998101034

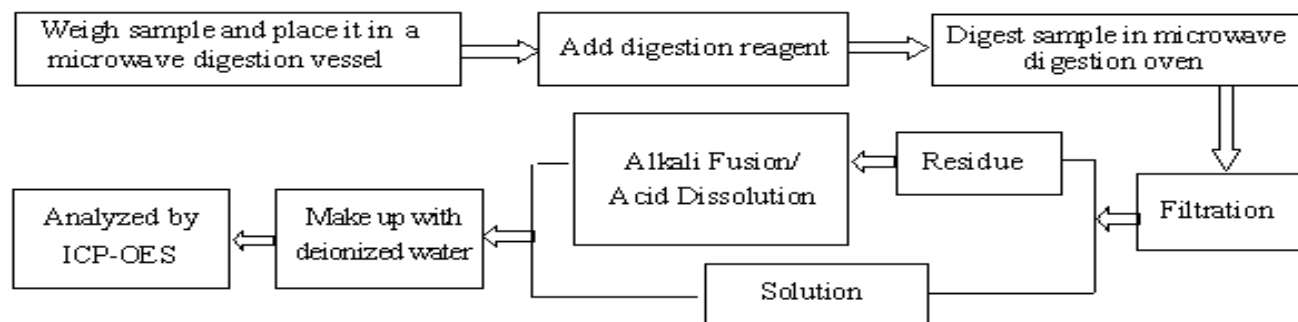
Page 5 of 7

Test Process

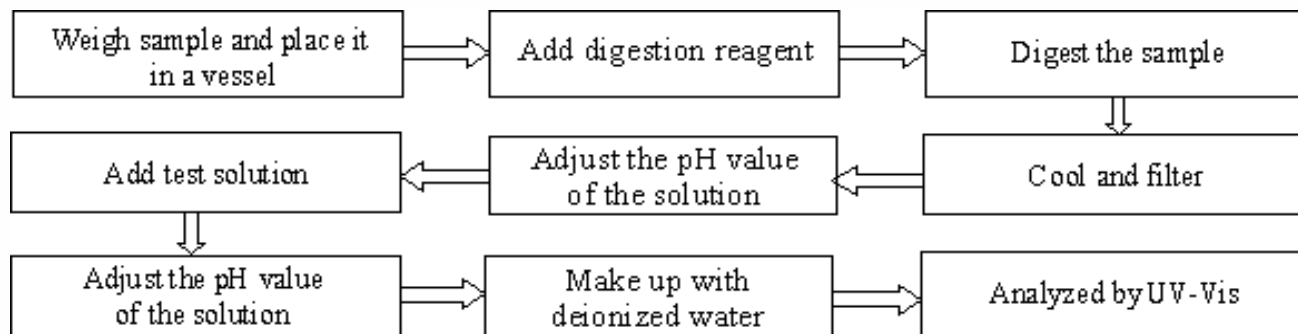
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



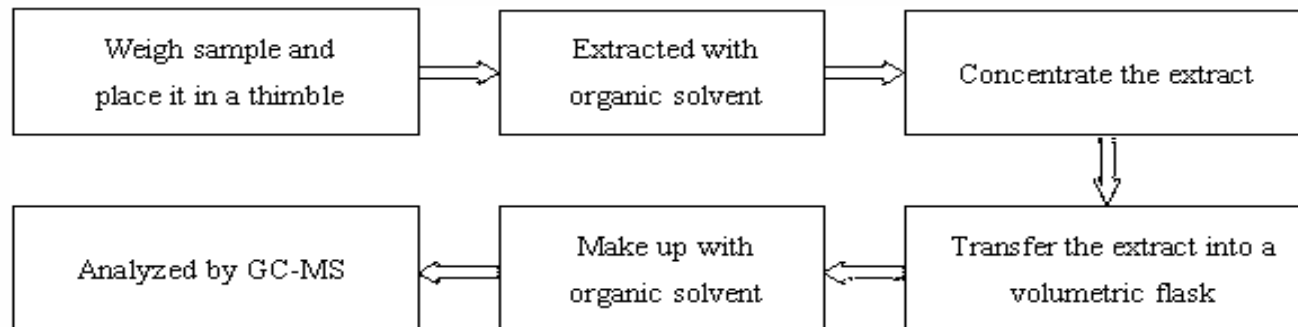
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

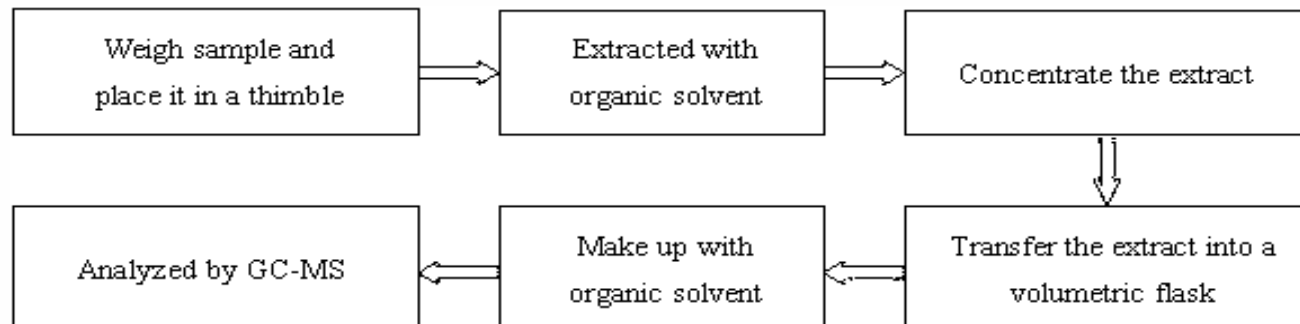


Test Report

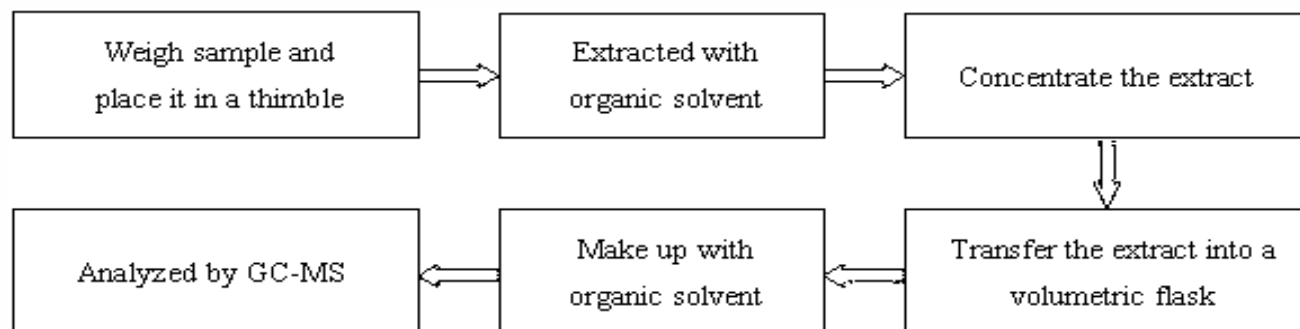
Report No. A2190175998101034

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101034

Page 7 of 7

Photo(s) of the sample(s)



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Statement:

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Test Report



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Report No. A2190175998101013

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name RED PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101013

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101013

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101013

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Red wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

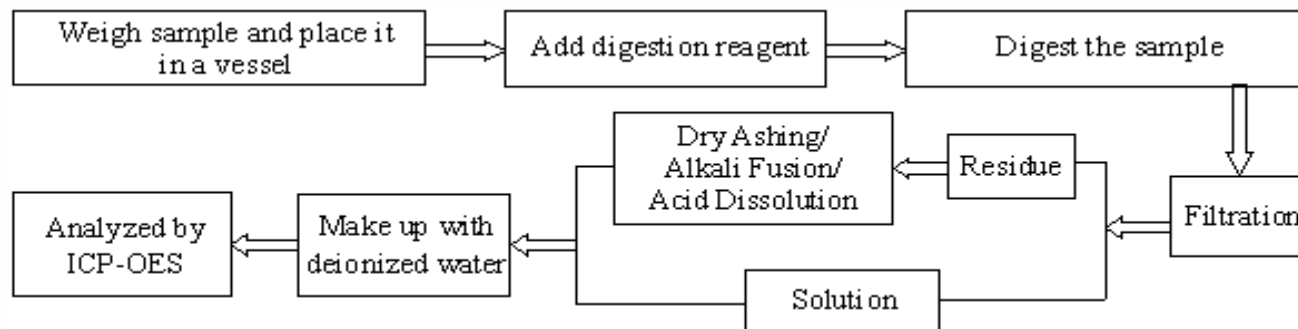
Test Report

Report No. A2190175998101013

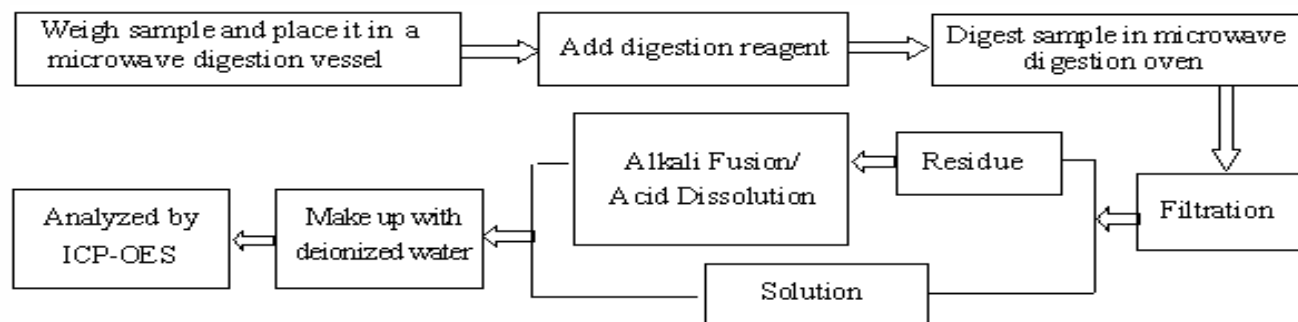
Page 5 of 7

Test Process

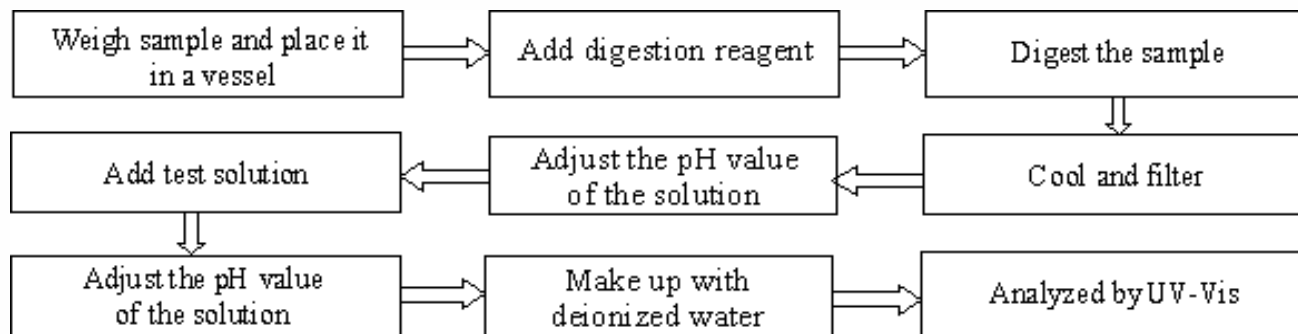
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



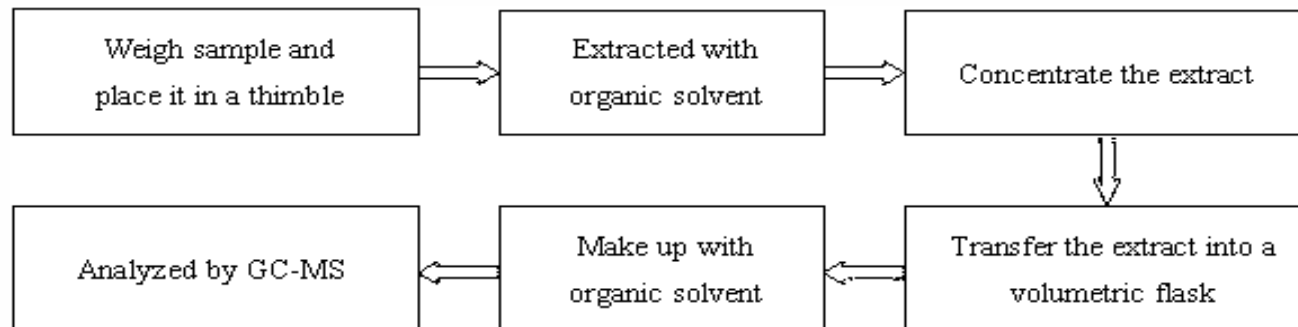
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

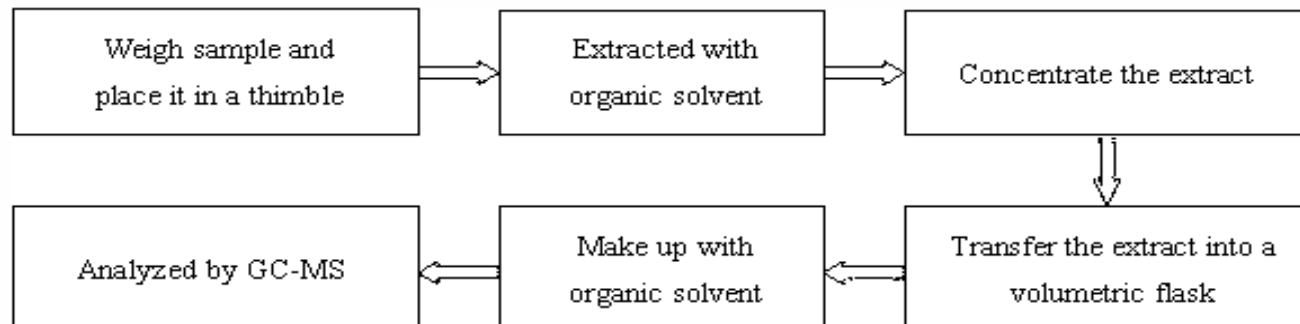


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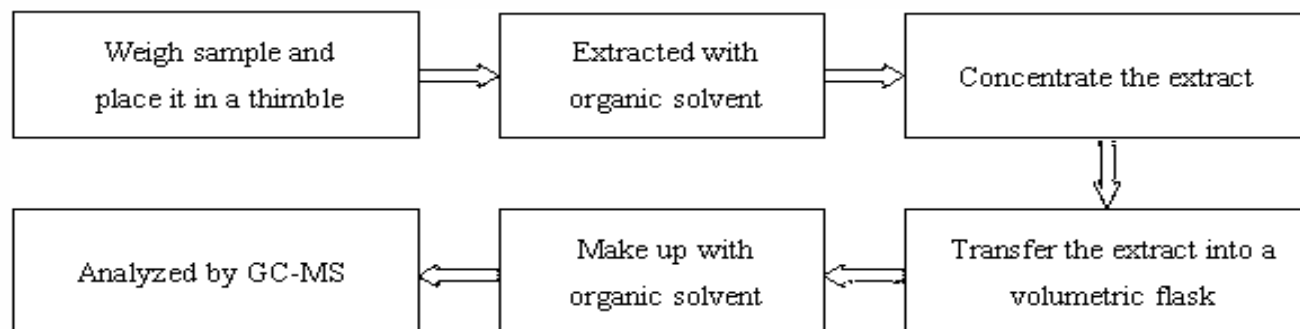
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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

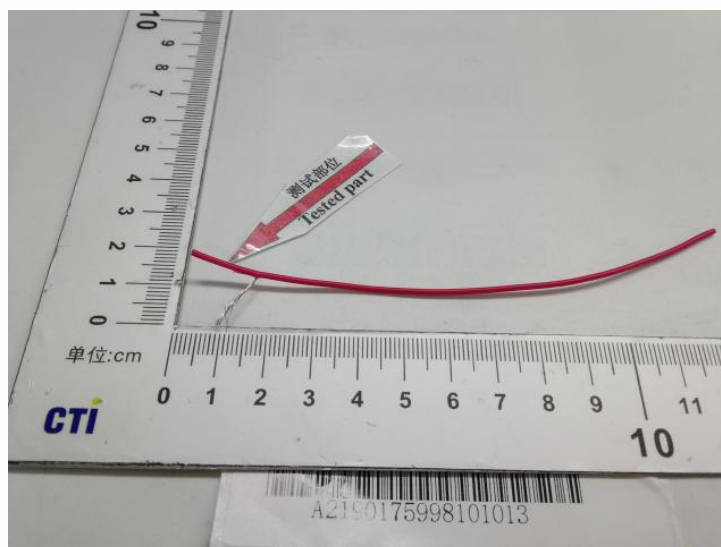


Test Report

Report No. A2190175998101013

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101010

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLACK PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101010

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101010

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101010

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	138 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Black wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

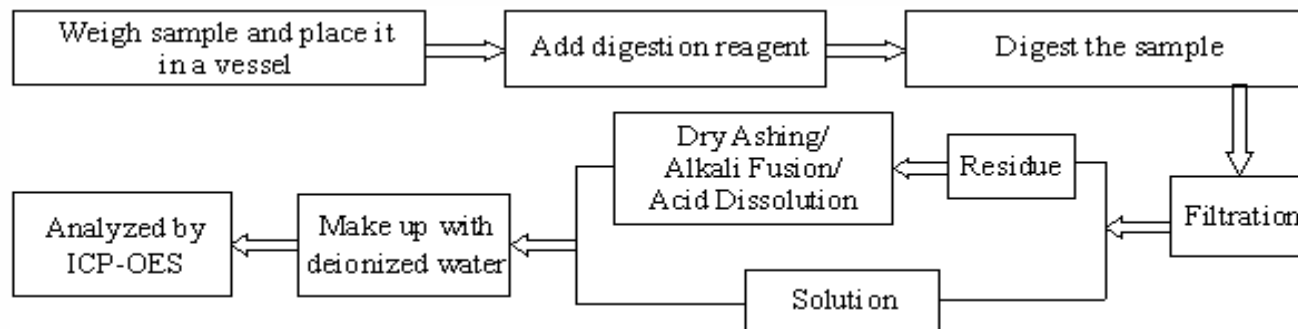
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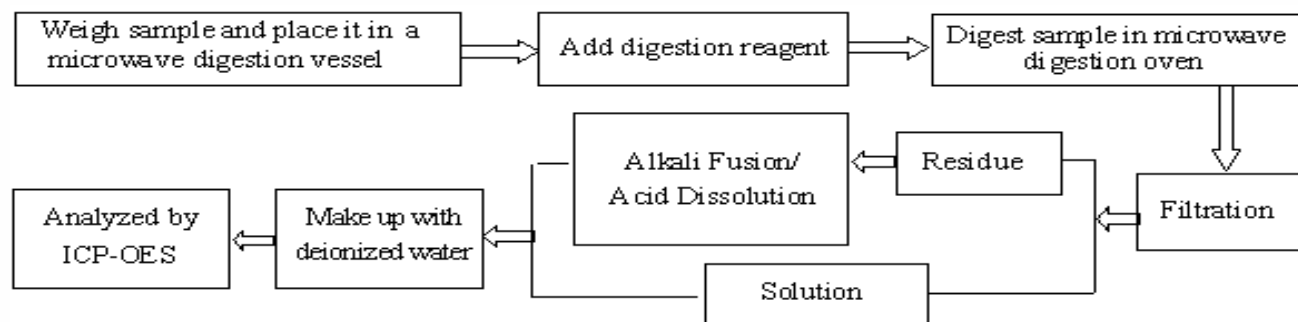
Page 5 of 7

Test Process

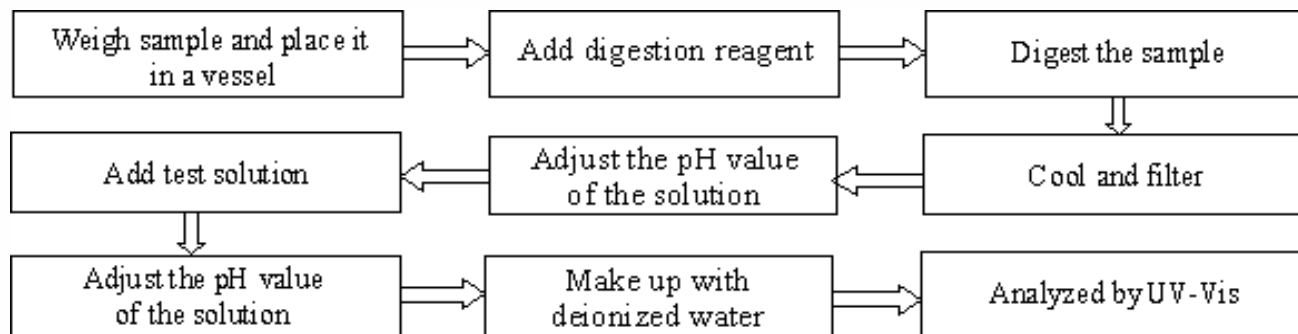
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



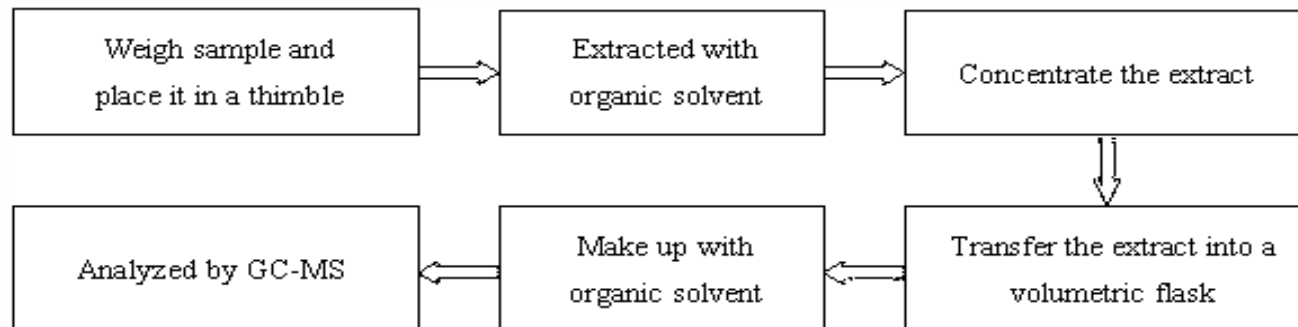
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

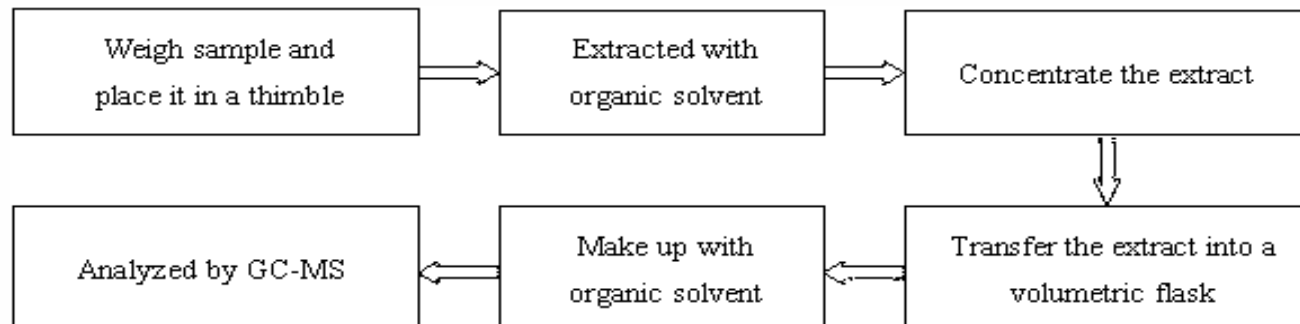


Test Report

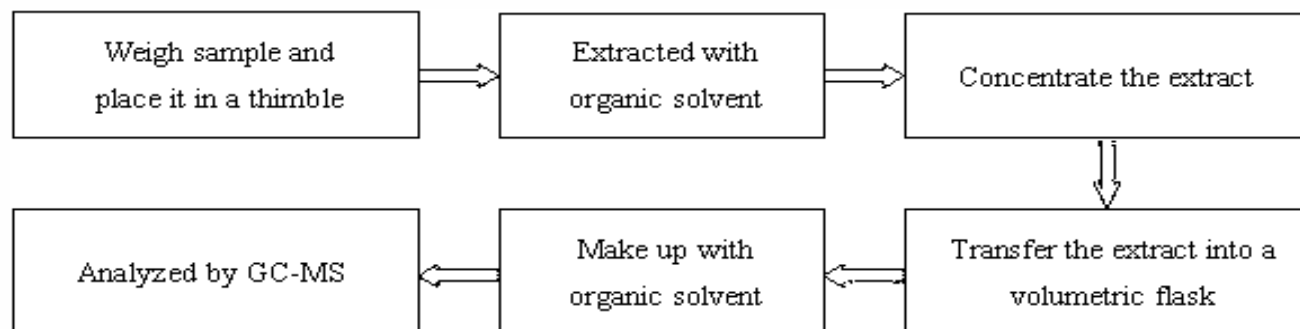
Report No. A2190175998101010

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

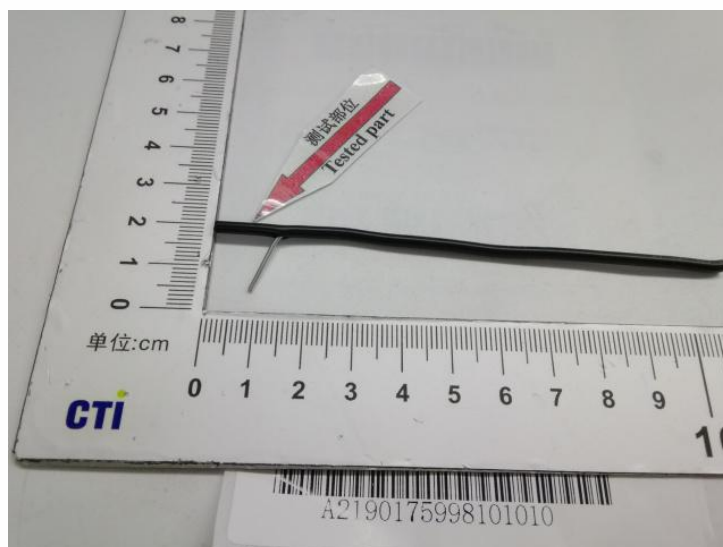


Test Report

Report No. A2190175998101010

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Photo(s) of the sample(s)



*** End of report ***

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Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 1 of 7

DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 2 of 7

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.001	Copper colored metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

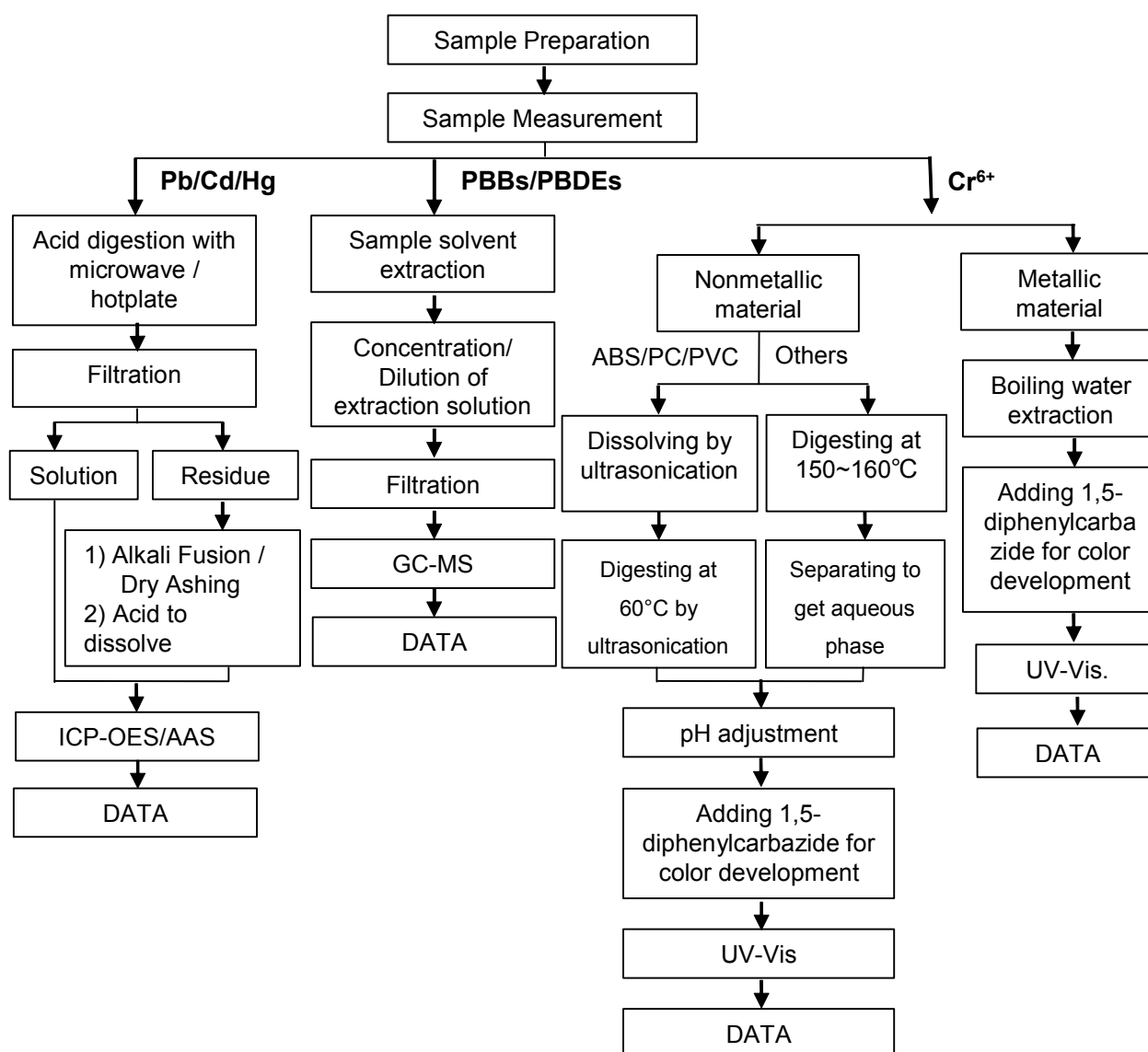
Test Item(s)	Unit	MDL	001
Beryllium (Be)	mg/kg	5	ND



ATTACHMENTS

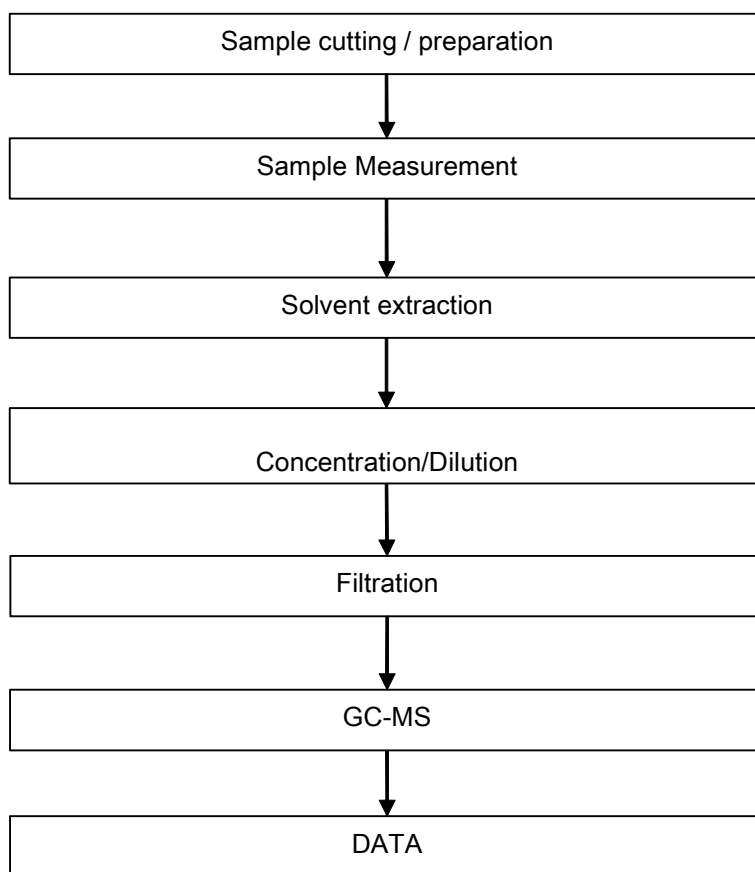
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



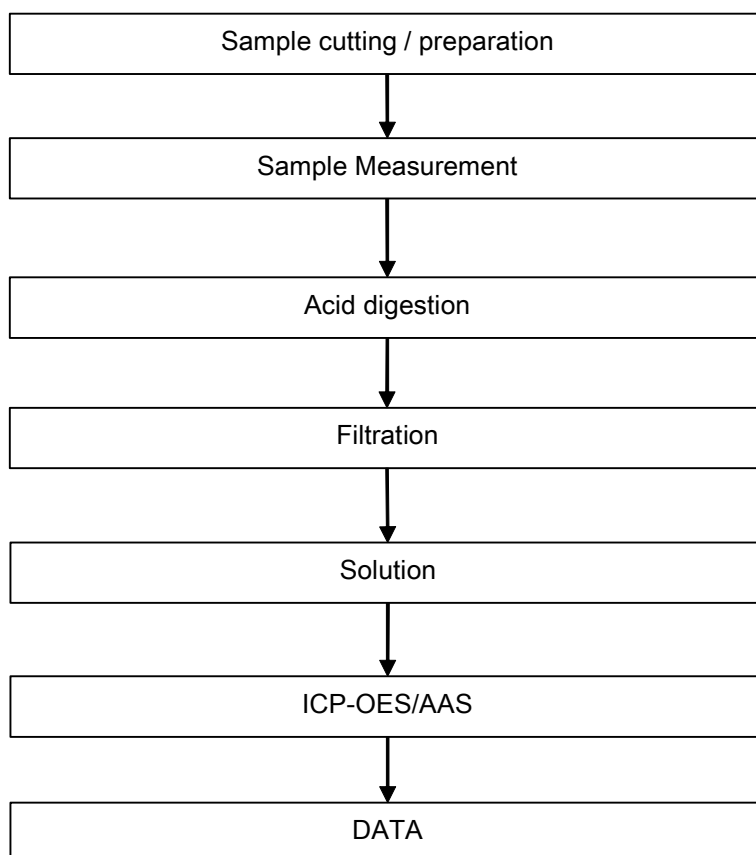
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Phthalates Testing Flow Chart



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Elementary Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report (SVHC)

No. CANEC1904032403

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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD
QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE,
TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety seven (197) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Additional One (1) Substances of Very High Concern (SVHC) identified by the notification of WTO on Feb 7, 2019.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi

Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.003	Copper colored metal wire(a)+silvery plated metal wire(b)

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result:(Additional SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Add. = Additional identified SVHC
10. Composite test has been performed in equal proportion for the components/material per client requested. And the result is calculated using the minimum sample weight.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
Add.	198	4-tert-butylphenol (PTBP)	98-54-4	0.050



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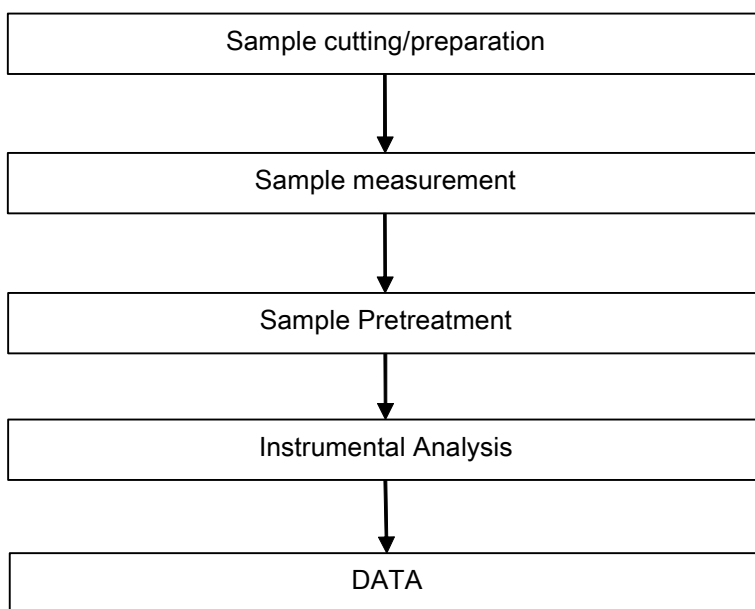
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ATTACHMENTS

SVHC Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.002	Silvery plated metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	002
Beryllium (Be)	mg/kg	5	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

PFOS (Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	002
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide,



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N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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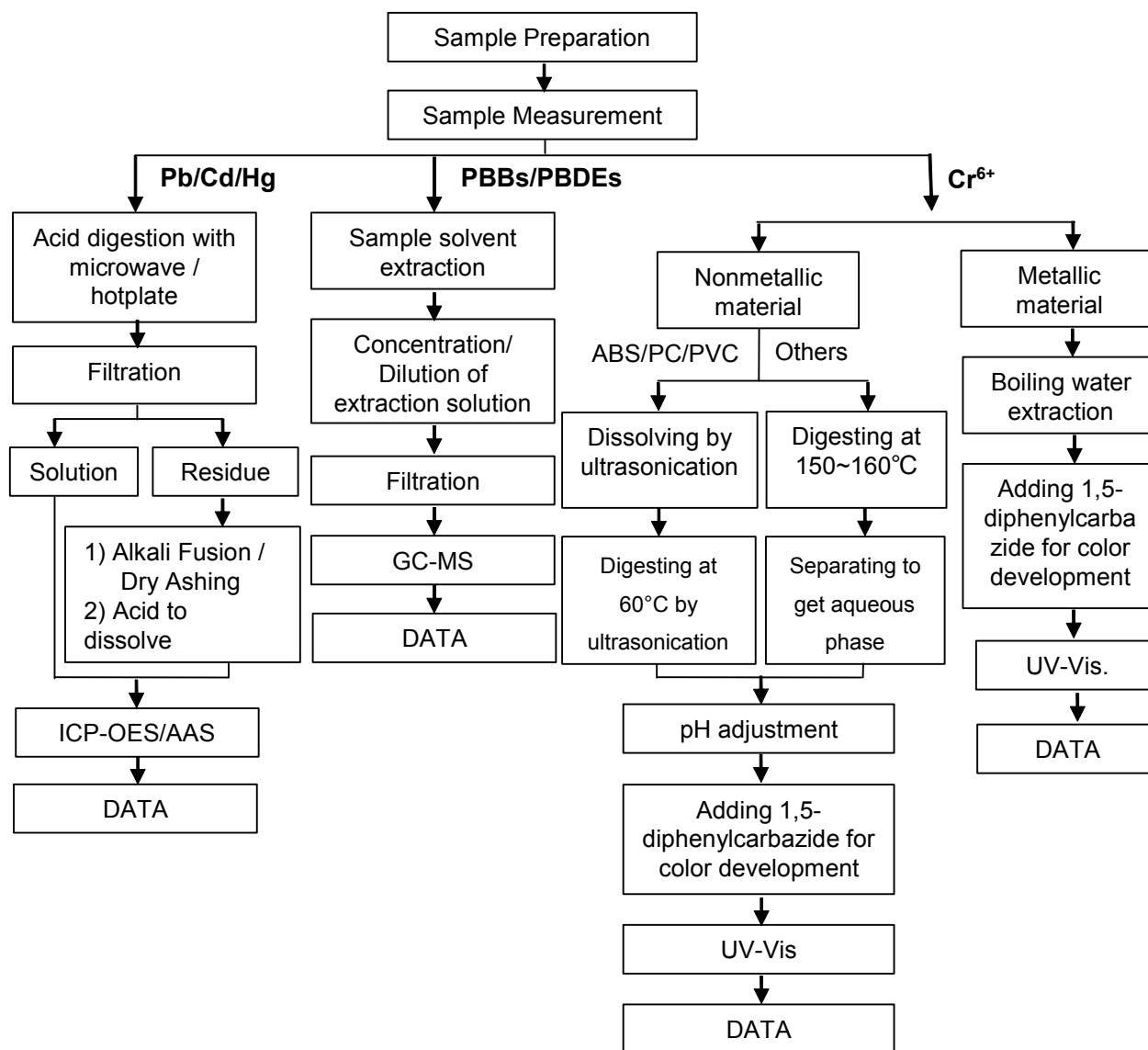
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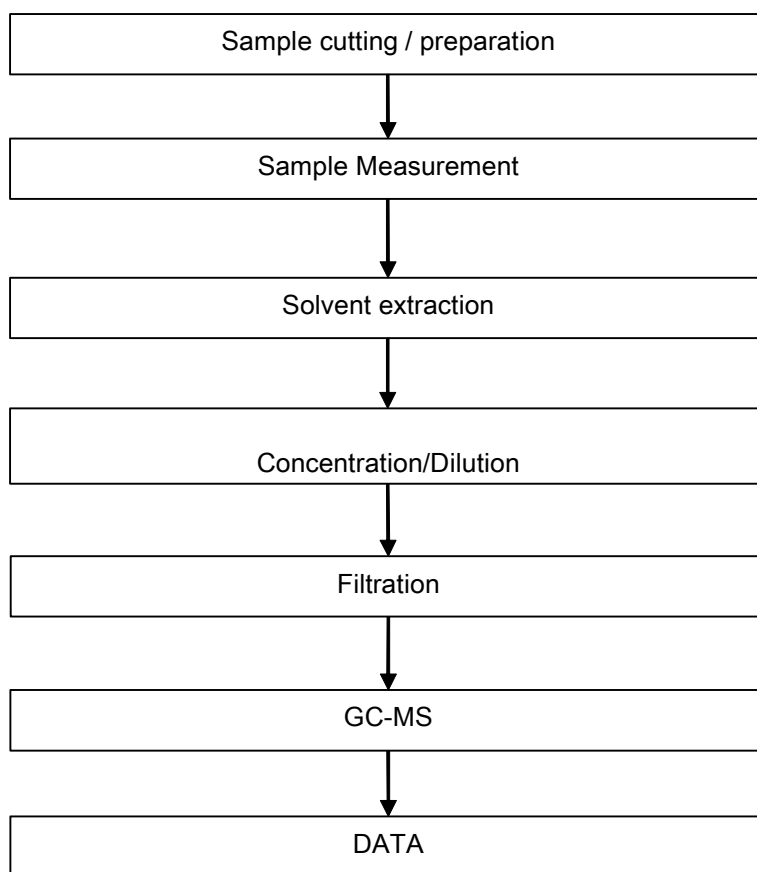
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



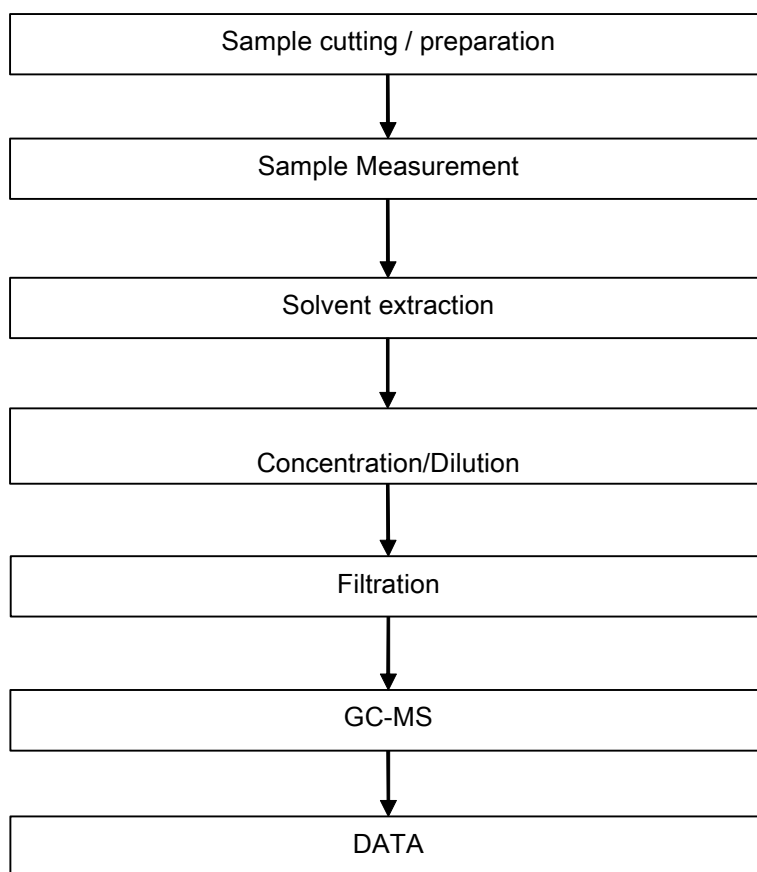
ATTACHMENTS

Phthalates Testing Flow Chart



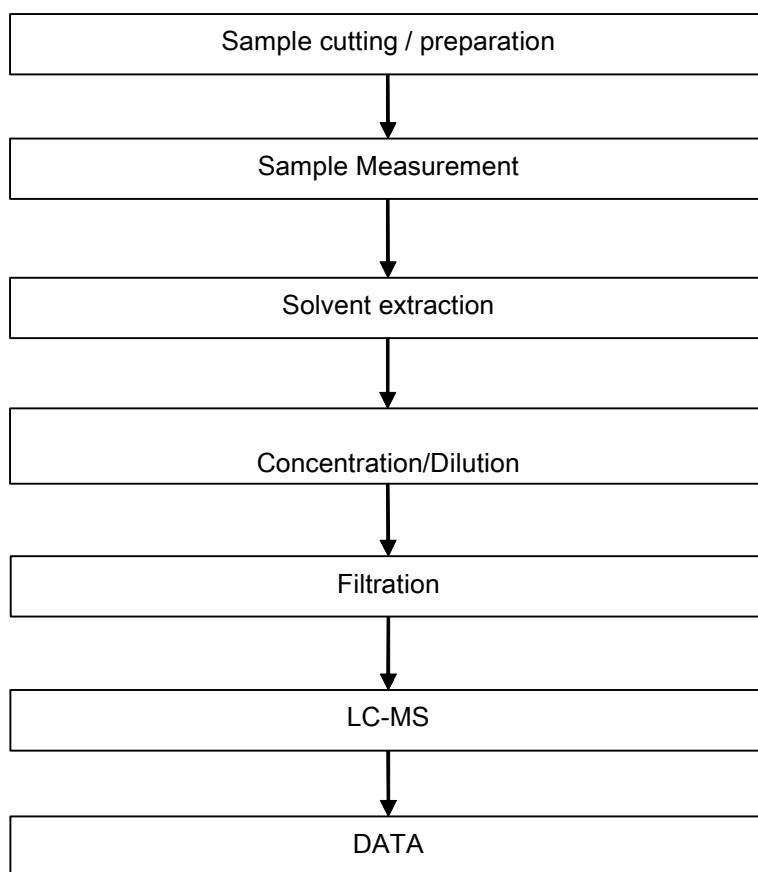
ATTACHMENTS

PAHs Testing Flow Chart



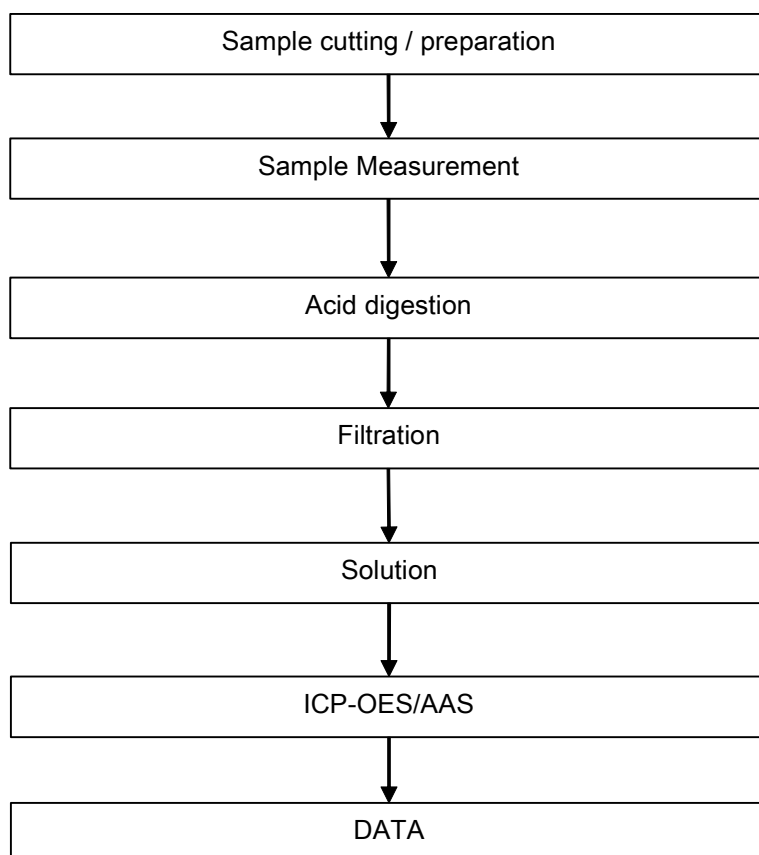
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PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report (SVHC)

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-02
Client Ref. Info. : I-PE-02;I-TPE-02;I-PP-02; I-PU-02; I-RU-02; I-TPR-02;I-PPE-02
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



Test Report (SVHC)

No. CANEC1901488301

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.001	Black liquid	6
SN2	CAN19-014883.004	Black liquid	181
SN3	CAN19-014883.007	Black liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	004 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	007 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	004
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	004
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	004
I	4	Anthracene	120-12-7	0.050	004
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	004
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	004
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	004
I	8	Cobalt dichloride*	7646-79-9	0.005	004
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	004
I	10	Diarsenic trioxide*	1327-53-3	0.005	004
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	004
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4,319 4- 55-6	0.050	004
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	004
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	004
I	15	Triethyl arsenate*	15606-95-8	0.005	004
II	16	2,4-Dinitrotoluene	121-14-2	0.050	004
II	17	Acrylamide	79-06-1	0.050	004
II	18	Anthracene oil**	90640-80-5	0.050	004
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	004



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	004
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	004
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	004
II	23	Diisobutyl phthalate	84-69-5	0.050	004
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	004
II	25	Lead chromate*	7758-97-6	0.005	004
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	004
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	004
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	004
III	29	Ammonium dichromate*	7789-09-5	0.005	004
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	004
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	004
III	32	Potassium chromate*	7789-00-6	0.005	004
III	33	Potassium dichromate*	7778-50-9	0.005	004
III	34	Sodium chromate*	7775-11-3	0.005	004
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	004
III	36	Trichloroethylene	79-01-6	0.050	004
IV	37	2-Ethoxyethanol	110-80-5	0.050	004
IV	38	2-Methoxyethanol	109-86-4	0.050	004



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	004
IV	40	Chromium trioxide*	1333-82-0	0.005	004
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	004
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	004
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	004
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	004
V	45	1,2,3-trichloropropane	96-18-4	0.050	004
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	004
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	004
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	004
V	49	2-ethoxyethyl acetate	111-15-9	0.050	004
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	004
V	51	Strontium chromate*	7789-06-2	0.005	004
VI	52	1,2-Dichloroethane	107-06-2	0.050	004
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	004
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	004
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	004
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	004
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	004
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	004
VI	60	Calcium arsenate*	7778-44-1	0.005	004
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	004
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	004
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	004
VI	64	Lead dipicrate*	6477-64-1	0.005	004
VI	65	Lead styphnate*	15245-44-0	0.005	004
VI	66	N,N-dimethylacetamide	127-19-5	0.050	004
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	004
VI	68	Phenolphthalein	77-09-8	0.050	004
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	004
VI	70	Trilead diarsenate*	3687-31-8	0.005	004
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	004
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	004
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	004
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	004
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	004
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	004
VII	78	Diboron trioxide*	1303-86-2	0.005	004
VII	79	Formamide	75-12-7	0.050	004
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	004
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	004
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	004
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	004
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	004
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	004
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	004
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	004
VIII	88	1-Bromopropane	106-94-5	0.050	004
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	004
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	004
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	004
VIII	93	4-Aminoazobenzene	60-09-3	0.050	004
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	004
VIII	95	4-Nonylphenol, branched and linear	-	0.050	004
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	004
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	004
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	004
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	004
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	004
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	004
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	004
VIII	103	Diethyl sulphate	64-67-5	0.050	004
VIII	104	Diisopentylphthalate	605-50-5	0.050	004
VIII	105	Dimethyl sulphate	77-78-1	0.050	004
VIII	106	Dinoseb	88-85-7	0.050	004
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	004
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	004
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	004
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	004
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	004
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	004
VIII	114	Lead cyanamidate*	20837-86-9	0.005	004
VIII	115	Lead dinitrate*	10099-74-8	0.005	004
VIII	116	Lead monoxide*	1317-36-8	0.005	004
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	004
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	004
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	004
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	004
VIII	121	Methoxyacetic acid	625-45-6	0.050	004
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	004
VIII	123	N,N-dimethylformamide	68-12-2	0.050	004
VIII	124	N-Methylacetamide	79-16-3	0.050	004
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	004
VIII	126	o-Aminoazotoluene	97-56-3	0.050	004
VIII	127	o-Toluidine	95-53-4	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	004
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	004
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	004
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	004
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	004
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	004
VIII	134	Tetraethyllead*	78-00-2	0.005	004
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	004
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	004
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	004
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	004
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	004
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	004
IX	141	Cadmium oxide*	1306-19-0	0.005	004
IX	142	Cadmium*	7440-43-9	0.005	004
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	004
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	004
X	145	Cadmium sulphide*	1306-23-6	0.005	004
X	146	Dihexyl phthalate	84-75-3	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	004
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	004
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	004
X	150	Lead di(acetate)*	301-04-2	0.005	004
X	151	Trixylyl phosphate	25155-23-1	0.050	004
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	004
XI	153	Cadmium chloride*	10108-64-2	0.005	004
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	004
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	004
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	004
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	004
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	004
XII	159	Cadmium fluoride*	7790-79-6	0.005	004
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	004
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	004
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	004
XIV	164	1,3-propanesultone	1120-71-4	0.050	004
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	004
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	004
XIV	167	Nitrobenzene	98-95-3	0.050	004
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	004
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	004
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	004
XVI	171	4-Heptylphenol, branched and linear	-	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	004
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	004
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	004
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	004
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	004
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	004
XVIII	178	Cadmium carbonate*	513-78-0	0.005	004
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	004
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	004
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	004
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	007
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	007
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	007
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	007
XIX	186	Disodium octaborate*	12008-41-2	0.005	007



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XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	007
XIX	188	Ethylenediamine	107-15-3	0.050	007
XIX	189	Lead*	7439-92-1	0.005	007
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	007
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	007
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	001
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	001
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	001
XX	195	Fluoranthene	206-44-0	0.050	001
XX	196	Phenanthrene	85-01-8	0.050	001
XX	197	Pyrene	129-00-0	0.050	001



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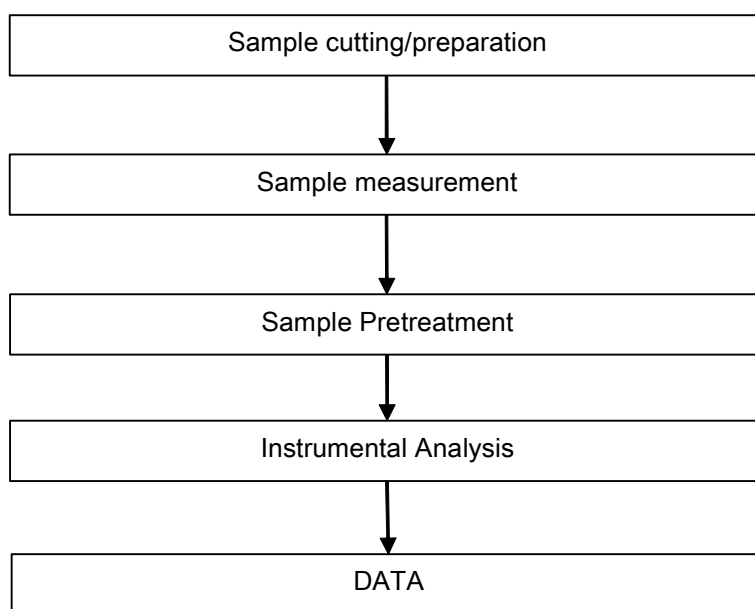
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ATTACHMENTS

SVHC Testing Flow Chart



Test Report (SVHC)

No. CANEC1901488301

Date: 30 Jan 2019

Page 20 of 21

Sample photo:



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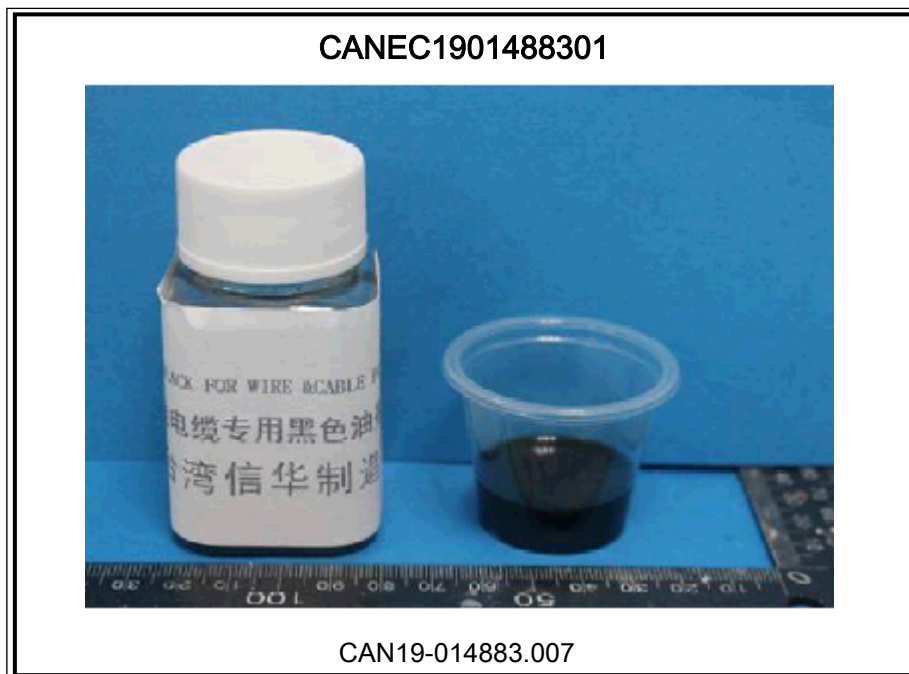
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Test Report (SVHC)

No. CANEC1901488301

Date: 30 Jan 2019

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*** End of Report ***

Test Report

No. CANEC1910676507

Date: 12 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-01

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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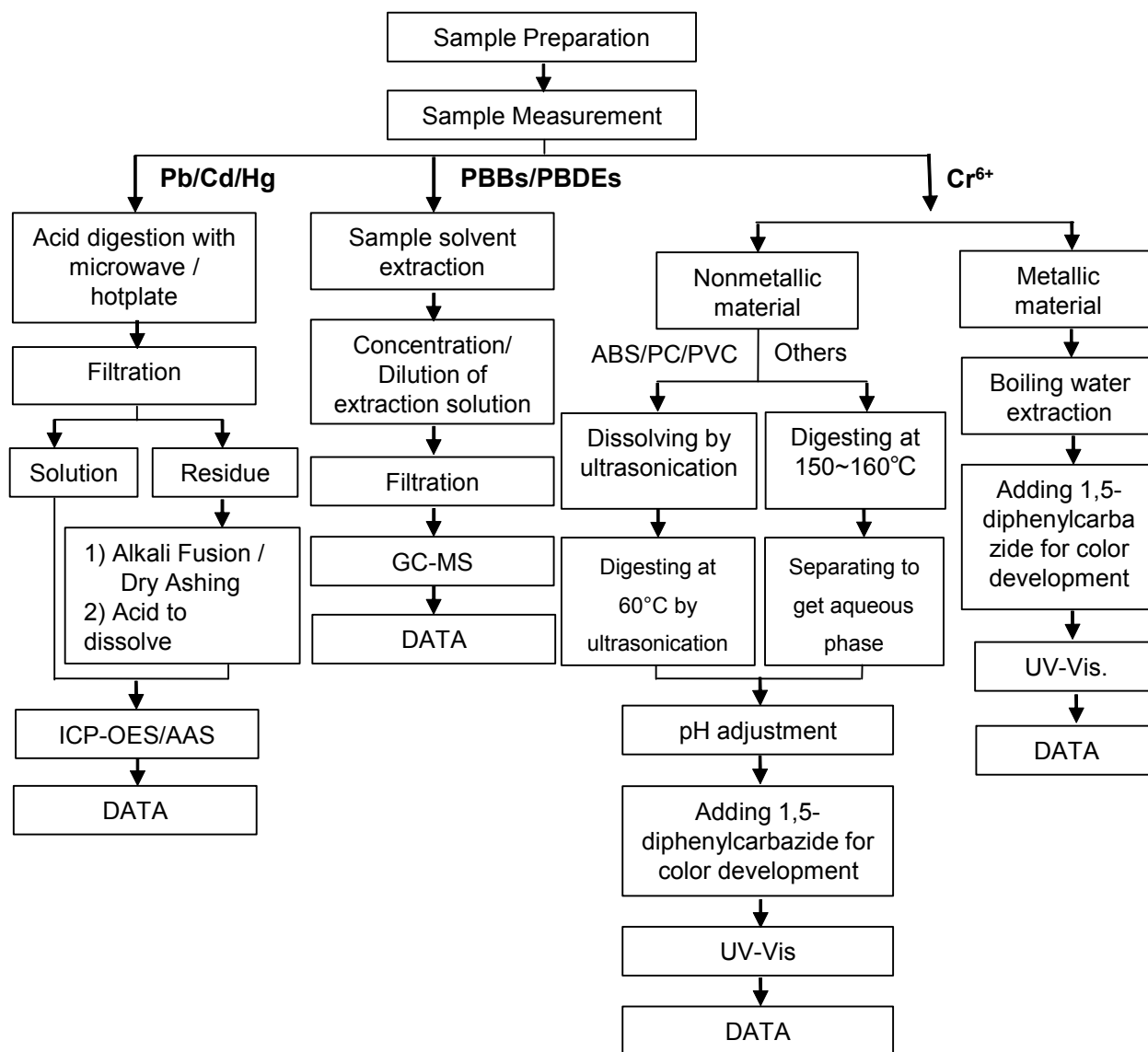
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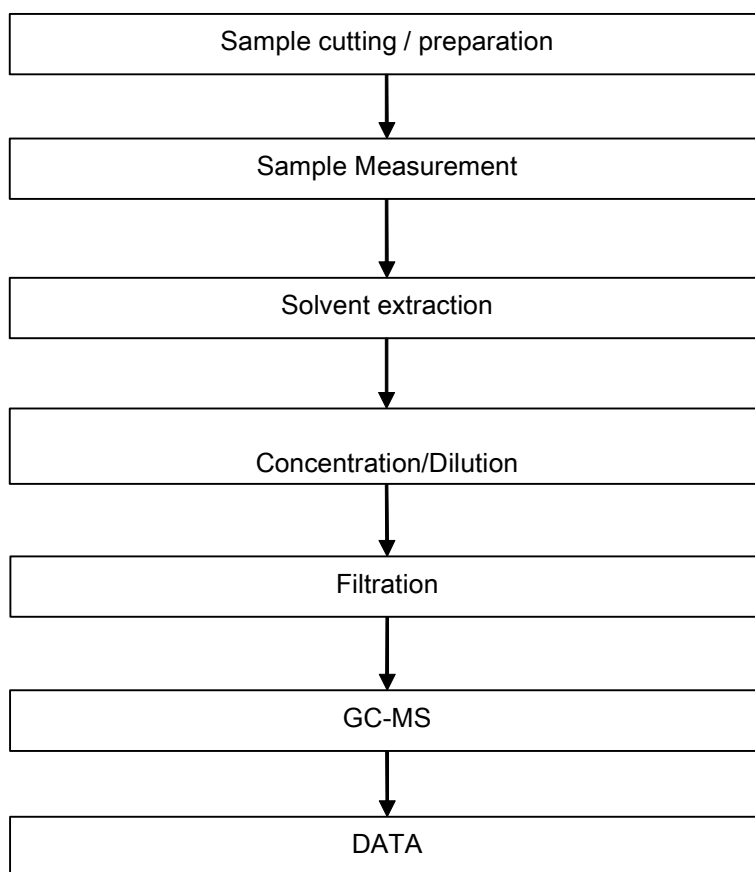
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Sample photo:

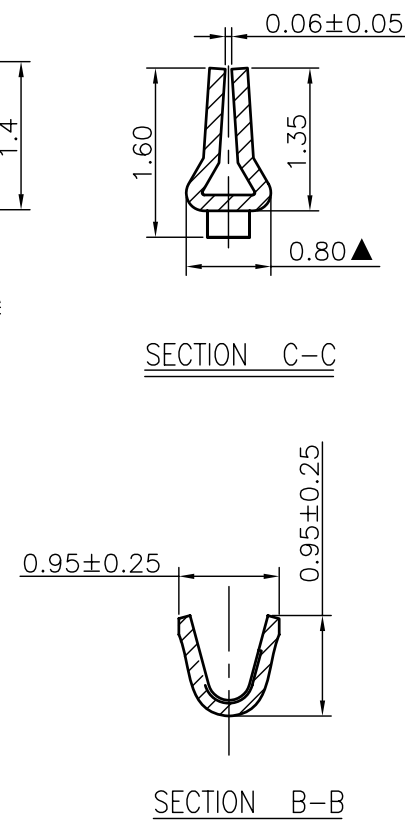
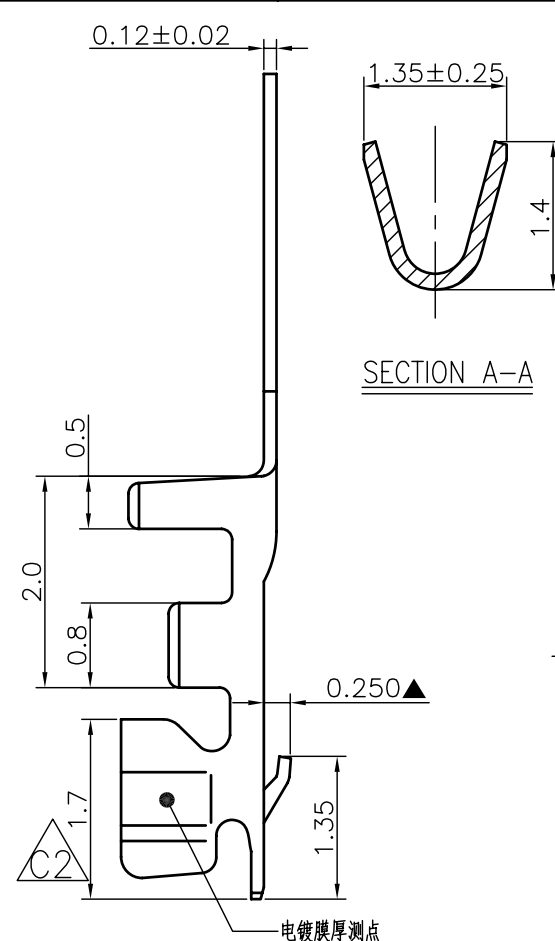
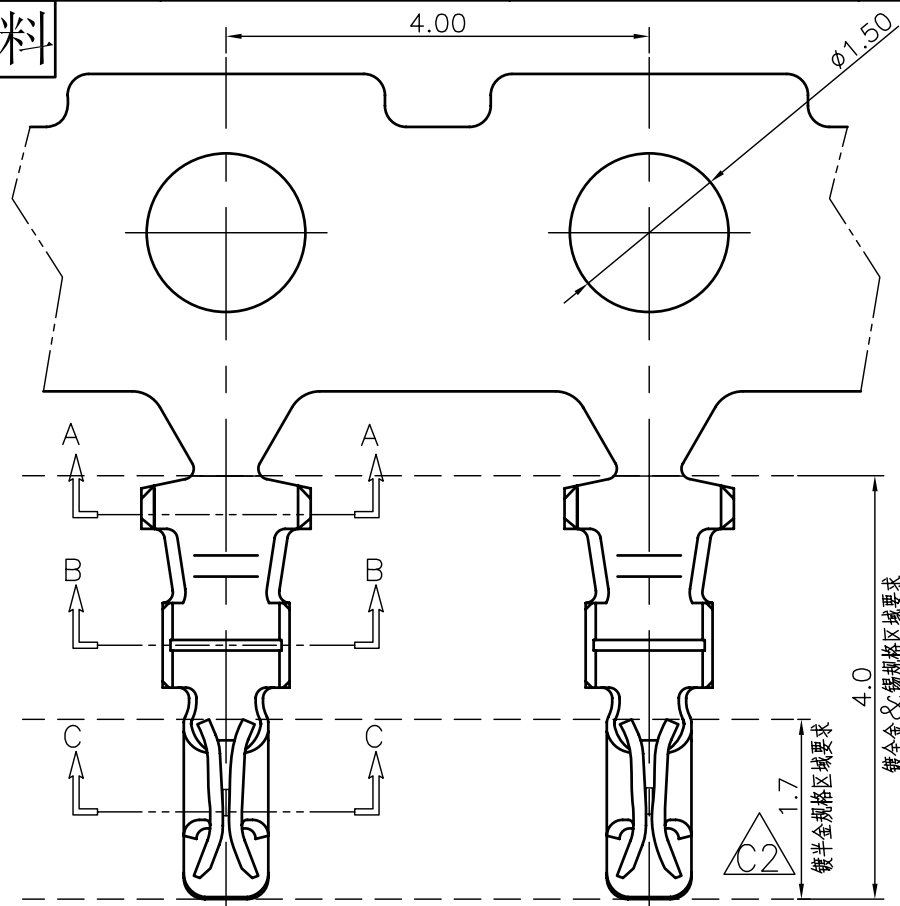


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环保物料





Specification & Ordering Information:

Options	Part No	Wire Range	Insulation O.D.	Material	Finish	Qty/reel
1	11002TOP-2E-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Tin-plated 80μ"Min	2,0000 PCS
2	11002TOP-5X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Overall.	2,0000 PCS
3	11002TOP-0X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Contact Area.	2,0000 PCS

Note:11002TOP-XX-S-NK

0A--Gold-flash	0B--2μ"	0C--3μ"	0D--4μ"	0E--5μ"	5A--Gold-flash	5B--2μ"	5C--3μ"	5D--4μ"	5E--5μ"
0F--10μ"	0G--15μ"	0H--30μ"	0I--50μ"		5F--10μ"	5G--15μ"	5H--30μ"	5I--50μ"	

C3	11.05.31	TR1105310082	EAST	唐海江	一般公差 GENERAL TOLERANCE		绘图 DR.	EAST	<div><div>JCTC®</div><div>东莞市胜蓝电子有限公司</div><div>TERMINAL & CONNECTORS — 富强电子厂 —</div></div>		料号 PART NO. 11002TOP-XX-S-NK			
C2	10.08.05	TR1007270049	EAST	唐海江	X.X ±0.25	X' ±5°	校对 CHK.	唐海江			文件编号 NUMBER ENDE05			
C1	09.12.21	修改电镀码料号,增加Mark码	EAST	唐海江	X.XX ±0.15	X.X' ±2°	审核 CHK.	梁友连						
C0	09.12.09	换图框发行	EAST	唐海江	X.XXX ±0.08	▲ MAJOR DIM.	核准 CHK.	梁友连			品名 TITLE JST1.0端子 松端			
版次 REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.	单位 UNIT mm	 		核准 APPD.	王志刚			比例 SCALE 1/1	SHEET 1/1	版次 REV. C3
A		B		C		D		E		F				

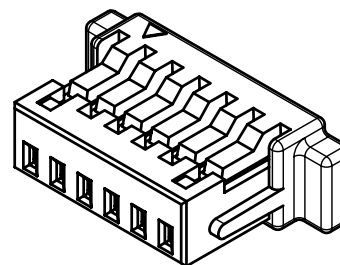
环保物料

Specifications:

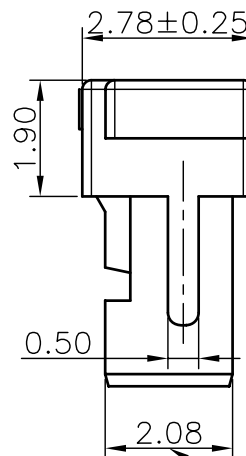
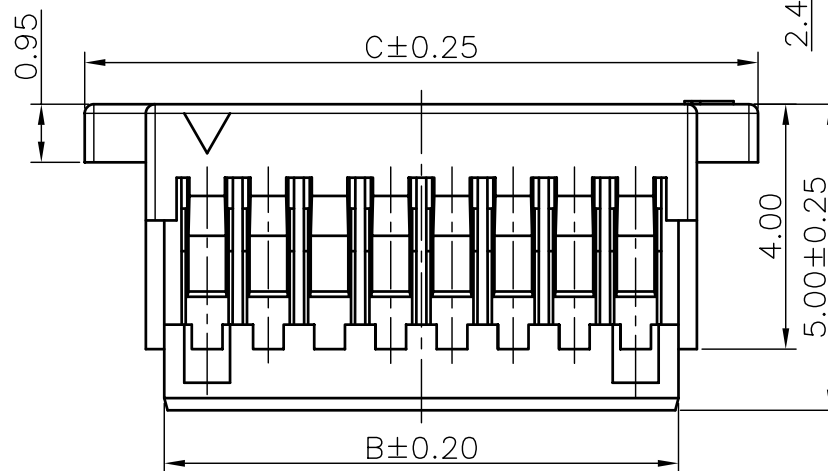
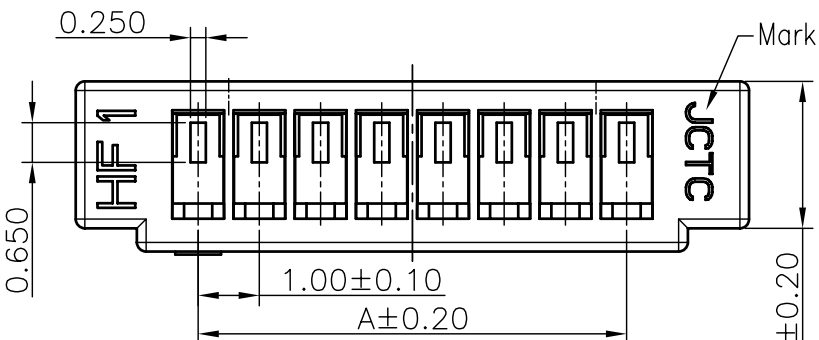
Rated Voltage : 50V AC/DC
Rated Current : 1A AC,DC
Withstand Voltage : 500V AC/minute
Contact Resistance : 20mΩ(MAX.)
Insulation Resistance : 100MΩ(MIN.)
Temperature Range : -25°C~+85°C

Dimensional Ordering Information:

Circuits Part No	Dimensions		
	A	B	C
2P	1.00	2.40	5.00
3P	2.00	3.40	6.00
4P	3.00	4.40	7.00
5P	4.00	5.40	8.00
6P	5.00	6.40	9.00
7P	6.00	7.40	10.00
8P	7.00	8.40	11.00
9P	8.00	9.40	12.00
10P	9.00	10.40	13.00
11P	10.00	11.40	14.00
12P	11.00	12.40	15.00
13P	12.00	13.40	16.00
14P	13.00	14.40	17.00
15P	14.00	15.40	18.00
16P	15.00	16.40	19.00
17P	16.00	17.40	20.00
18P	17.00	18.40	21.00
19P	18.00	19.40	22.00
20P	19.00	20.40	23.00
21P	20.00	21.40	24.00
24P	23.00	24.40	27.00
30P	29.00	30.40	33.00



18P~2.11



11002H00-NPX-HF-NK



① ② ③④ ⑤ ⑥

- ① Series No.
- ② H90 : Side Contact
H00 : Up Contact
- ③ No. of Circuits
- ④ A: Product color (A--Y)
Blank : Natural type
- ⑤ HF : Halogen Free
- ⑥ Blank: Mark NK: No Mark

Suitable for JCTC 11002 series terminal

Part No.	Material	Color
11002H00-NP	PBT,UL94V-0	Natural(White)
11002H00-NPA	PBT,UL94V-0	Black
11002H00-NPC	Nylon 66,UL94V-0	Red
11002H00-NPE	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF	Nylon 66,UL94V-0	Black

Part No.	Material	Color
11002H00-NP-NK	PBT,UL94V-0	Natural(White)
11002H00-NPA-NK	PBT,UL94V-0	Black
11002H00-NPC-NK	Nylon 66,UL94V-0	Red
11002H00-NPE-NK	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF-NK	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF-NK	Nylon 66,UL94V-0	Black

C4	12.07.24	将18P主体厚度由2.08改为2.11	龚友连	王志刚	一般公差 GENERAL TOLERANCE		绘 图 DR. 校 对 CHK. 审 核 CHK. 核 准 APPD.	欧阳小强	JCTC® 东莞市胜蓝电子有限公司 TERMINAL & CONNECTORS —— 富强电子厂 ——	料号 PART NO. 11002H00-NPX-XX-XX			
C3	11.07.19	主体增加“HF”	龚友连	王志刚	X.X ±0.25	X' ±5°				文件编号 NUMBER			
C2	10.11.25	新增黑色无卤规格	龚友连	王志刚	X.XX ±0.15	X.X' ±2°				ENDE05			
C1	10.07.06	新增24P,30P规格	龚友连	王志刚	X.XXX ±0.08	▲ MAJOR DIM.				品名TITLE			
版次REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.	单位 UNIT mm	 				JST 1.00mm PITCH HOUSING		比例SCALE 1/1	SHEET 1/1
A			B			C		D		E		F	

**ECBT2.E338796****Connectors for Use in Data, Signal, Control and Power Applications - Component**[Page Bottom](#)**Connectors for Use in Data, Signal, Control and Power Applications - Component**[See General Information for Connectors for Use in Data, Signal, Control and Power Applications - Component](#)**DONGGUAN CITY SHENGLAN ELECTRONICS CO LTD**

E338796

Hexin Rd
 Shatou District
 Changan
 Dongguan, Guangdong 523846 CHINA

Connectors, Model(s) Cat. No. 11002H00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 17, 18, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W90, follow by -2X, follow by 5, 6, 8, 9, 10, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11004H, followed by -2x10 or -2x15, followed by PL.

Cat. No. 11006H00, followed by -2X10, -2X15 or -2X20, followed by P.

Cat. No. 11252H, followed by -2x, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11252W, followed by -2X, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11253H, followed by -20 or -30, followed by P.

Cat. No. 11253W, followed by -20 or -30, followed by P.

Cat. No. 11258H00, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow A thru Z or 1 thru 9.

Cat. No. 11258W90, follow by -S, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 11500H00, followed by -2 thru -15, followed by P.

Cat. No. 11500W00, followed by -2 thru -15, followed by P.

Cat. No. 12002H00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W90, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12003H, followed by -2x, followed by 2 thru 17, followed by P.

Cat. No. 12009H00, followed by -2X2, -2X3 or -2X4, followed by P.

Cat. No. 12504H00, followed by -2 thru -15, followed by P, followed by -L.

Cat. No. 12505H00, followed by -2 thru -15 or -20, followed by P.

Cat. No. 12505W00, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12505W90, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12541H, followed by -2x, followed by 1 thru 20, followed by P.

Cat. No. 12543H, followed by -2 thru -20, followed by P.

Cat. No. 12547H00, followed by -3 thru -8, followed by P.

Cat. No. 13502W90, followed by -2P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 13962H00, 13962W00 and 13962W90, followed by -2P thru -10P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 22001H, followed by -2 thru -16, followed by P.

Cat. No. 22501H, followed by -2 thru -14, followed by P.

Cat. Nos. 10500H and 10500W, followed by -41 or -51, followed by P.

Cat. Nos. 11001H and 11001W, followed by -30, followed by P.

Cat. Nos. 11002H and 11002W, followed by -2 thru -20, followed by P.

Cat. Nos. 11003H and 11003W, followed by -2 thru -30, followed by P.

Cat. Nos. 11005H and 11005W, followed by -2X, followed by 2 thru 25, followed by P.

Cat. Nos. 11251H and 11251W, followed by -2 thru -15, followed by P.

Cat. Nos. 11254H00, 12006H, 12006W, 12504H and 12504W, followed by -2 thru -15, followed by P.

Cat. Nos. 11255H, 11255W, 11256H and 11256W, followed by -2 thru -30, followed by P.

Cat. Nos. 11257H, follow by -4 thru -15, followed by PL.

Cat. Nos. 11257W, 12503H00 and 12503W00, follow by -2 thru -15, followed by P.

Cat. Nos. 11501H and 11501W, followed by -2 thru -13, followed by P.

Cat. Nos. 11501H00 and 11501W00, followed by -14 or -15, followed by P.

Cat. Nos. 12001H and 12001W, followed by -2 thru -16, followed by P.

Cat. Nos. 12002H and 12002W, followed by -2x, followed by 2 thru 15, followed by P.

Cat. Nos. 12004H, 12004W and 12005W, follow by -2 thru -16, followed by P.

Cat. Nos. 12005H, follow by -2 thru -16, followed by PL.

Cat. Nos. 12501H and 12501W, followed by -2 thru -16, followed by P.

Cat. Nos. 12502H and 12502W, followed by -2 thru -15, followed by P.

Cat. Nos. 50801H and 50801W, follow by -2 thru -24, followed by P.

Cat. Nos. 51274H-7P and 51275H-7P.

Marking: Company name and model designation on the device or carton.

Last Updated on 2014-04-25

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Nylon 66 UL 94V-0 Natural color housing

SGS Job No. : CP19-049304 - SZ
 Tested Sample Info. : Nylon 66 UL 94V-0 Natural color housing
 Client Ref. Info. : PLEASE SEE REMARK
 Date of Sample Received : 05 Sep 2019
 Testing Period : 05 Sep 2019 - 17 Sep 2019
 Test Requested : Selected test(s) as requested by client.
 Test Method : Please refer to next page(s).
 Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS
Elementary Analysis	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
Red Phosphor	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Phthalate	See Results
Phthalate(s)	See Results
European Regulation POPs (EU) 2019/1021- Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	PASS
PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)	See Results



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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Jessie Li

Jessie Li
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-175989.003	White material

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	003
Antimony (Sb)	mg/kg	10	ND
Tin (Sn)	mg/kg	5	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, with reference to US EPA Method 3540C:1996), analysis was performed by GC-MS&HPLC-MS.

Test Item(s)	Unit	MDL	003
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Red Phosphor



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Test Method : SGS In-house method (GZTC CHEM-TOP-215-01), analysis was performed by PY-GC/MS/ICP-OES.

Test Item(s)	Unit	MDL	003
Red phosphorus	mg/kg	500	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to US EPA Method 3550C: 2007), analysis was performed by GC-MS.

Test Item(s)

Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)

Unit MDL 003
mg/kg 10 ND



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Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Di(2-ethylhexyl)adipate (DEHA)	103-23-1	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	%(w/w)	0.01	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.01	ND
Di-n-heptyl Phthalate (DnHpP)	3648-21-3	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND

Notes :

(1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:

i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.

ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.



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In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.

iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

Phthalate(s)

Test Method : With reference to SGS in house method (SGS-CCL-TOP-042-41) , analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Phthalic acid, mono-2-ethylhexyl ester(MEHP)	4376-20-9	%(w/w)	0.003	ND

European Regulation POPs (EU) 2019/1021– Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	1500	mg/kg	50	ND
Comment				PASS
Alkanes C14-C17, chloro (medium -chain chlorinated paraffins) (MCCPs)	-	mg/kg	50	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS / GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.01	ND
Perfluorooctane Sulfonates (PFOS)^		mg/kg	0.01	ND



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Notes :

(1) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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REMARK

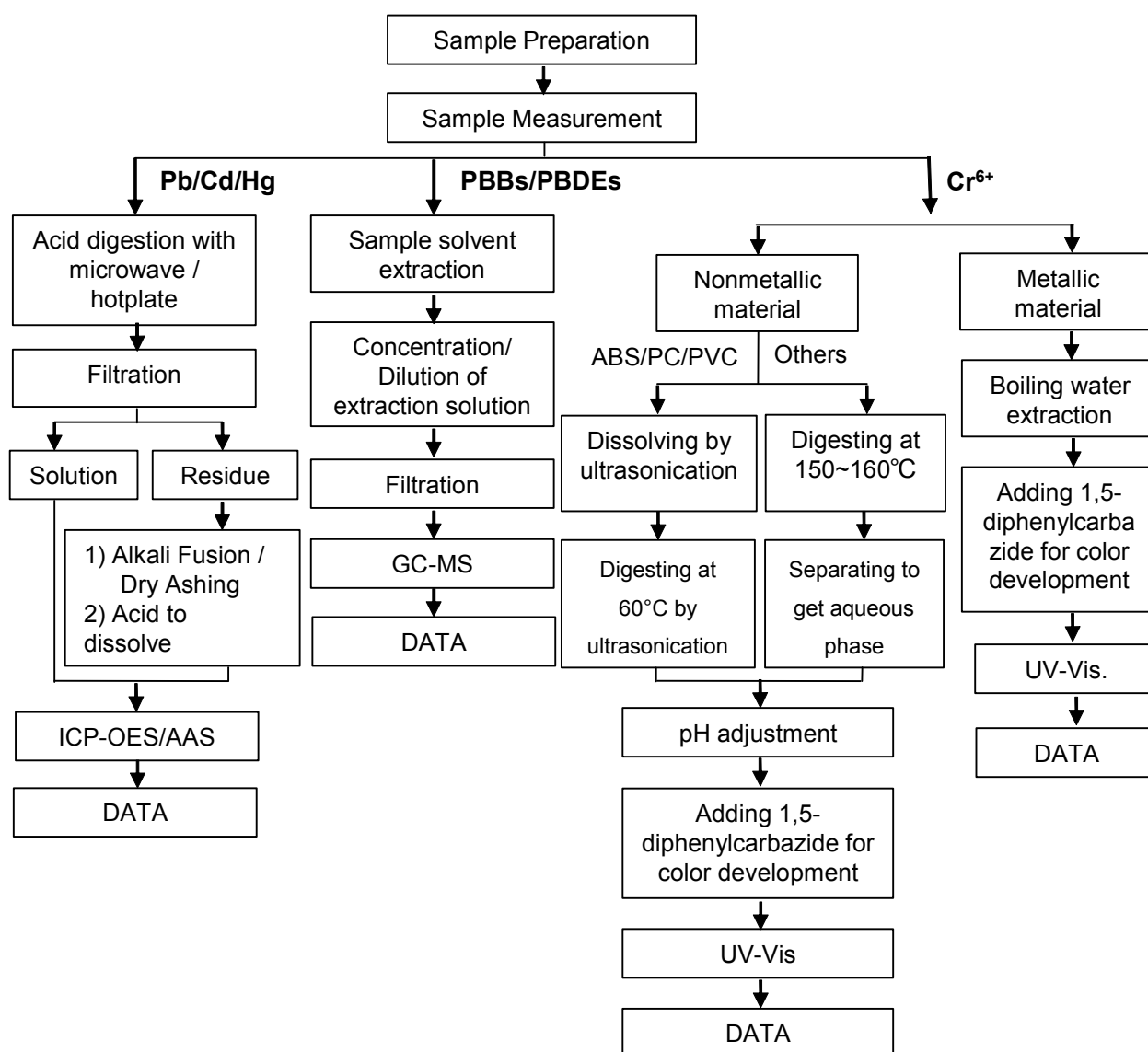
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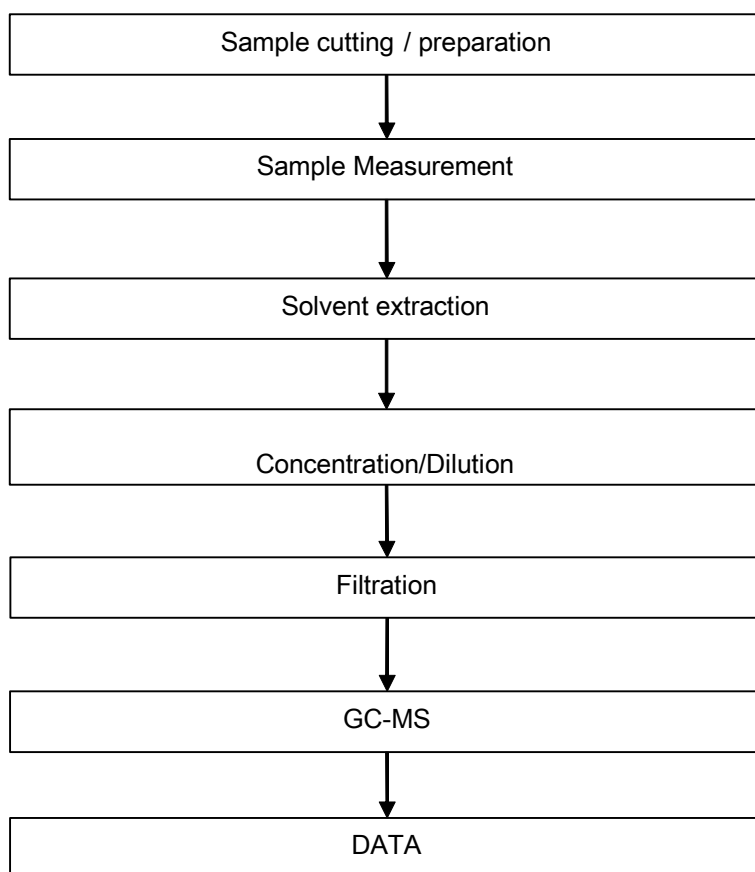
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



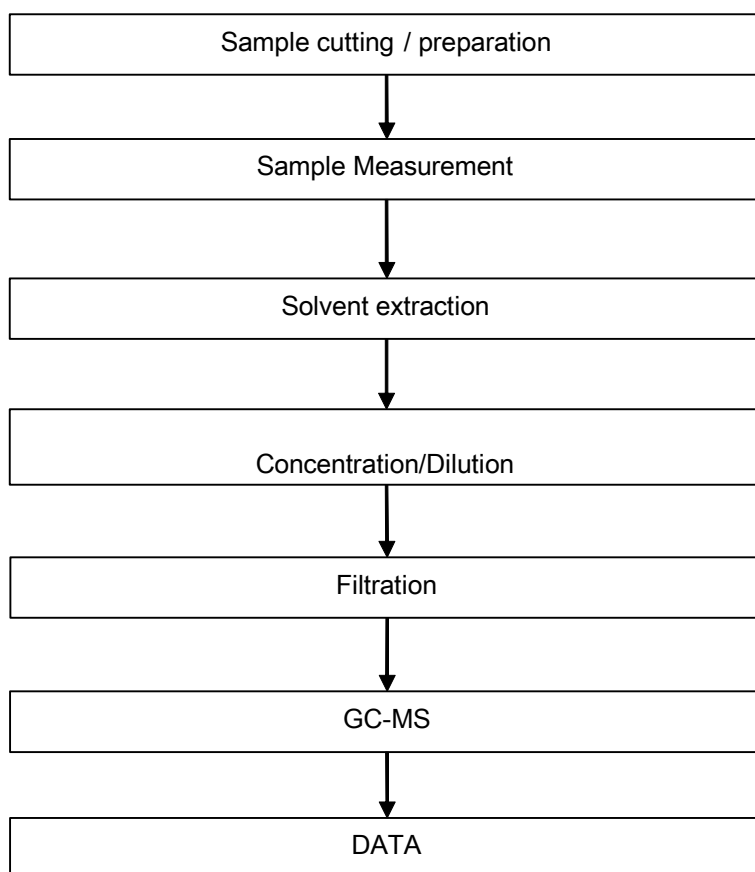
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Phthalates Testing Flow Chart



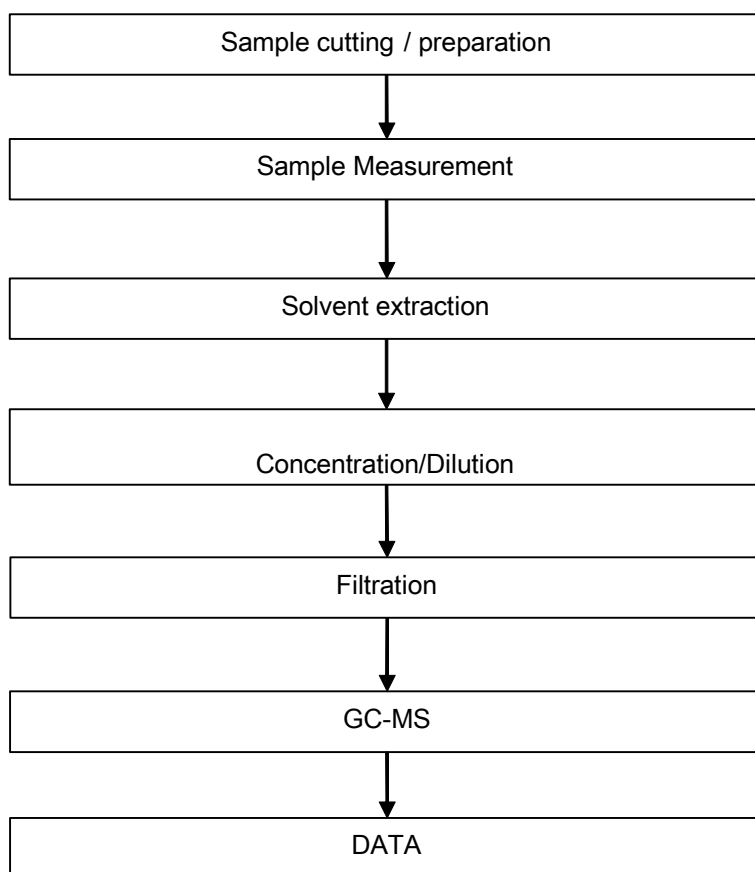
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HBCDD Testing Flow Chart



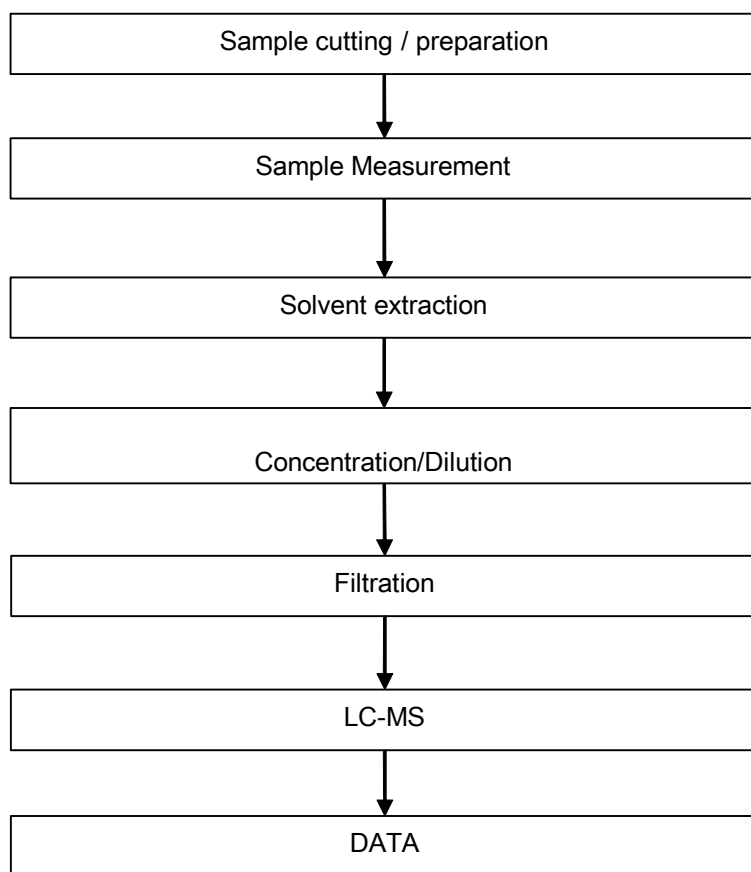
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PAHs Testing Flow Chart



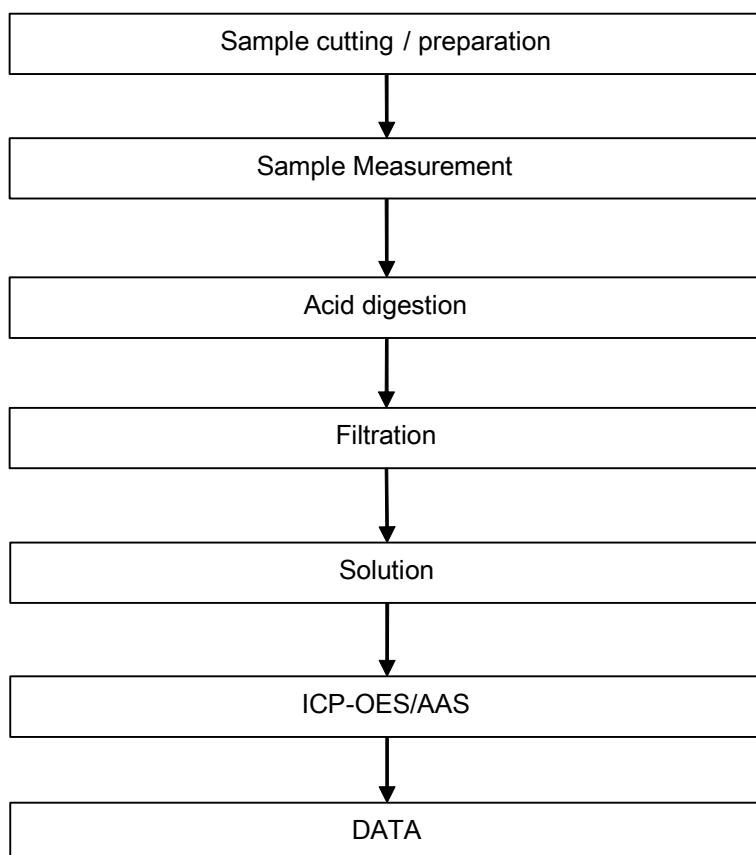
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PFOA / PFOS Testing Flow Chart



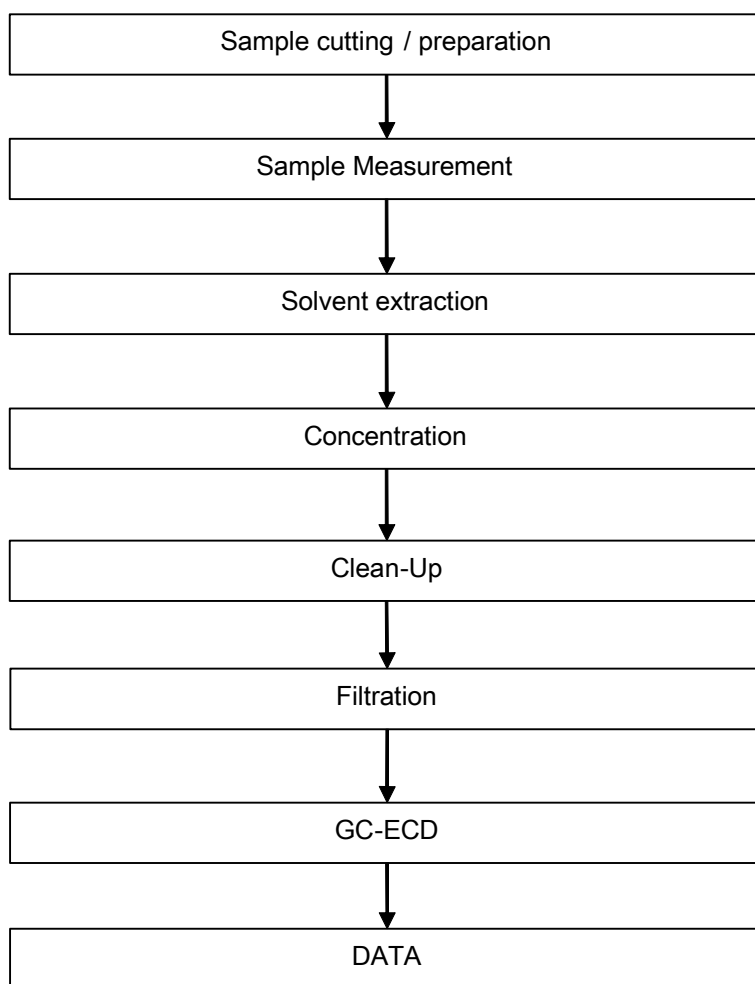
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Elementary Testing Flow Chart



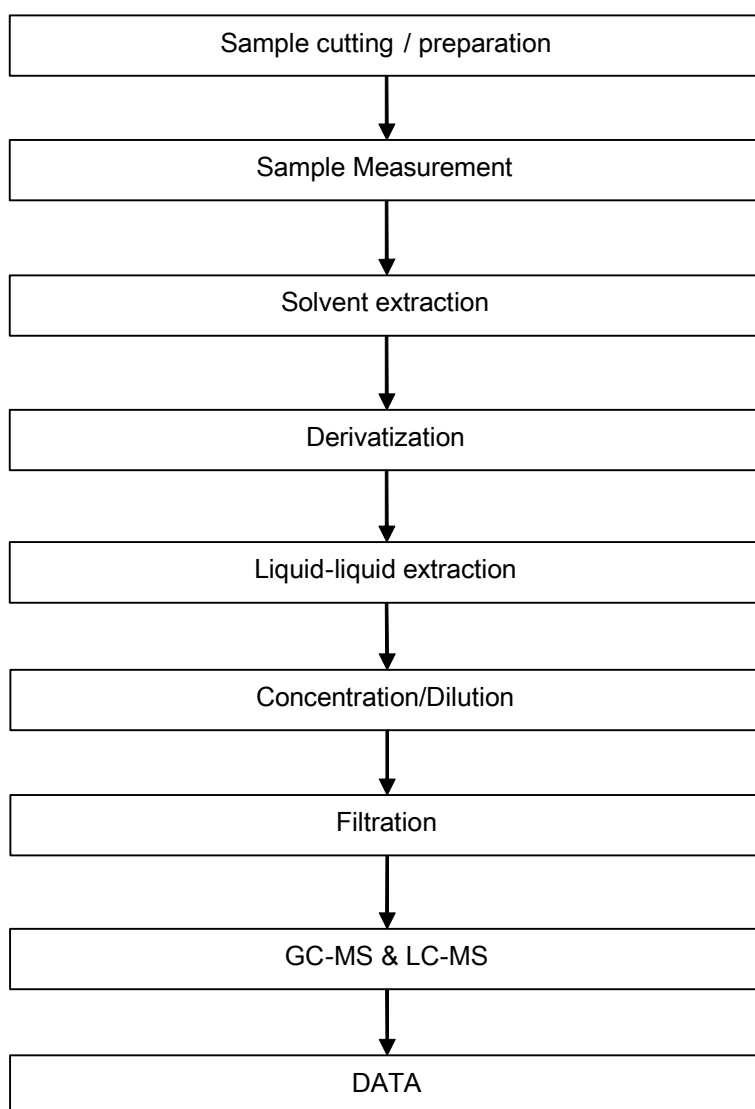
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SCCP/MCCP/LCCP Testing Flow Chart



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TBBP-A Testing Flow Chart



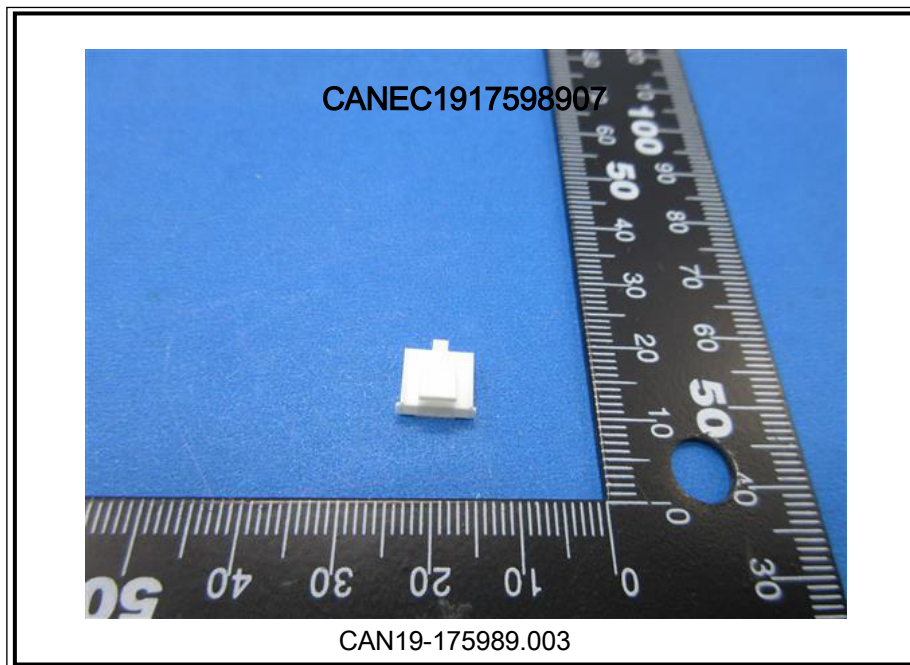
Test Report

No. CANEC1917598907

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



Test Report

No. CANEC1823638801

Date: 14 Nov 2018

Page 1 of 8

SHENGLAN TECHNOLOGY CO.,LTD

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

This report is to supersede test report CANEC1822941204

The following sample(s) was/were submitted and identified on behalf of the clients as : Phosphor copper nickel plated tin terminal pin

SGS Job No. : CP18-061410 - SZ

Model No. : 11255

Client Ref. Info. : PLEASE SEE REMARK

Date of Sample Received : 06 Nov 2018

Testing Period : 06 Nov 2018 - 09 Nov 2018

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo Yeung

Echo Yeung
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-236388.002	Silvery plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	12
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis



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Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Beryllium (Be)	mg/kg	5	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Perfluorooctanoic acid (PFOA)	335-67-1	µg/m ²	1.0	ND
Perfluorooctane Sulfonates (PFOS)^	-	µg/m ²	1.0	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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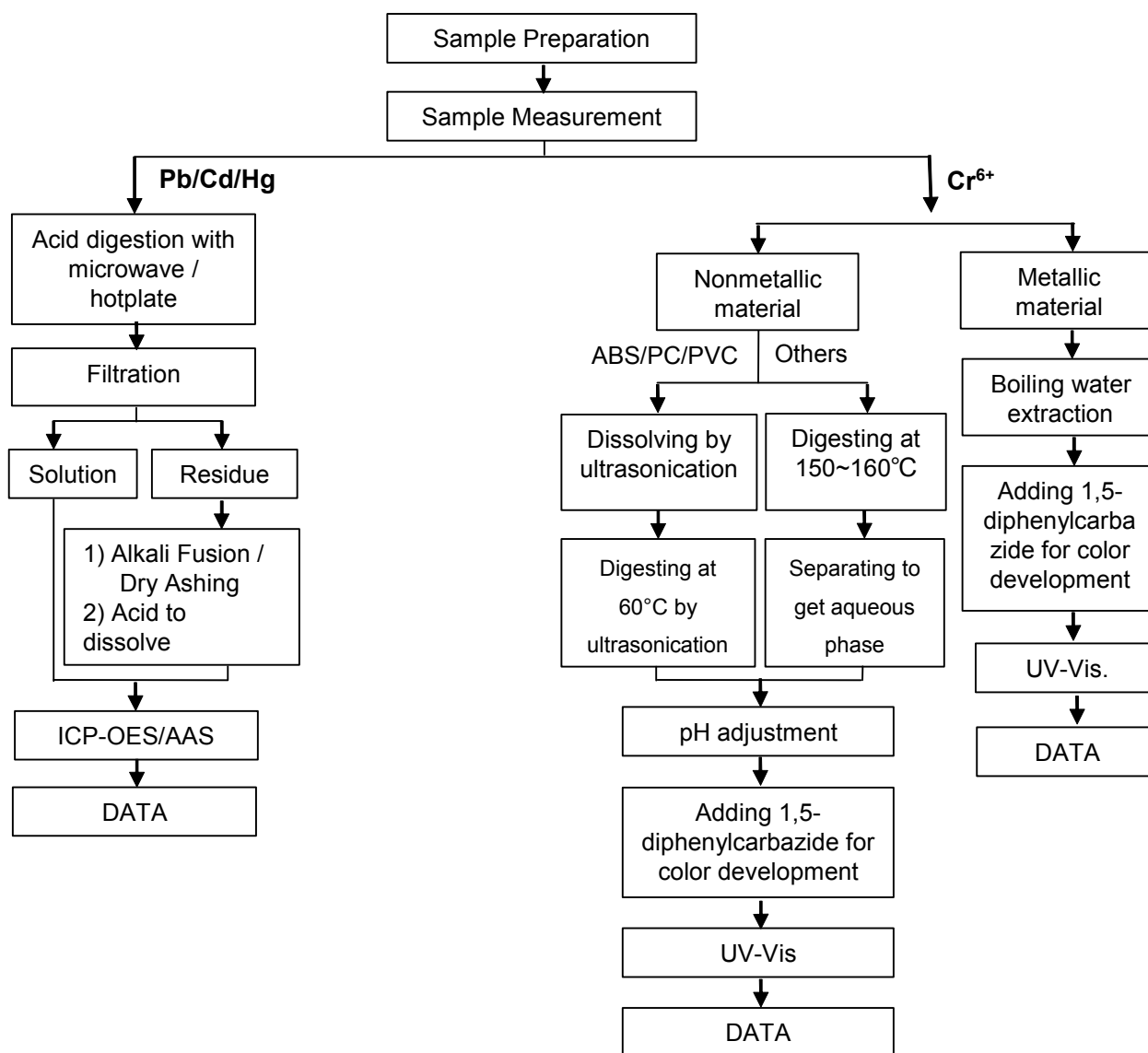
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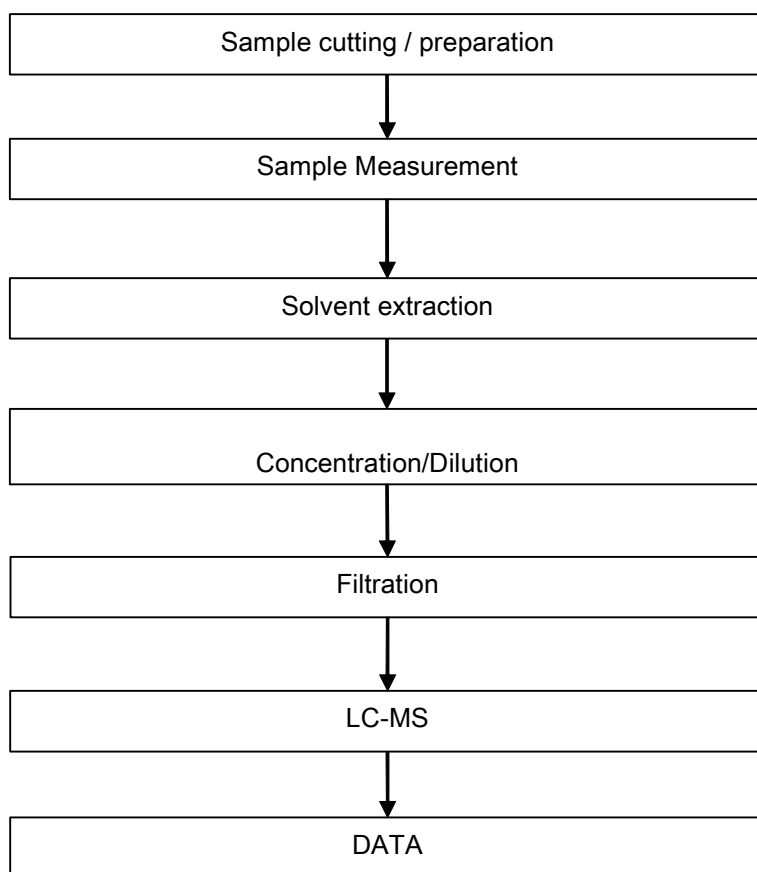
Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



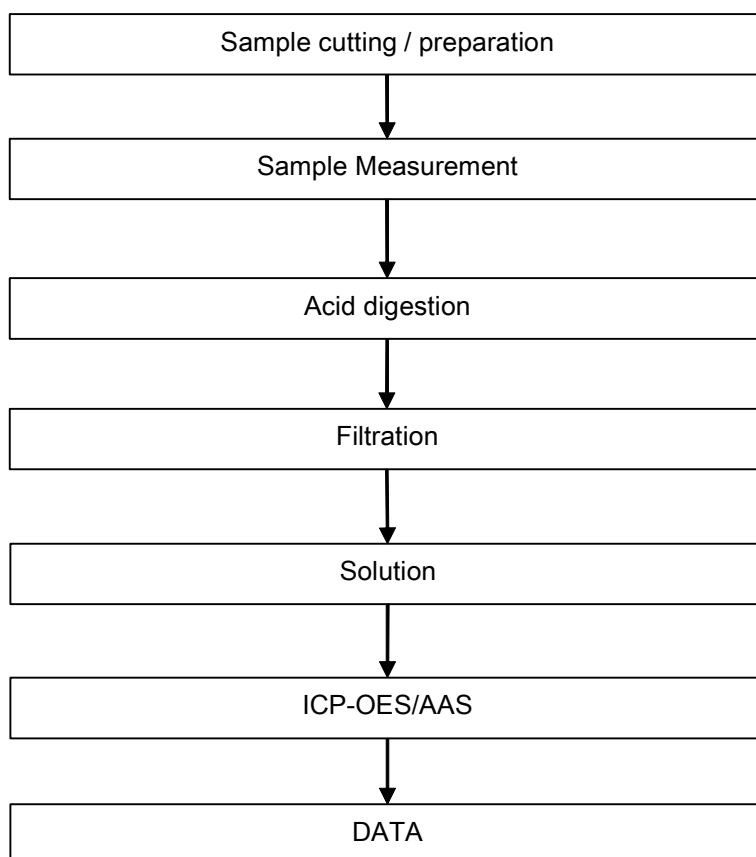
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PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



REMARK:

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Test Report

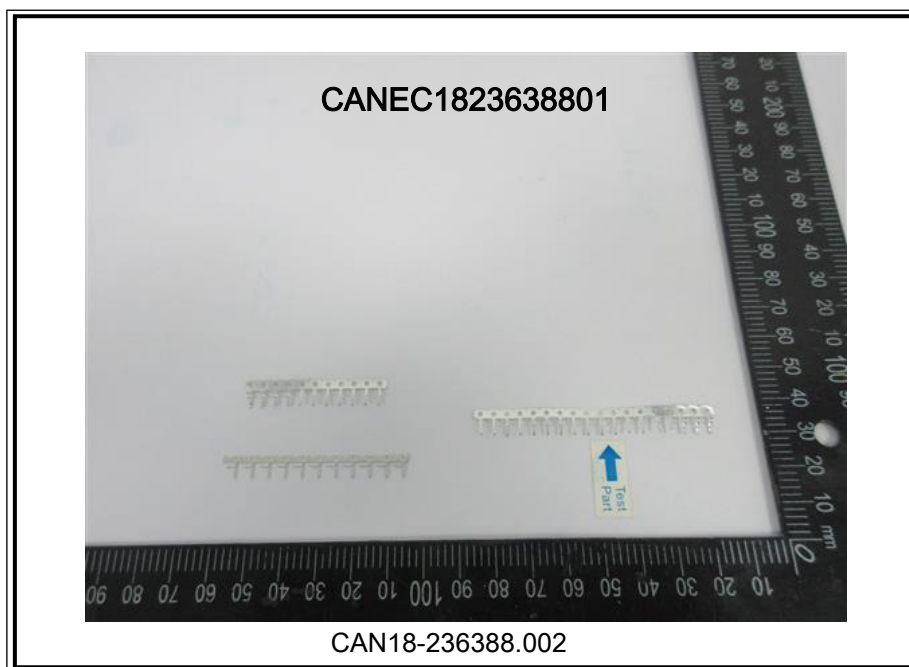
No. CANEC1823638801

Date: 14 Nov 2018

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Sample photo:



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HungYuanShuo Electronic Accessories CO.,LTD

产品规格承认书

版本：A/1

产品名称	H 无卤环保热缩套管	供应商代码	
规格/型号	所有系列	客户编号	

供應商確認（弘源碩電子材料有限公司）

拟制/日期	审核/日期
范松林 / 2012 年 1 月 15 日	宋大春 / 2012 年 1 月 15 日

客戶確認

客户批准/日期		
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1 主题内容与适用范围

本承认书规定了无卤环保阻燃型热收缩套管的技术要求、试验方法、检验规则以及包装等内容。

本承认书适用于电线连接、焊点保护、电线端部处理、线束及电子元器件的防护和绝缘处理、健身器材零部件和钢结构表面防护、相关产品的防锈和防腐处理、电线和其它产品的标识等用途的无卤阻燃型热收缩套管。

2 引用标准

Standard for Extruded Electrical Tubing UL 224.

3 术语

3.1 热收缩材料

以可塑性线型高聚物或高聚物合金为基材，用高能辐照方法或化学方法使聚合物分子链部分交联成为网状结构获得弹性“记忆效应”，经加热扩张至特定尺寸后冷却定型，使用时加热到适当温度后自行收缩到扩张前的形状和尺寸，这种材料称为热收缩材料。

3.2 热收缩套管

将上述高聚物或高聚物合金通过挤出成型得到规定尺寸的管状中间产品，辐照（或化学）交联后加热扩张，冷却定型得到的具有一定尺寸的管状产品成为热收缩套管。

3.3 绿色 RSFR 无卤阻燃热收缩材料

在热收缩材料中添加一定量的不含卤素、重金属等对环境有害的阻燃剂，使之符合一定阻燃要求和环保要求，则成为绿色 RSFR 无卤阻燃热收缩材料。

4 技术要求

4.1 使用条件

4.1.1 连续使用的环境温度： $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$ 。

4.1.2 可在酸、碱条件下长期使用。

4.1.3 可在环保要求严格的条件下长期使用。

4.2 外观要求

4.2.1 制品表面无明显划伤、凹凸不平、竹节状缺陷。

4.2.2 表面光洁、无油污、无积尘。

4.2.3 印字清晰、无重影、无多余墨迹、无印不全或打滑现象。

4.3 热收缩性能

4.3.1 起始收缩温度 70°C ；超薄型完全收缩温度 110°C ，普通型完全收缩温度 125°C 。

按照 UL224 标准，完全收缩到位温度为 200°C ，3 分钟。

4.3.2 纵向收缩率不超过 $\pm 5\%$

4.4 材料的性能特性

材料的理化性能符合表 1 规定。

4.5 收缩套管的产品尺寸

无卤阻燃型薄壁热收缩套管的产品尺寸符合表 2 规定，无卤阻燃型热收缩套管的产品尺寸符合表 3 规定。

4.6 颜色

标准颜色：黑色、红色、蓝色、黄色、绿色、白色，其它颜色如紫色、灰色、棕色等可根据客户要求定做。

4.7 使用方法

在使用过程中，为了保证热缩套管能完全收缩到位，使用强制鼓风式恒温烘箱，并将收缩温度控制在 125°C 。特别注意，当把热缩套管放入烘箱过程中，烘箱温度有一下降趋势，要达到设定温度需要一定的时间；同时，在烘箱内通过热空气循环流动使热缩套管达到最终收缩温度同样需要一定

的时间。因此，必须在烘箱实际温度达到设定温度并保持该温度 3 分钟左右，热缩套管才能完全收缩到位。

表 1 无卤阻燃型热收缩套管的性能特性

性能			测试方法	性能指标
物理性能	拉伸强度/MPa		GB/T1040	≥10.4
	断裂伸长率/%		GB/T1040	≥200
	热老化后拉伸强度/MPa		UL224; 158℃×168hr	≥7.3
	热老化后断裂伸长率/%		UL224; 158℃×168hr	≥100
	耐热冲击		UL224; 250℃×4hr	不发粘, 不龟裂
	抗冷弯曲		UL224; -30℃×1hr	不龟裂
电气性能	耐压	300V	UL224	2500V 不击穿
		600V	UL224	2500V 不击穿
	击穿强度/KV/mm		GB/T1408	≥15
	体积电阻率/Ω•cm		GB/T1410	≥1×10 ¹⁴
化学性能	铜安定性		UL224; 158℃×168hr	PASS
	抗腐蚀性		UL224; 158℃×168hr	PASS
	阻燃性		UL224	VW-1

表 2 H-CB 管（无卤阻燃型薄壁热收缩套管）的产品尺寸

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围
	内径	壁厚	内径	壁厚	米/盘	米/盘	(mm)
Φ0.6CB	0.90±0.2	0.13±0.05	≤0.40	0.20±0.10	200	400	0.4~0.7
Φ0.8CB	1.10±0.2	0.13±0.05	≤0.50	0.20±0.10	200	400	0.6~0.8
Φ1.0CB	1.40±0.2	0.13±0.05	≤0.65	0.20±0.10	200	400	0.7~1.0
Φ1.5CB	1.90±0.2	0.13±0.05	≤0.85	0.20±0.10	200	400	0.9~1.4
Φ2.0CB	2.40±0.2	0.13±0.05	≤1.00	0.22±0.10	200	400	1.1~1.8
Φ2.5CB	2.90±0.2	0.13±0.05	≤1.30	0.25±0.10	200	400	1.4~2.3
Φ3.0CB	3.40±0.2	0.13±0.05	≤1.50	0.28±0.10	200	400	1.6~2.7
Φ3.5CB	3.90±0.2	0.13±0.05	≤1.80	0.28±0.10	200	400	1.9~3.2
Φ4.0CB	4.40±0.2	0.15±0.05	≤2.00	0.30±0.10	200	400	2.1~3.6
Φ4.5CB	4.90±0.2	0.15±0.05	≤2.30	0.30±0.10	100	200	2.4~4.0
Φ5.0CB	5.50±0.2	0.15±0.05	≤2.5	0.32±0.10	100	200	2.6~4.5
Φ6.0CB	6.50±0.2	0.15±0.05	≤3.0	0.32±0.10	100	200	3.1~5.4
Φ7CB	7.50±0.3	0.15±0.05	≤3.5	0.32±0.10	200	200	3.7~6.3
Φ8CB	8.50±0.3	0.15±0.05	≤4.0	0.32±0.10	200	200	4.2~7.2
Φ9CB	9.50±0.3	0.15±0.05	≤4.5	0.35±0.10	200	200	4.7~8.0
Φ10CB	10.5±0.3	0.15±0.05	≤5.0	0.35±0.10	200	200	5.2~9.0

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Φ11CB	11.5±0.3	0.18±0.05	≤5.5	0.40±0.10	200	200	5.7~10.0
Φ12CB	12.5±0.3	0.20±0.05	≤6.0	0.40±0.10	200	200	6.2~11.0
Φ13CB	13.5±0.3	0.20±0.05	≤6.5	0.40±0.10	200	200	6.7~12.0
Φ14CB	14.5±0.3	0.20±0.05	≤7.0	0.40±0.10	200	200	7.3~13.0
Φ15CB	15.5±0.4	0.20±0.05	≤7.5	0.40±0.10	200	200	7.8~14.0
Φ16CB	16.5±0.4	0.22±0.05	≤8.0	0.40±0.10	200	200	8.3~15.8
Φ17CB	17.5±0.4	0.22±0.05	≤8.5	0.40±0.10	200	200	8.8~16.0
Φ18CB	18.5±0.4	0.22±0.05	≤9.0	0.42±0.10	200	200	9.3~17.0
Φ20CB	20.5±0.5	0.25±0.05	≤10.0	0.45±0.10	200	200	10.5~19.0
Φ22CB	22.5±0.5	0.25±0.05	≤11.0	0.45±0.10	200	200	11.5~20.5
Φ25CB	25.5±0.5	0.25±0.05	≤12.5	0.45±0.10	100	100	13.0~24.0

E203950   (W) WOER RSFR(CB) TUBE 125℃ VW-1 H (Φ9CB)

表3 H管（无卤阻燃型热收缩套管）的产品尺寸要求

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装 米/盘	新包装 米/盘	适用范围 (mm)
	内径	壁厚	最大内径	壁厚			
Φ0.6	0.9±0.2	0.18±0.05	≤0.40	0.33±0.10	200	400	0.4~0.7
Φ0.8	1.1±0.2	0.18±0.05	≤0.50	0.33±0.10	200	400	0.6~0.8
Φ1.0	1.5±0.2	0.20±0.05	≤0.65	0.36±0.10	200	400	0.75~0.9
Φ1.5	2.0±0.2	0.20±0.05	≤0.85	0.36±0.10	200	400	0.95~1.4
Φ2.0	2.5±0.2	0.20±0.05	≤1.00	0.45±0.10	200	400	1.1~1.8
Φ2.5	3.0±0.2	0.20±0.05	≤1.30	0.45±0.10	200	400	1.35~2.3
Φ3.0	3.5±0.2	0.23±0.05	≤1.50	0.45±0.10	200	400	1.6~2.7
Φ3.5	4.0±0.2	0.23±0.05	≤1.80	0.45±0.10	200	400	1.85~3.2
Φ4.0	4.5±0.2	0.25±0.05	≤2.00	0.45±0.10	200	400	2.1~3.6
Φ4.5	5.0±0.2	0.28±0.05	≤2.30	0.56±0.10	100	200	2.35~4.0
Φ5.0	5.5±0.2	0.28±0.05	≤2.50	0.56±0.10	100	200	2.6~4.5
Φ6.0	6.5±0.2	0.28±0.05	≤3.00	0.56±0.10	100	200	3.1~5.4
Φ7.0	7.5±0.3	0.30±0.05	≤3.50	0.56±0.10	100	100	3.7~6.3
Φ8.0	8.5±0.3	0.30±0.08	≤4.00	0.56±0.10	100	100	4.2~7.2
Φ9.0	9.5±0.3	0.30±0.08	≤4.50	0.56±0.10	100	100	4.7~8.0
Φ10	10.5±0.3	0.30±0.08	≤5.00	0.56±0.10	100	100	5.2~9.0
Φ11	11.5±0.3	0.30±0.08	≤5.50	0.56±0.10	100	100	5.7~10
Φ12	12.5±0.3	0.30±0.08	≤6.00	0.56±0.10	100	100	6.2~11
Φ13	13.5±0.3	0.35±0.08	≤6.50	0.56±0.10	100	100	6.7~12
Φ14	14.5±0.3	0.35±0.10	≤7.00	0.70±0.10	100	100	7.3~13
Φ15	15.5±0.4	0.35±0.10	≤7.50	0.70±0.10	100	100	7.8~14

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规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围 (mm)
Φ16	16.5±0.4	0.35±0.10	≤8.00	0.70±0.10	100	100	8.3~15
Φ17	17.5±0.4	0.35±0.10	≤8.50	0.70±0.10	100	100	8.8~16
Φ18	19.0±0.5	0.35±0.10	≤9.00	0.70±0.10	100	100	9.3~17
Φ20	22.0±0.5	0.40±0.10	≤10.00	0.83±0.10	100	100	10.4~19
Φ22	24.0±0.5	0.40±0.12	≤11.00	0.83±0.15	100	100	11.4~21
Φ25	26.0±0.5	0.45±0.12	≤12.50	0.90±0.15	50	50	12.8~24
Φ28	29.0±0.5	0.45±0.12	≤14.00	0.90±0.15	50	50	14.4~29
Φ30	31.5±1.0	0.45±0.12	≤15.00	1.00±0.15	50	50	16~29
Φ35	36.5±1.0	0.45±0.12	≤17.50	1.00±0.15	50	50	18~34
Φ40	41.5±1.0	0.50±0.12	≤20.00	1.00±0.15	50	50	21~39
Φ45	46.5±1.0	0.50±0.15	≤22.50	1.00±0.20	25	25	23.5~44
Φ50	≥50	0.50±0.15	≤25.00	1.10±0.20	25	25	26~49

E203950  (W) WOER RSFR-H TUBE 125°C VW-1 H (Φ9)

注: Φ30 及以上规格产品默认为 G 管 (环保性能符合欧盟 RoHS 2002/95/EC 标准)。如果客户需 H 无卤热缩套管, 须在订单上注明。

4.8 环境物质

本承认书承诺不使用以下物质, 四大重金属、多溴联苯 (PBB)、多溴联苯醚 (PBDE)、卤素等通过 SGS 检测。无卤阻燃型热收缩套管的环保特性列于表 4。

1. 多氯化联苯 (PCB) 类
2. 多氯化萘 (PCN) 类
3. 氯化石蜡
4. 灭蚁灵 (Mirex)
5. 其它有机氯化物
6. 有机溴化合物-多溴联苯 (PBB)
7. 有机溴化合物-多溴联苯醚 (PBDE)
8. 有机锡化合物 (三丁基锡化合物和三苯基锡化合物)
9. 石棉
10. 偶氮化合物
11. 甲醛

表 4 无卤阻燃型热收缩套管的环保特性

环境物质	含量	测试方法
氟 (F)	≤200PPM	EN 14582 Method B
氯 (Cl)	≤900ppm	EN 14582 Method B
溴 (Br)	≤900ppm	EN 14582 Method B
碘 (I)	≤200PPM	EN 14582 Method B

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镉 (Cd)	≤5ppm	IEC 62321
铅 (Pb)	≤90ppm	IEC 62321
铬 (Cr ⁶⁺)	≤5ppm	IEC 62321
汞 (Hg)	≤5ppm	IEC 62321
砷 (As)	≤50ppm	EPA 3052
钡 (Ba)	≤1000ppm	EPA 3052
锑 (Sb)	≤60ppm	EPA 3052
硒 (Se)	≤25ppm	EPA 3052

备注：氯 (Cl) + 溴 (Br) <1500ppm

5. 材质证明书

材 质 证 明 书

沃尔核材股份有限公司无卤环保型 RSFR-H 热缩套管是一种阻燃型的热收缩套管，组成材料为聚烯烃加适量阻燃剂和助剂。产品中铅 (Pb)、镉 (Cd)、汞 (Hg)、六价铬 (Cr⁶⁺)、多溴联苯 (PBB)、多溴联苯醚 (PBDE) 等环境物质含量符合日本 SONY-SS-00259 和欧盟 RoHS 2002/95/EC 指令环保要求。其主要成份如下：

原料名称			使用目的	含量	供应商	CAS. NO.
中文	英文	分子式				
聚烯烃	Polyolefin	(CH ₂ CH ₂) _n	主剂	50%	北京有机	9002-88-4
氢氧化镁	Magnesium Hydroxide	Mg(OH) ₂	阻燃剂	35%	锦昊辉	1309-42-8
磷系阻燃剂	Phosphorus	(NH ₄ PO ₃) _n	阻燃剂	10%	上海海以	7723-14-0
色母粒	Pigment	色母+填充剂	着色剂	5%	华万彩	——
油墨	Printing Ink	——	印字	——	上海捷信	——

6. 技术资料

- (1) UL/cUL 证书
- (2) ISO9001 证书
- (3) ISO14001 证书
- (4) ISO/TS16949 证书
- (5) SGS/ITS/CTI 检测报告

弘源碩電子材料有限公司

二零一二年一月十五日



YDPU2.E203950 Tubing, Extruded Insulating - Component

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Tubing, Extruded Insulating - Component

[See General Information for Tubing, Extruded Insulating - Component](#)

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD

E203950

XINWEI INDUSTRIAL PARK, WOER MANSION

NANSHAN DISTRICT, XILI

SHENZHEN, GUANGDONG 518052 CHINA

Cat. No.	Max V	Max Temp C	Col Recognized	Max Temp Rated Oil Resistance C	VW-1 Rated #
Flexible Heat-Shrinkable Polyolefin Tubing					
RSFR	600	125	All except Clear	None	\$
WKZM-x-yz	600	125	White	None	No
RSFR-H	600	125	All except Clear	None	Yes
RSFR(CB)	300	125	All except Clear	None	Yes
Not Heat-Shrinkable PTFE Tubing					
WF	600	200	Natural	None	Yes
Heat-Shrinkable Polyolefin Tubing with Meltable Liner					
SBRS	600	125	All except Clear	None	Yes
Not Heat-Shrinkable Standard Wall Silicone Tubing					
WST-600	600	150	White	None	@

x-yz - x represents tubing expanded ID, yz represents any alpha and/or numeric combination - for internal client code.

- Tubing is considered to comply with the optional VW-1 flammability requirements only if it is so marked for tubing authorized below.

@ - VW-1 rated for internal diameter sizes 6.50 - 15.00 mm only.

\$ - VW-1 rated for Black color only.

Marking: Company name or file number "E203950", catalog number, voltage rating, temperature rating in degrees C, inside diameter (before and after recovery), and date of manufacture shall be marked on tags attached to both ends of the tubing, on the shipping spool label or on the smallest unit container.

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Test Report (SVHC)

No. CANEC1822723201

Date: 09 Nov 2018

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SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.
WOER MANSION,LANJING NORTH ROAD,PINGSHAN INDUSTRIAL ZONE, LONGGANG
DISTRICT,SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PLEASE SEE REMARK

SGS Job No. : CP18-059386 - SZ

Date of Sample Received : 02 Nov 2018

Testing Period : 02 Nov 2018 - 08 Nov 2018

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety one (191) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Six (6) substances in the Public Consultation List of potential Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on Sep 4, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

No. CANEC1822723201

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-227232.001	Black tube w/whitie printing

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Consultation List of potential SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in consultation list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
 - ** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. / = Substances in the Consultation List of SVHC.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) ^Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Test Report (SVHC)

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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
/	192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
/	193	Benzo[k]fluoranthene	207-08-9	0.050
/	194	Fluoranthene	206-44-0	0.050
/	195	Phenanthrene	85-01-8	0.050
/	196	Pyrene	129-00-0	0.050
/	197	Undecafluorohexanoic acid and its ammonium salt	307-24-4, 21615-47-4	0.050



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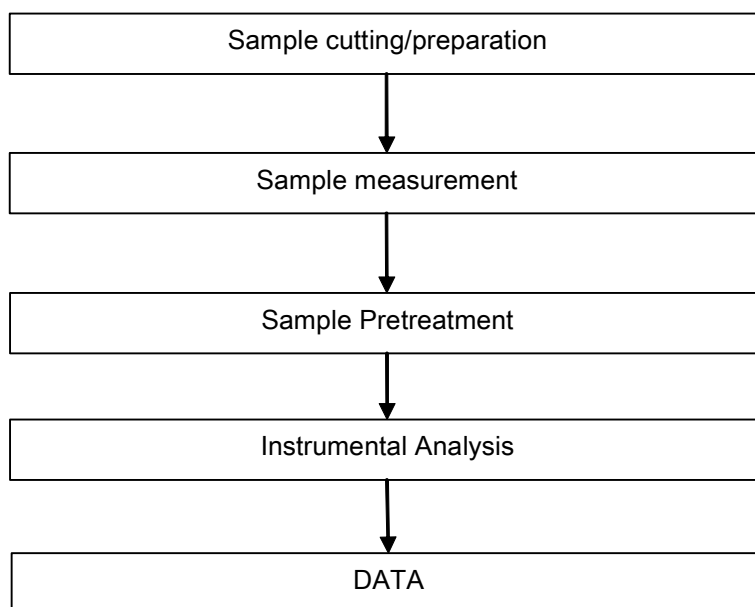
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ATTACHMENTS

SVHC Testing Flow Chart




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REMARK:

RSFR-H HEAT SHRINKABLE TUBINGS (E203950 
WOER RSFR-H TUBE 125°C VW-1 H)



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Test Report



Report No. A2190096126101003R1

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Applicant SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

Address WOER INDUSTRIAL PARK, LANJING NORTH ROAD, LONGTIAN STREET, PINGSHAN DISTRICT, SHENZHEN, GUANGDONG.

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name PE masterbatch- Black
Sample Received Date Apr. 26, 2019
Testing Period Apr. 26, 2019 to Apr. 29, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Crit Qin

Approved by

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

May 17, 2019

No. R179757340

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190096126101003R1

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	36 mg/kg	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

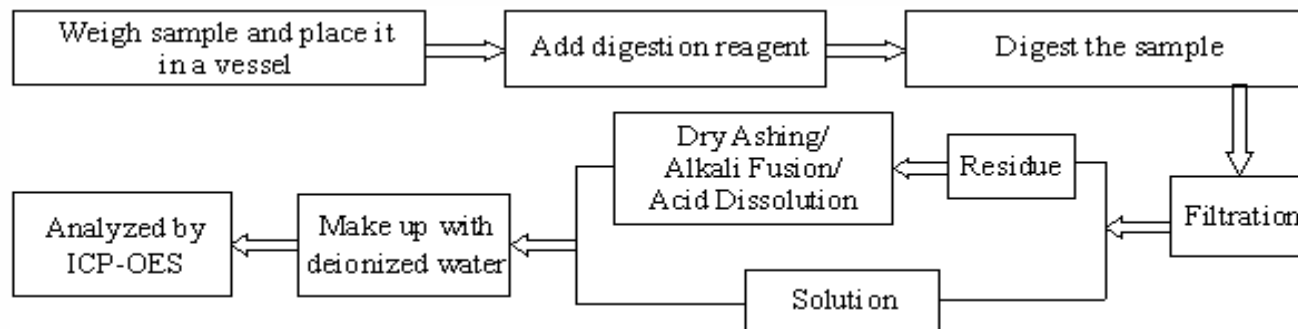
Test Report

Report No. A2190096126101003R1

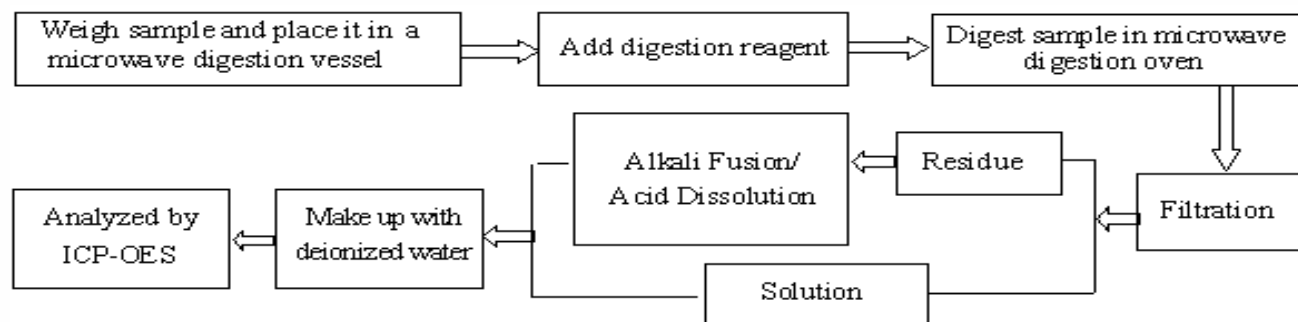
Page 5 of 7

Test Process

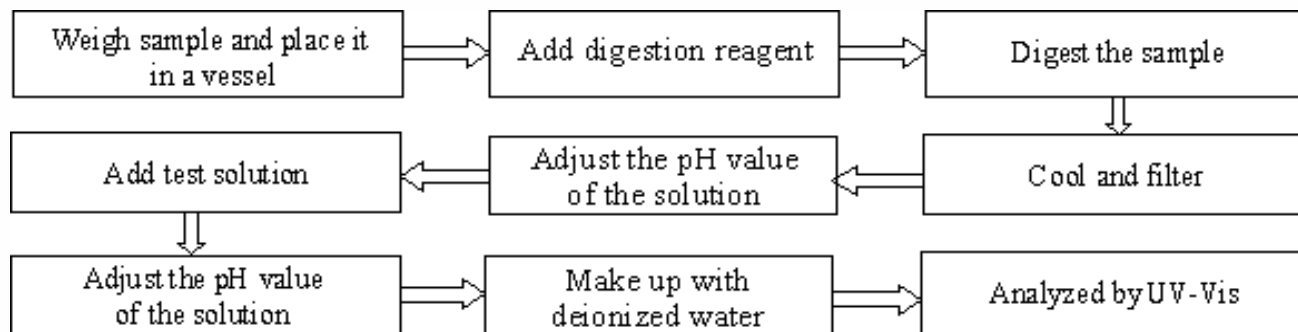
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



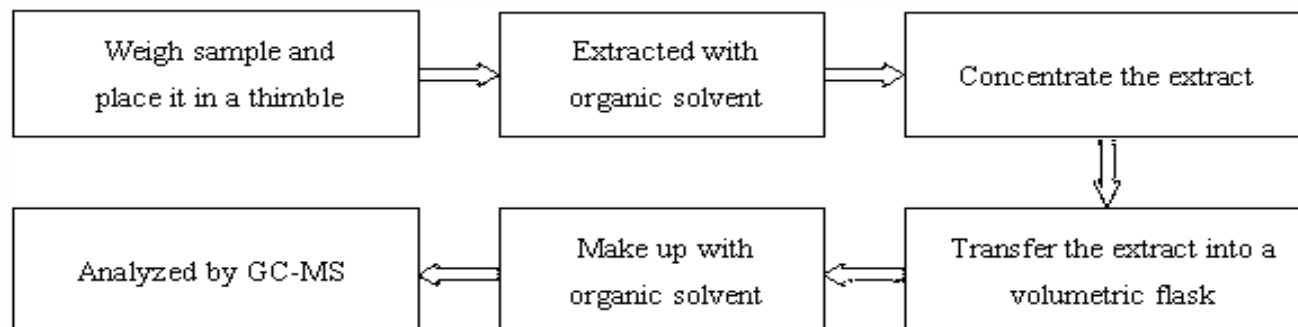
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

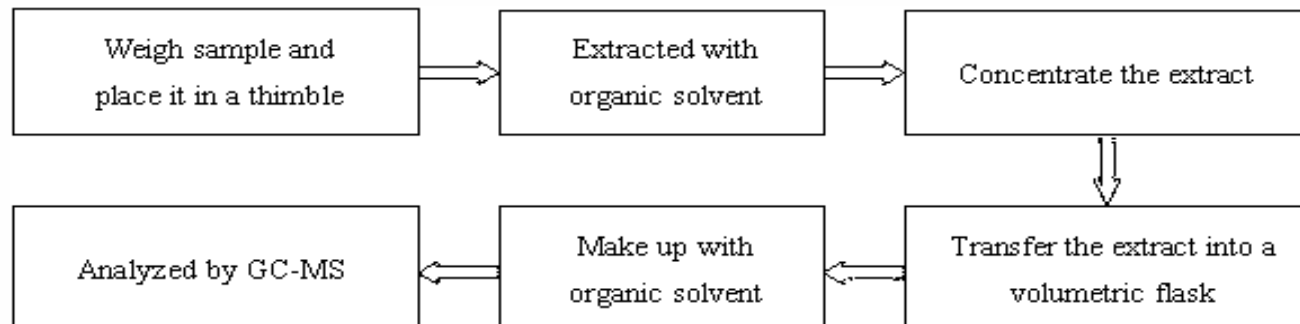


Test Report

Report No. A2190096126101003R1

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



Test Report

Report No. A2190096126101003R1

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : HALOGEN FREE WHITE INK

SGS Job No. : CP19-032627 - SZ

Model No. : I-TPE-01

Client Ref. Info. : I-PE-01; I-TPE-01;I-TPR-01;I-PE-01; I-PPE-01;I-PP-01;I-TPU-01;I-RU-01

Date of Sample Received : 19 Jun 2019

Testing Period : 19 Jun 2019 - 26 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-117806.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Remark: The result(s) shown is/are of the total weight of dried sample.



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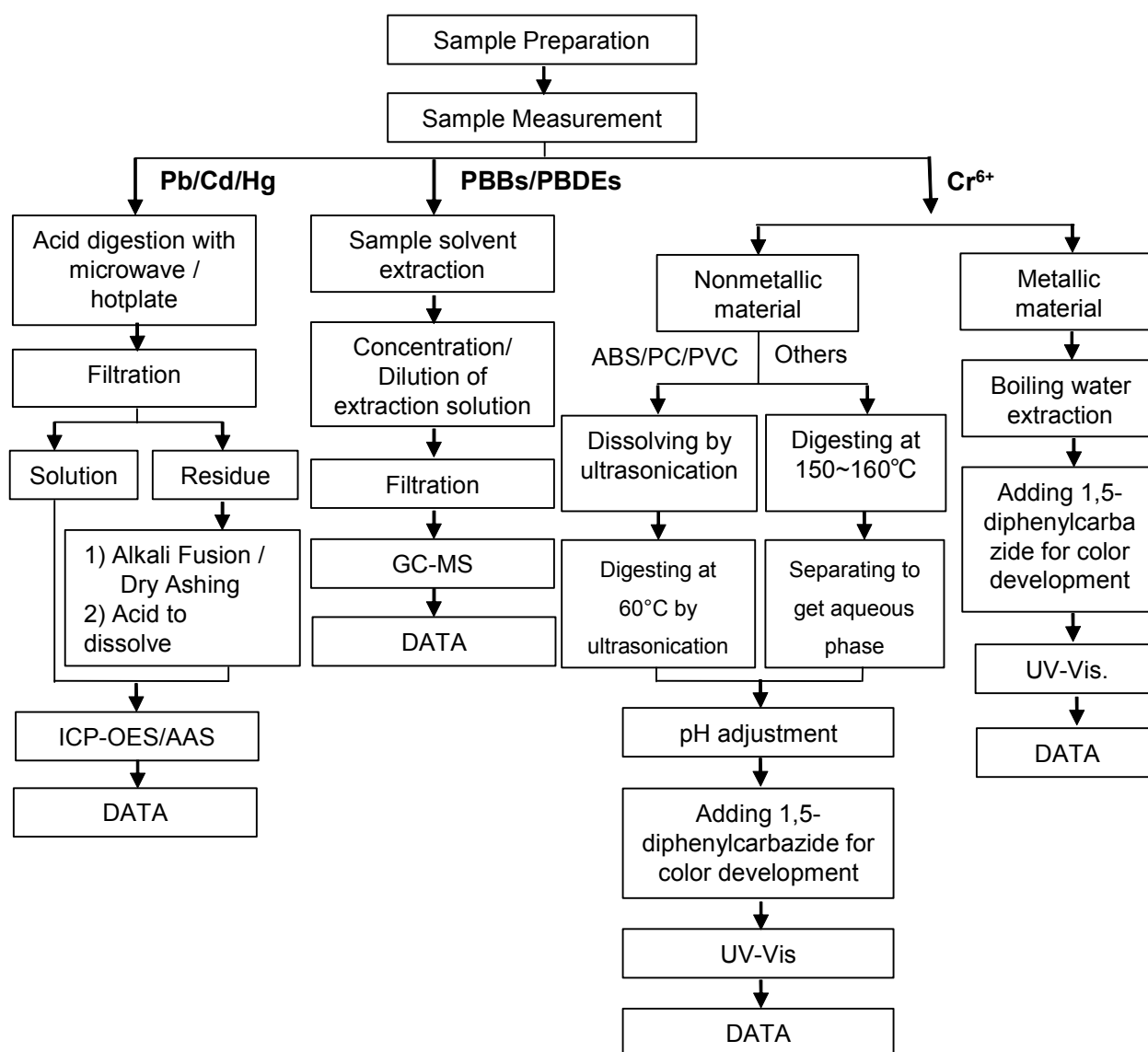
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ATTACHMENTS

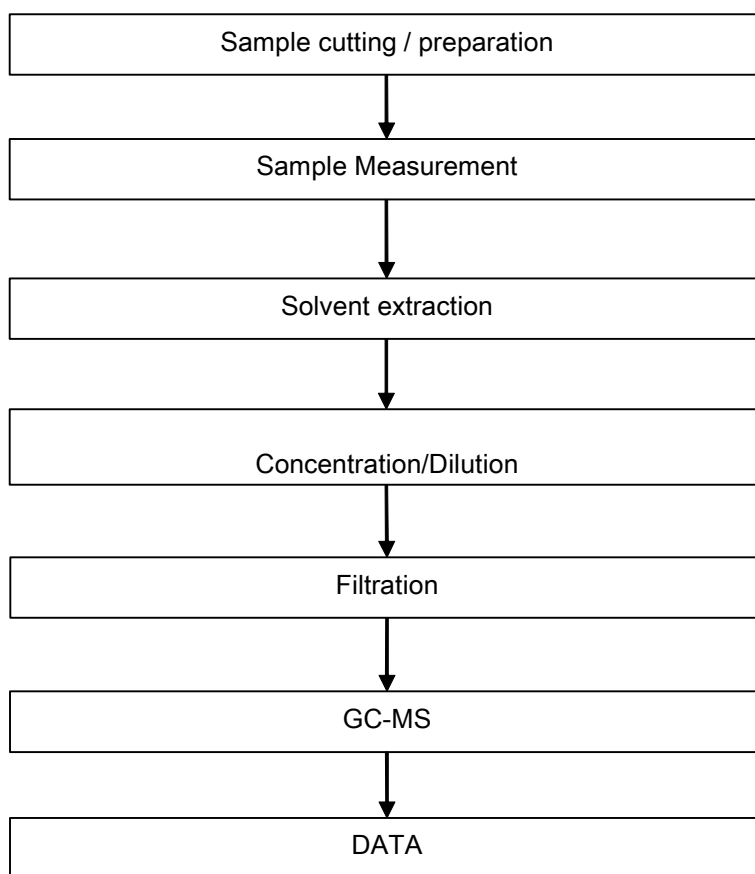
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Sample photo:



SGS authenticate the photo on original report only

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3.5Ø PHONE JACK ACCESSORIES

	Matching Plug	Gauge Plug
STEREO (2CONDUCTORS)		
STEREO (3CONDUCTORS)		

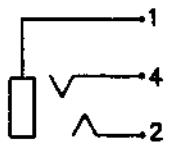
Fig. I	Fig. II	Fig. III

Order Code No.	Fig.	Shape	Description			Dimension		
			Thread	Material	Finish	Dia. A	Dim. B	Dim. C
1	Fig. I	Round	M6 × P0.5	Brass	Nickel	Ø8.0	1.5	0.9
2	Fig. II	Hexagonal	M6 × P0.5	Brass	Nickel	8.0	1.5	-
3	Fig. III	Round	M8 × P0.5	Brass	Nickel	Ø10.0	2.0	1.2



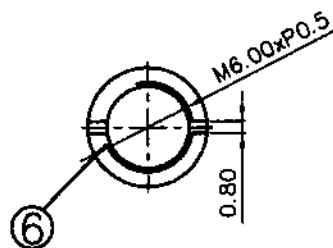
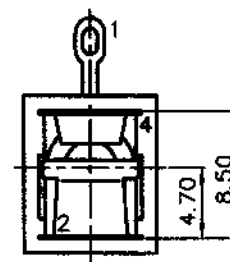
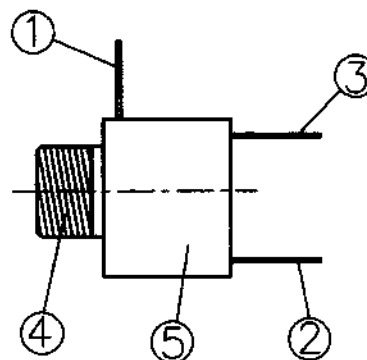
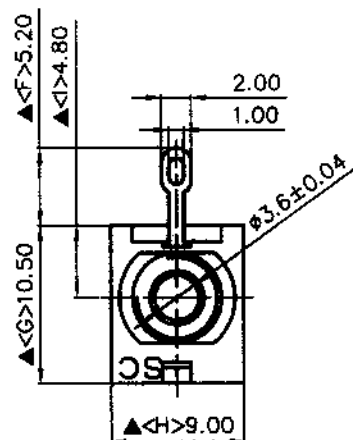
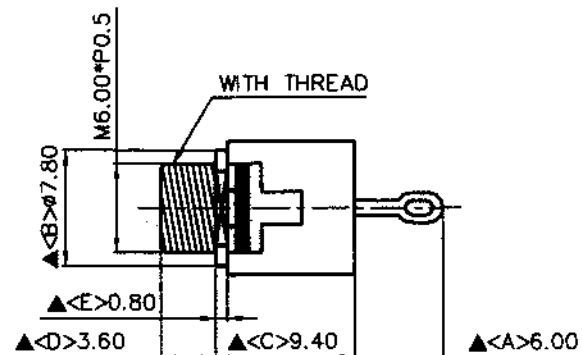
S. C. PRECISION INDUSTRIAL CO., LTD.

SCHEMATIC

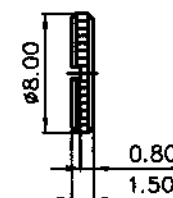


MODEL NO

X



NUT



6	NUT	1.5T Brass	1	Nickel Plated
5	Housing	POM	1	Black Color
4	Barrel	Brass	1	Nickel Plated
3	Ring Spring	0.2T Phosphor Bronze	1	Silver Plated
2	Tip Spring	0.2T Phosphor Bronze	1	Silver Plated
1	Earth Terminal	0.3T Brass	1	Silver Plated
NO.	Description	Material	Q'TY	Finish



S.C. PRECISION INDUSTRIAL CO., LTD.

DATE DWN CHKD APVD MANAGER

10.17.2011

陳麗敏

2011.10.18

2011.10.18

2011.10.18

2011.10.18

PART NAME : 3.5 ϕ PHONE JACK PART NUMBER: SCJ311M1NXS1B00G

VERSION: 3.0

TOLERANCE : $\pm 0.3\text{mm}$ UNLESS OTHERWISE SPECIFIED

UNIT: mm



SCALE: 1/1

SPECIFICATIONS:

Contact Resistance : $30\text{m}\Omega$ max
 Insulation Resistance : $100\text{M}\Omega$ min. at DC 500V
 Dielectric Withstanding Voltage: AC 500V for one minute
 Remark: Δ : The Most Important Dimension

RoHS
Compliant

DURACON POM

M90-44

产品描述

制造商	宝理塑料(中国)有限公司
材料标示	>POM Copolymer<
颜色	本色
UL档案号	E45034
材料形状	颗粒状
加工方式	注射成型

物理性能	条件	测试标准	数据	单位
比重		ISO 1183	1.41	g/cm ³
吸水率	(23°C, 24 hr)	ISO 62	0.5	%
机械性能	条件	测试标准	数据	单位
洛氏硬度		ISO 2039-2	80	M(Scale)
拉伸强度	23°C	ISO 527-2	62	MPa
断裂伸长率	23°C	ISO 527-2	35	%
弯曲强度	23°C	ISO 178	87	MPa
弯曲模量	23°C	ISO 178	2500	MPa
简支梁缺口冲击强度	23°C	ISO 179/1eA	6	kJ/m ²
热性能	条件	测试标准	数据	单位
热变形温度	1.80MPa 未退火	ISO 75-2/Af	95	°C
线膨胀系数	MD	ISO 11359-2	1.2E-4	cm/cm/°C
线膨胀系数	TD	ISO 11359-2	1.2E-4	cm/cm/°C
电气性能	条件	测试标准	数据	单位
体积电阻		IEC 60093	1.0E+15	Ω.cm
表面电阻		IEC 60093	1.0E+16	Ω.cm
绝缘强度		IEC 60243-1	29	KV/mm
绝缘强度	3m m	IEC 60243-1	19	KV/mm
阻燃性	条件	测试标准	数据	单位
防火等级	All	UL-94	0.75mm	HB
防火等级	All	UL-94	1.50mm	HB
防火等级	All	UL-94	3.00mm	HB
注塑成型条件	条件	测试标准	数据	单位
干燥温度			60-80	°C
干燥时间			2.0-6.0	Hr
建议水份含量			<=0.20	%
料筒后部温度			170-190	°C
料筒中部温度			180-200	°C
料筒前部温度			190-210	°C
喷嘴温度			200-220	°C
模具温度			40-80	°C

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Test Report

No. CANEC1900947201

Date: 23 Jan 2019

Page 1 of 6

DONGGUAN CITY TIANCHOU PLASTIC TECHNOLOGY CO.,LTD.
NO.63,YINLING ROAD,TIAN TOU JIAO,QIAOTOU TOWN,DONGGUAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : POM

SGS Job No. : CP19-001892- GZ
Model No. : M90-44
Manufacturer : POLYPLASTICS (JAPAN)CO LTD
Date of Sample Received : 17 Jan 2019
Testing Period : 17 Jan 2019 - 23 Jan 2019
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie
Approved Signatory



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Test Report

No. CANEC1900947201

Date: 23 Jan 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-009472.001	White plastic grains

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Lead (Pb)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1900947201

Date: 23 Jan 2019

Page 3 of 6

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

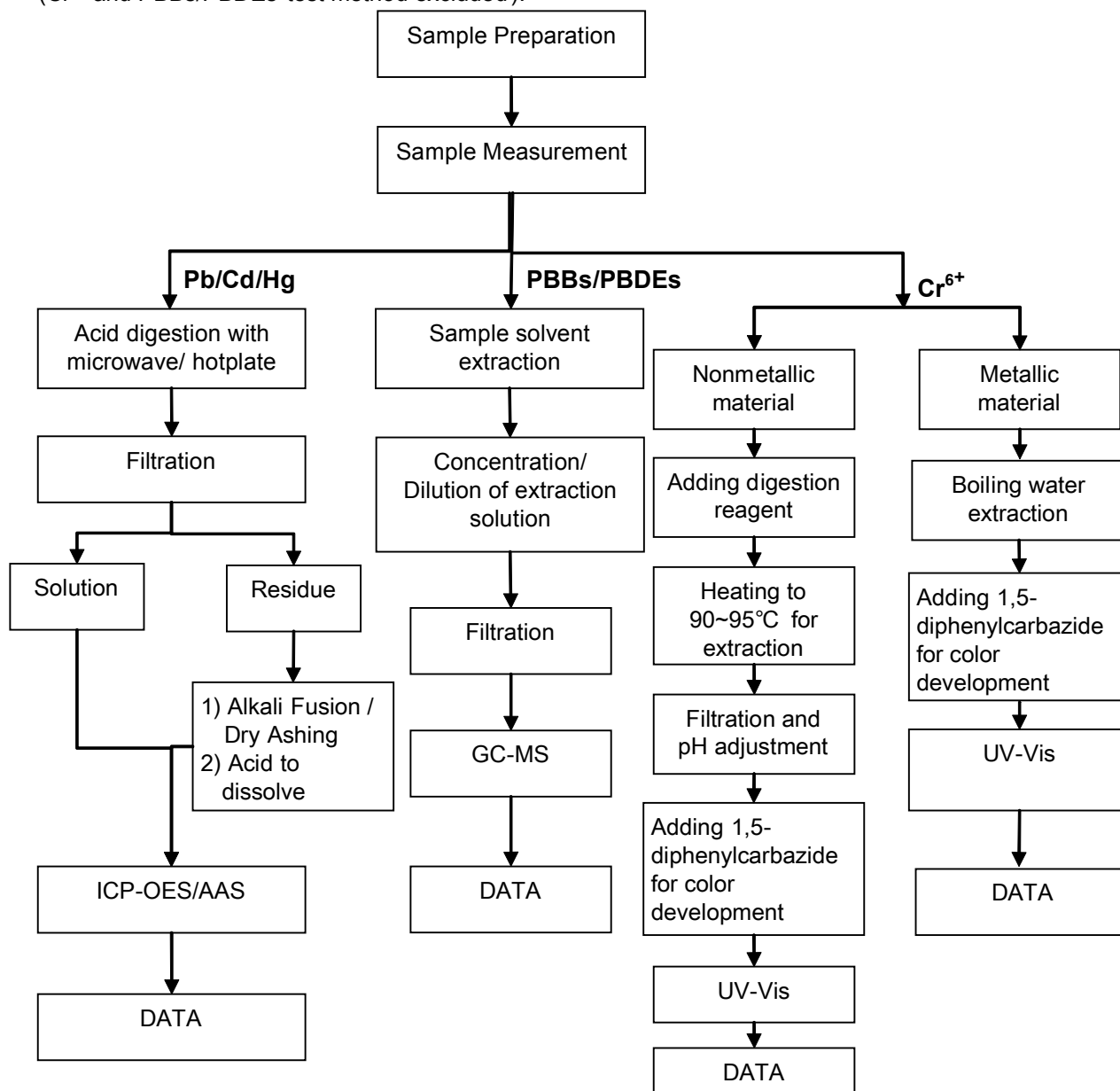
- (1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2)On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
- (3)The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (4)The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (5)The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.



ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

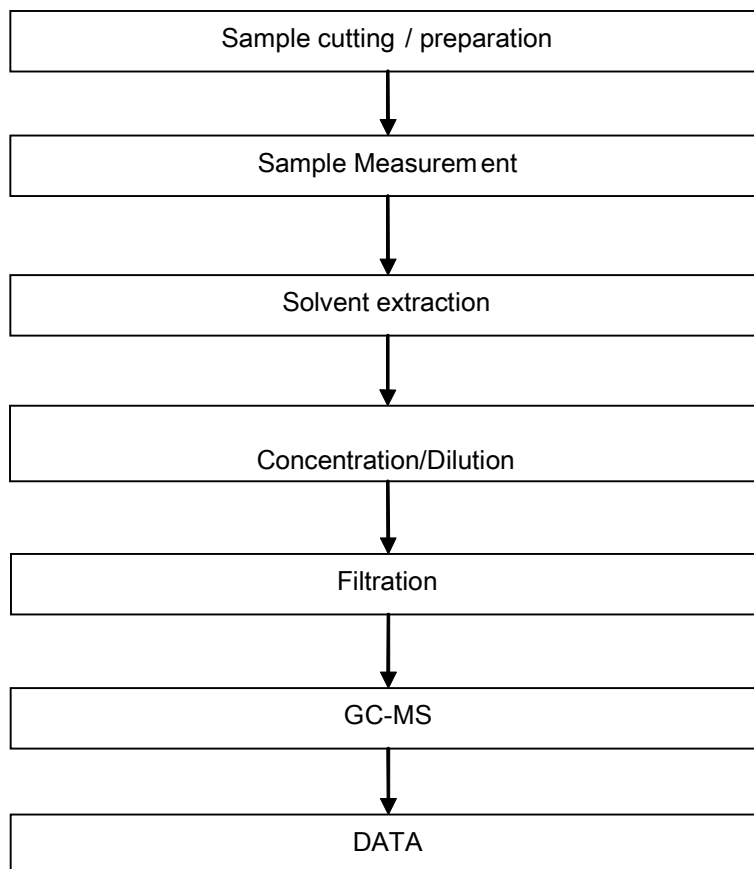
- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Cutey Yu



Test Report

No. CANEC1900947201

Date: 23 Jan 2019

Page 6 of 6

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



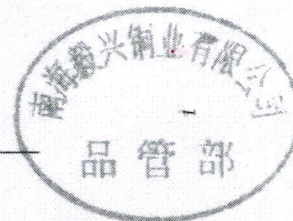
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南海毅兴铜业有限公司化学成份测试报告及物理性能测试报告



客户名称		订单号(PO.NO)		出货日期	2019年2月25日
国际标准	JIS H3250-2006	试材品名	C3604	试材规格	φ 10
化学试验	CHEMICAL TESTING				
仪器名称	瑞士ARLMA Cu直读光谱仪				

元素名称	铜(Cu)	锌(Zn)	铅(Pb)	铁(Fe)	锡(Sn)	铝(Al)	锰(Mn)	硅(Si)	锑(Sb)	镉(Cd)	铋(Bi)	磷(P)	镍(Ni)
试片含量	58.24	37.7984	3.1727	0.3014	0.3074	0.0944	0.0053	0.0054	0.0083	0.0039	0.0069	0.0026	0.0537

机械试验	MECHANICAL TESTING					
仪器名称	WD-50B电子式万能试验机					
物理性质	抗拉强度		延伸率			硬度
实际数值	423	[Mpa]	8	$\delta_{10} \geq [\%]$		126 HV1.0
单位主管	蒋国飞			分析员		胡艳





测试报告

No. CANEC1907849510

日期: 2019年05月14日 第1页,共4页

佛山市南海毅兴铜业有限公司

中国广东省佛山市南海区狮山镇南海经济开发区北园北园中路18号

以下测试之样品是由申请者所提供及确认: 黄铜棒

SGS工作编号: CP19-021380 - GZ

型号: C3604

样品接收日期: 2019年05月05日

测试周期: 2019年05月05日 - 2019年05月14日

测试要求: 根据客户要求测试

测试方法: 请参见下一页

测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价格的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司广州分公司

授权签名

史丽兰

Violet, Shi 史丽兰

批准签署人



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测试报告

No. CANEC1907849510

日期: 2019年05月14日 第2页,共4页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	CAN19-078495.005	黄铜色金属棒

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, 采用 ICP-OES 和 UV-Vis 进行分析。

测试项目	限值	单位	MDL	005
镉 (Cd)	100	mg/kg	2	7
铅 (Pb)	1,000	mg/kg	2	28029▲
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))▼	-	µg/cm²	0.10	ND

备注:

- (1) 最大允许极限值引用自RoHS指令(EU) 2015/863。
IEC 62321系列等同于 EN 62321系列
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼=a. 当六价铬的浓度高于0.13 µg/cm²时, 样品为阳性, 即含有六价铬;
b. 当六价铬的浓度为ND(低于0.10 µg/cm²)时, 样品为阴性, 即未检测到六价铬;
c. 当六价铬的浓度介于0.10 µg/cm²与0.13 µg/cm²之间时, 无法直接判定是否检测到六价铬, 因不同个体的样品表面差异可能会影响测定结果;
由于未获知样品的存储条件和生产日期, 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

备注▲: 根据客户提供的声明, 样品中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免, 相应豁免条文(请以英文原文为准) [ANNEX III 6(c)]: 铜合金中的铅含量不得超过4%。

检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。



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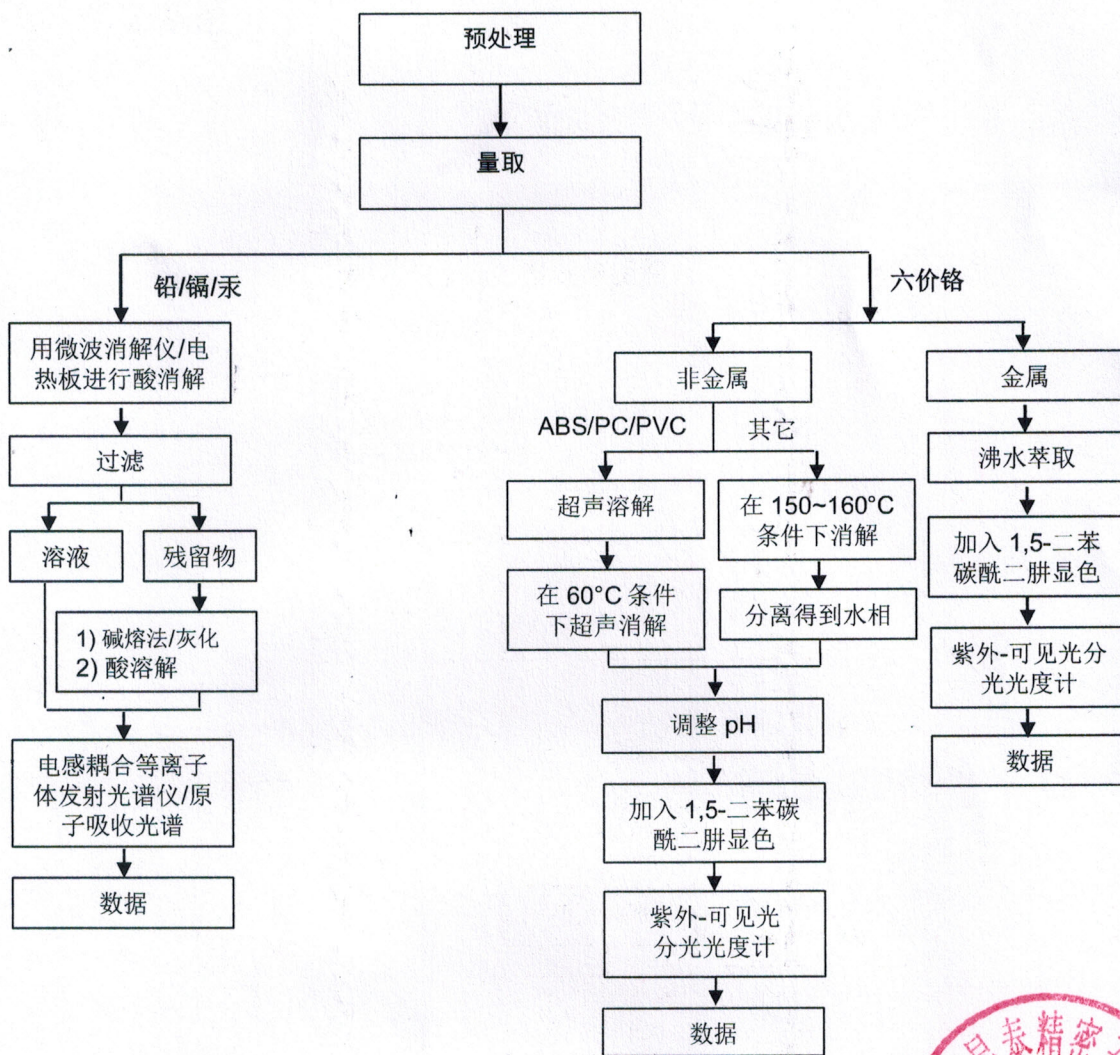
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附件

Pb/Cd/Hg/Cr⁶⁺ 测试流程图

1) 样品按照下述流程被完全消解（六价铬测试除外）。



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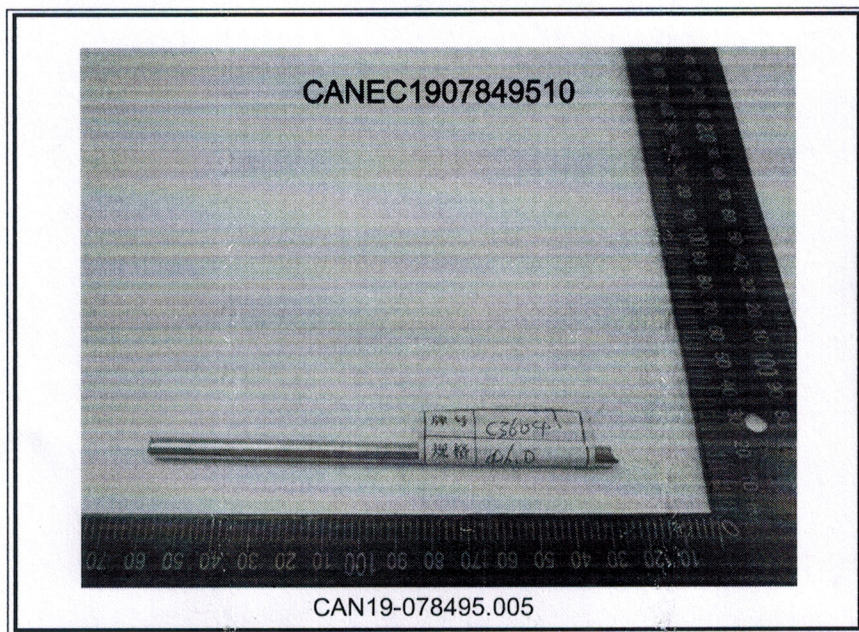
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测试报告

No. CANEC1907849510

日期: 2019年05月14日 第4页,共4页

样品照片:



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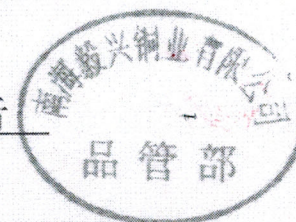
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南海毅兴铜业有限公司化学成份测试报告及物理性能测试报告



客户名称		订单号(PO.NO)		出货日期	2019年2月25日
国际标准	B16M-2005	试材品名	C3602	试材规格	Φ6
化学试验	CHEMICAL TESTING				
仪器名称	瑞士ARLMA Cu直读光谱仪				

元素名称	铜(Cu)	锌(Zn)	铅(Pb)	铁(Fe)	锡(Sn)	铝(Al)	锰(Mn)	硅(Si)	锑(Sb)	镉(Cd)	铋(Bi)	磷(P)	镍(Ni)
试片含量	60.58	36.5587	2.0854	0.3245	0.2904	0.0672	0.0043	0.0032	0.0055	0.0030	0.0063	0.0039	0.0676

机械试验	MECHANICAL TESTING									
仪器名称	WD-50B电子式万能试验机									
物理性质	抗拉强度				延伸率				硬度	
实际数值	420		[Mpa]		9		$\delta_{10} \geq [\%]$		125	HV1.0
单位主管	蒋国飞				分析员				胡艳	





测试报告

No. CANEC1907849506

日期: 2019年05月14日 第2页,共4页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	CAN19-078495.003	黄铜色金属棒

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, 采用 ICP-OES 和 UV-Vis 进行分析.

测试项目	限值	单位	MDL	003
镉 (Cd)	100	mg/kg	2	7
铅 (Pb)	1,000	mg/kg	2	20869▲
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))▼	-	µg/cm²	0.10	ND

备注:

- (1) 最大允许限值引用自RoHS指令(EU) 2015/863。
IEC 62321系列等同于 EN 62321系列
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼=a. 当六价铬的浓度高于0.13 µg/cm²时, 样品为阳性, 即含有六价铬;
b. 当六价铬的浓度为ND(低于0.10 µg/cm²)时, 样品为阴性, 即未检测到六价铬;
c. 当六价铬的浓度介于0.10 µg/cm²与0.13 µg/cm²之间时, 无法直接判定是否检测到六价铬, 因不同个体的样品表面差异可能会影响测定结果;
由于未获知样品的存储条件和生产日期, 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

备注▲: 根据客户提供的声明, 样品中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免, 相应豁免条文(请以英文原文为准) [ANNEX III 6(c)]: 铜合金中的铅含量不得超过4%。

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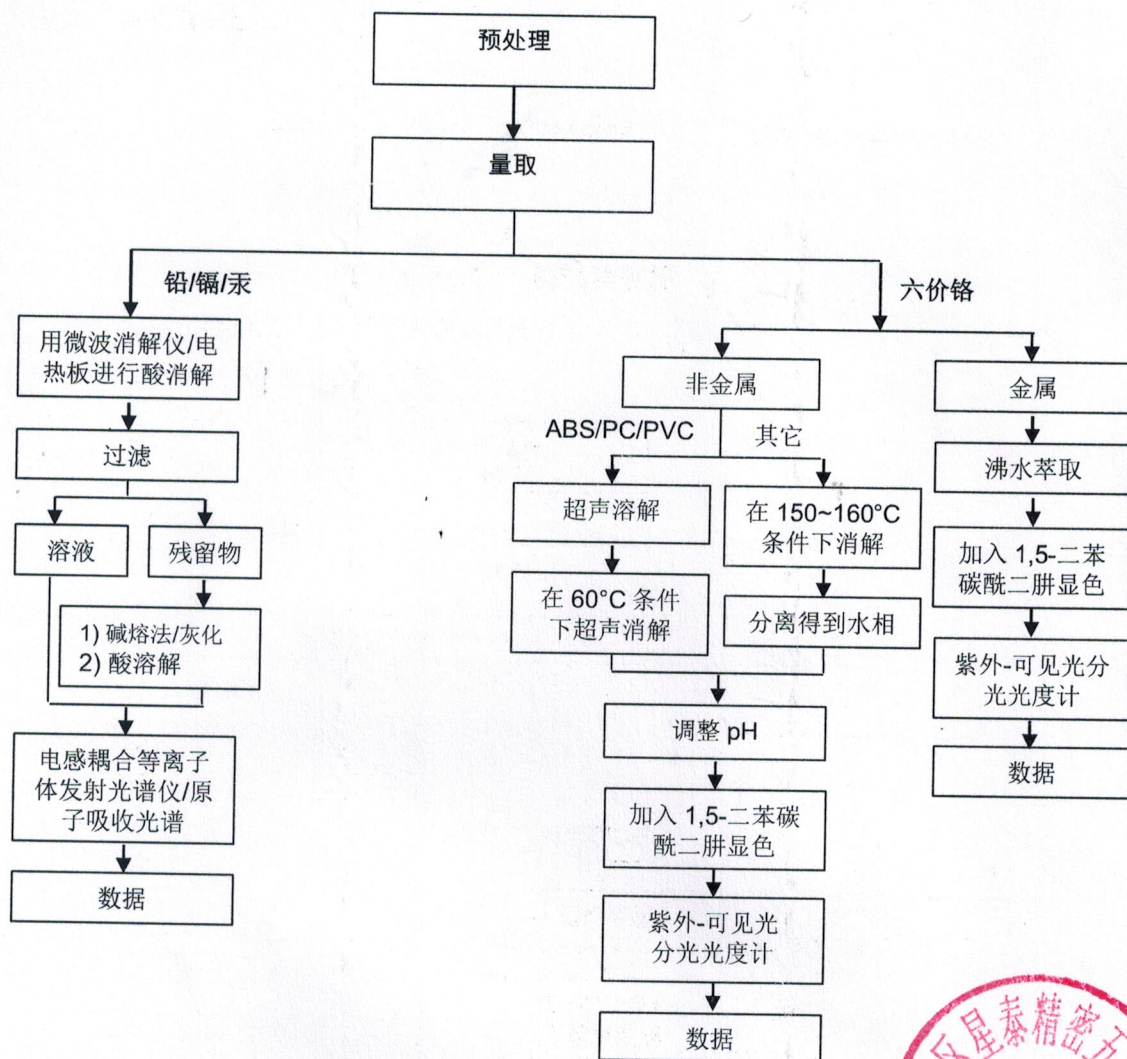
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附件

Pb/Cd/Hg/Cr⁶⁺ 测试流程图

1) 样品按照下述流程被完全消解 (六价铬测试除外)。



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Guangzhou Branch Testing Center Chemical Laboratory

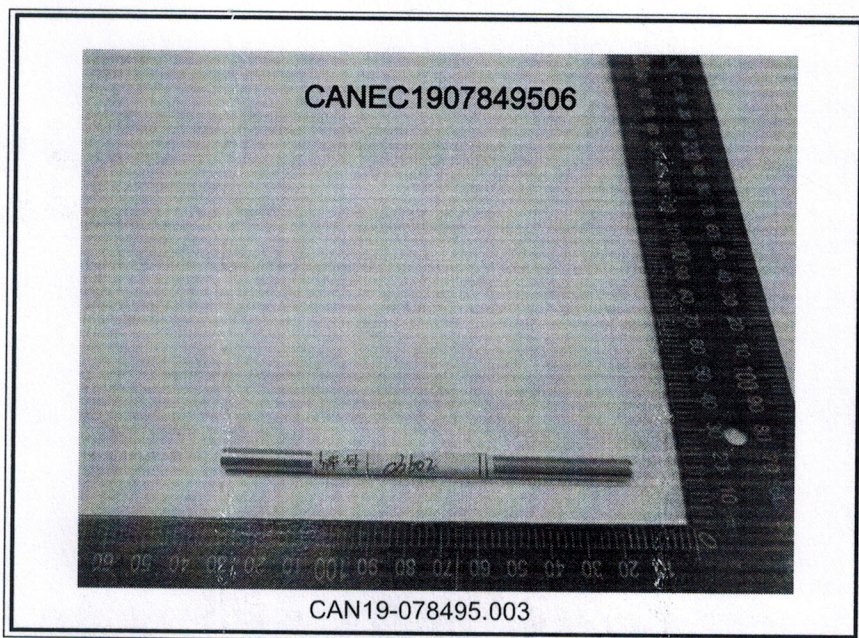
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测试报告

No. CANEC1907849506

日期: 2019年05月14日 第4页,共4页

样品照片:



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Guangzhou Branch Testing Center Chemical Laboratory

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SHENZHEN MINGSCHIN INDUSTRIAL MATERIAL CO., LTD.

深圳市明鑫工业材料有限公司

产品检测单

客户：旭全

产品名称	磷铜	产品规格	0.20mm
产品牌号	C5210 鑫科料	产品状态	SH
厚度公差	+0/-0.01	宽度公差	+0,-0.1

化学成份 (%)

执行标准：JIS H 3130:2012

化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量
铜 Cu	7440-50-8	余量	余量	锌 Zn	7440-66-6	0.15	≤0.2	铁 Fe	7439-89-6	0.017	≤0.1
锡 Sn	7440-31-5	7.46	7.0-9.0	磷 P	12185-10-3	0.15	0.03-0.35	铅 Pb	7439-92-1	0.002	≤0.02
锑 Sb	7440-36-0	-----	-----	硅 Si	7440-21-3	-----	-----	铋 Bi	7440-69-9	-----	-----
镍 Ni	7440-02-0	-----	-----	锰 Mn	7439-96-5	-----	-----	铝 Al	7429-90-5	-----	-----
银 Ag	7440-22-4	-----	-----	砷 As	13826-64-7	-----	-----	镉 Cd	7440-43-9	-----	-----
硫 S	7704-34-9	-----	-----	钴 Co	7440-48-4	-----	-----	铍 Be	7440-41-7	-----	-----
镁 Mg	7439-95-4	-----	-----	铬 Cr	7440-47-3	-----	-----	Cu+Sn+P	-----	99.77	≥99.7

物理性能：

测试项目	实测值	标准值	测试项目	实测值	标准值
抗拉强度 N/mm2	757	735-835	延伸率 (%)	/	
杯突值	—	—	维氏硬度 HV	239	* 230-250

生产日期：20180814

检验员：奉小勇

确认：靳云涛



Test Report

No. CANEC1822017908

Date: 31 Oct 2018

Page 1 of 6

SHENZHEN MINGSCHIN INDUSTRIAL MATERIAL CO.,LTD

MINGSCHIN INDUSTRIAL PARK,NANHUAN ROAD,HEYI COMMUNITY,SHAJING TOWN,BAOAN DISTRICT,SHENZHEN

The following sample(s) was/were submitted and identified on behalf of the clients as : C5210

SGS Job No. : CP18-057797 - SZ

Date of Sample Received : 25 Oct 2018

Testing Period : 25 Oct 2018 - 31 Oct 2018

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Zmguan

Zm guan
Approved Signatory



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Test Report

No. CANEC1822017908

Date: 31 Oct 2018

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-220179.008	Copper-colored metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	008
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	13
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼ = a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis



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Test Report

No. CANEC1822017908

Date: 31 Oct 2018

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Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	008
Beryllium (Be)	mg/kg	5	ND



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Suzhou Branch, Suzhou Industrial Park

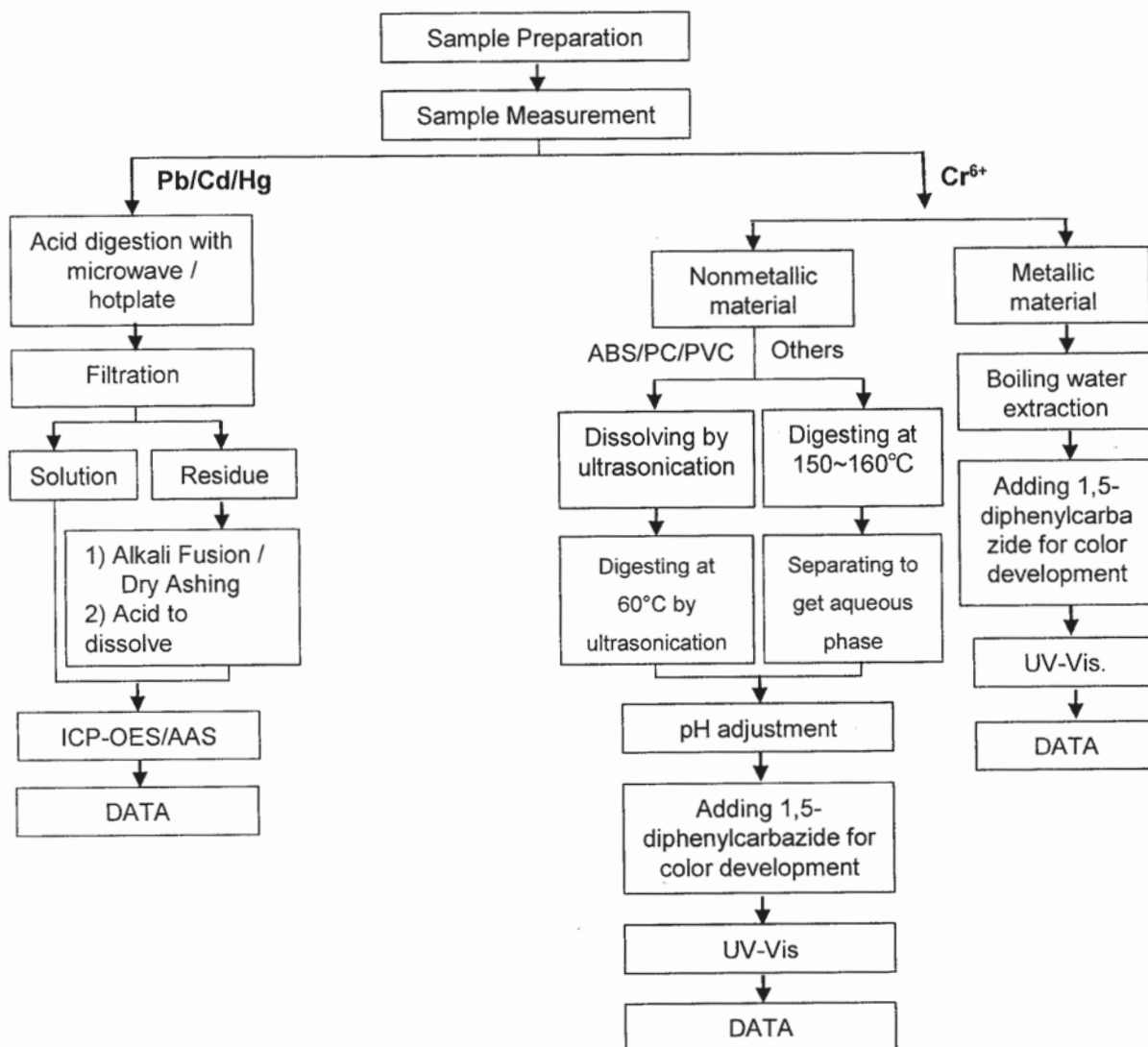
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Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



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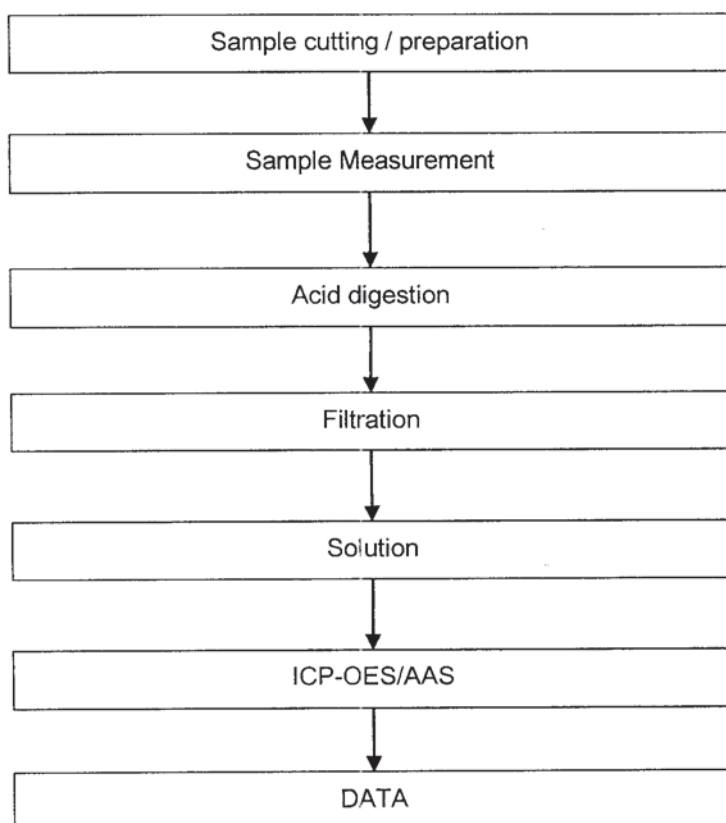
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Elementary Testing Flow Chart



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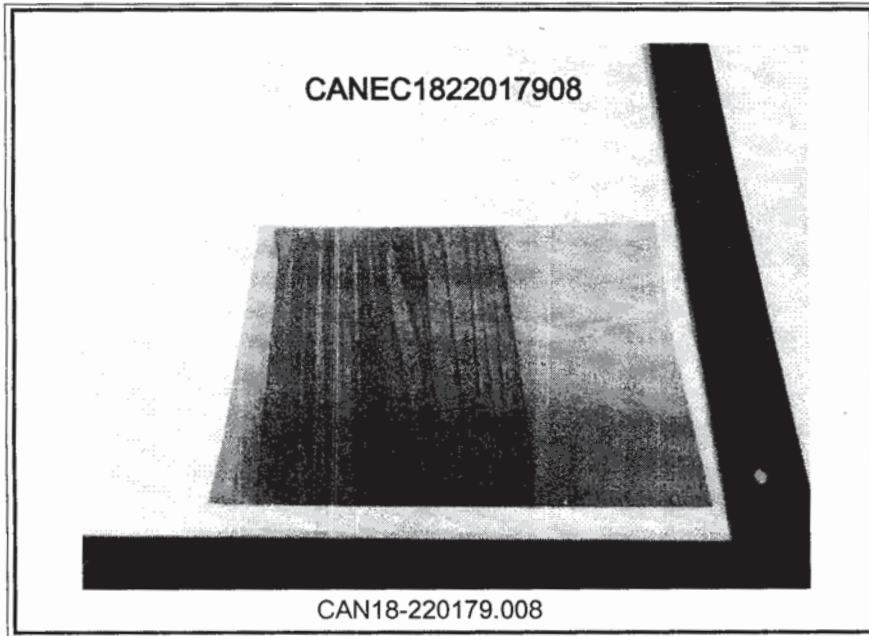
Test Report

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Sample photo:



SGS authenticate the photo on original report only

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SHENZHEN MINGSCHIN INDUSTRIAL MATERIAL CO., LTD.

深圳市明鑫工业材料有限公司

产品检测单

客户：旭全

产品名称	黄铜	产品规格	0.30mm
产品牌号	C2680 兴业料	产品状态	H
厚度公差	+0/-0.015	宽度公差	+0/-0.1

化学成份 (%)

执行标准：JIS H 3100:2012

化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量
铜 Cu	7440-50-8	65.37	64.0-68.0	锌 Zn	7440-66-6	余量	余量	铁 Fe	7439-89-6	0.007	≤0.05
锡 Sn	7440-31-5	-----	-----	磷 P	12185-10-3	-----	-----	铅 Pb	7439-92-p1	0.002	≤0.05
锑 Sb	7440-36-0	-----	-----	硅 Si	7440-21-3	-----	-----	铋 Bi	7440-69-9	-----	-----
镍 Ni	7440-02-0	-----	-----	锰 Mn	7439-96-5	-----	-----	铝 Al	7429-90-5	-----	-----
银 Ag	7440-22-4	-----	-----	砷 As	13826-64-7	-----	-----	镉 Cd	7440-43-9	-----	-----
硫 S	7704-34-9	-----	-----	钴 Co	7440-48-4	-----	-----	碳 C	7440-44-0	-----	-----
镁 Mg	7439-95-4	-----	-----	铬 Cr	7440-47-3	-----	-----	杂质总和	-----	-----	-----

物理性能：

测试项目	实测值	标准值	测试项目	实测值	标准值
抗拉强度 N/mm2	463	410-540	延伸率 (%)	/	/
杯突值	——	——	维氏硬度 HV	145	140-160

生产日期：20180814

检验员：奉小勇

确认：靳云涛



Test Report

No. CANEC1905747203

Date: 12 Apr 2019

Page 1 of 7

SHENZHEN MINGSCHIN INDUSTRIAL MATERIAL CO.,LTD

NO.4,FURONG THIRD ROAD,XINQIAO FURONG INDUSTRIAL ZONE,SHAJING TOWN,BAO'AN DISTRICT,SHENZHEN

The following sample(s) was/were submitted and identified on behalf of the clients as : C2680(H65)

SGS Job No. : CP19-016777 - SZ

Date of Sample Received : 08 Apr 2019

Testing Period : 08 Apr 2019 - 12 Apr 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Test Report

No. CANEC1905747203

Date: 12 Apr 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-057472.002	Brass metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	3
Lead (Pb)	1,000	mg/kg	2	77
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1905747203

Date: 12 Apr 2019

Page 3 of 7

Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▽ = a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	002
Beryllium (Be)	mg/kg	5	ND



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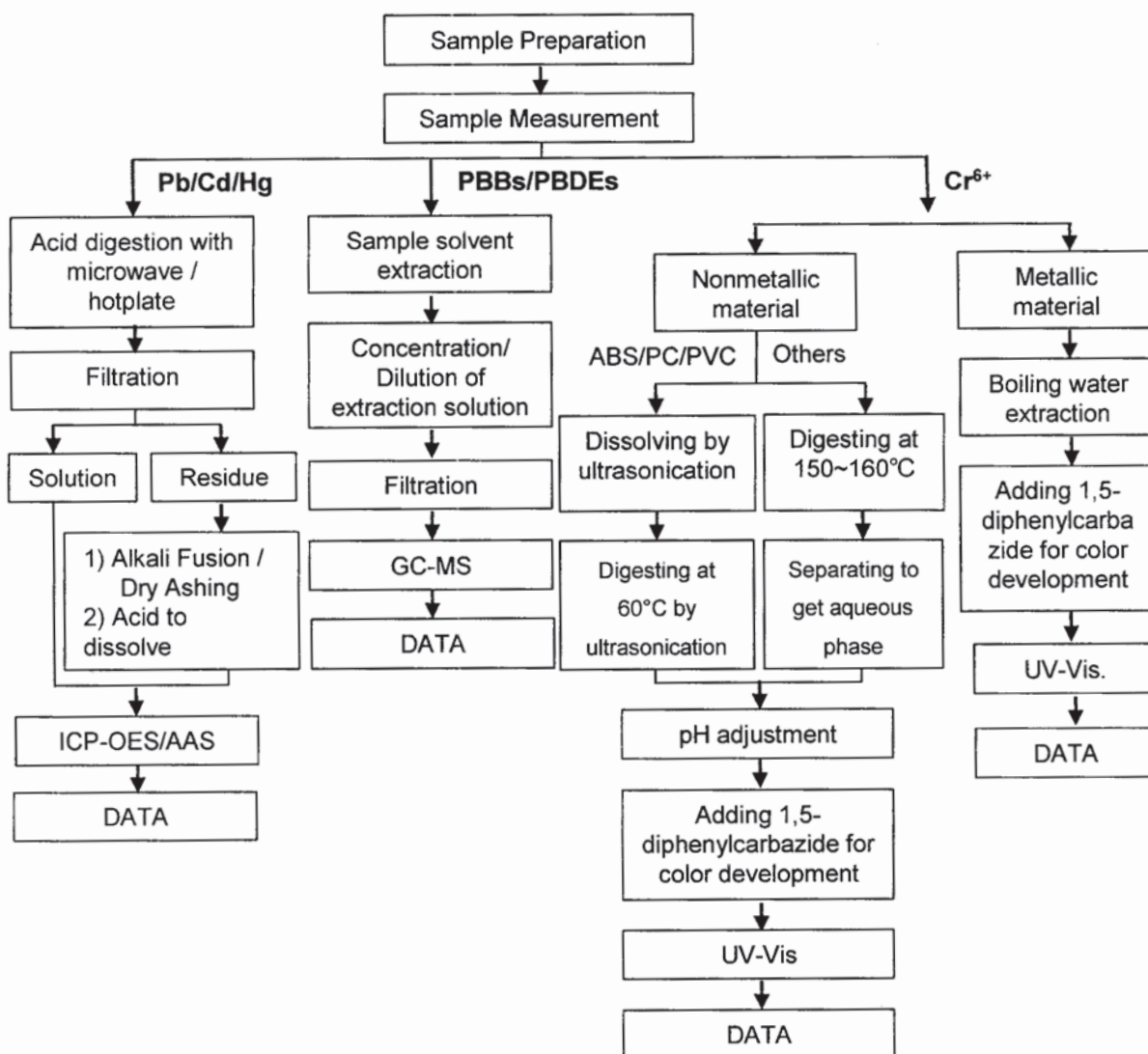
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



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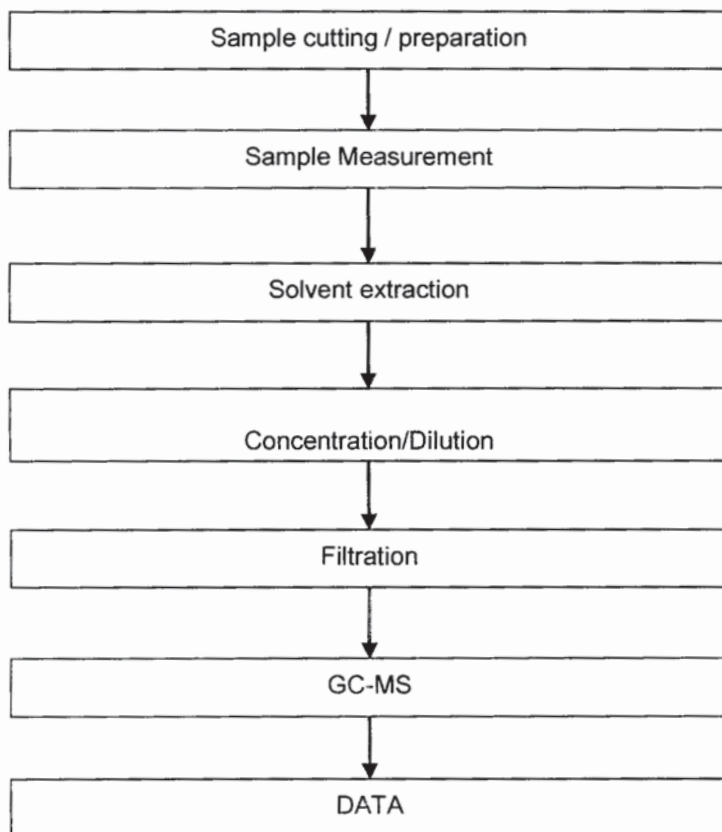
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Phthalates Testing Flow Chart



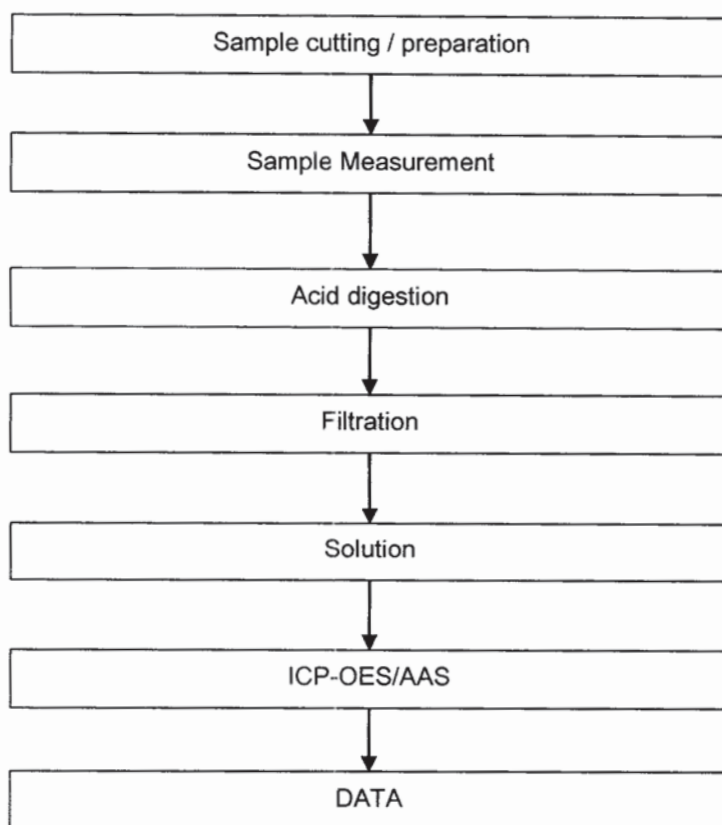
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Elementary Testing Flow Chart



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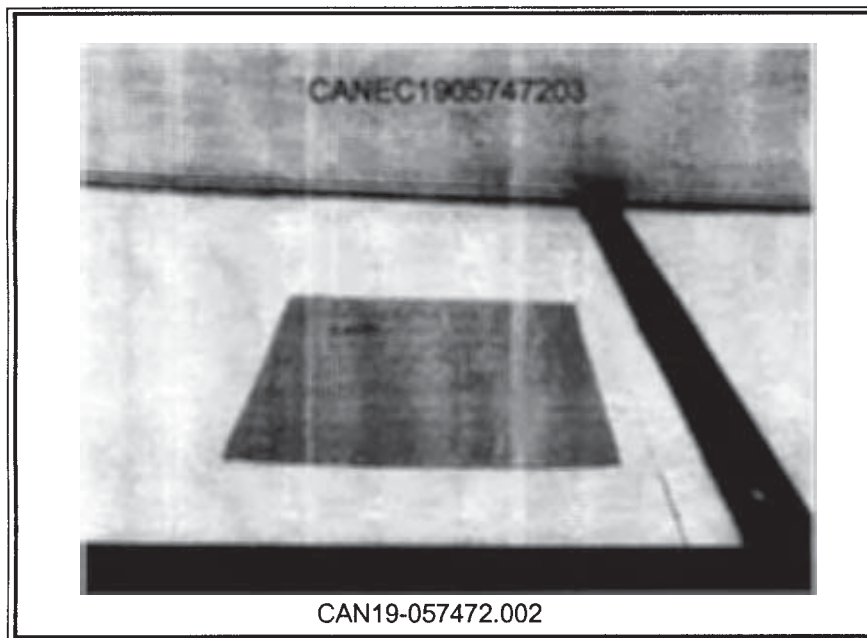
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Sample photo:



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测试报告

No. SZXEC1900162708

日期: 2019年01月30日 第1页,共6页

深圳市联丰五金塑胶制品有限公司

中国深圳市龙岗区坪地镇六联老围海天工业区

以下测试之样品是由申请者所提供及确认: 镀银产品

SGS工作编号: RP19-001526 - SZ

样品接收日期: 2019年01月25日

测试周期: 2019年01月25日 - 2019年01月30日

测试要求: 根据客户要求测试

测试方法: 请参见下一页

测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司深圳分公司
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许丹萍

Kitty Xu许丹萍
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测试报告

No. SZXEC1900162708

日期: 2019年01月30日 第2页,共6页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	SZX19-001627.004	带银色镀层金属

备注:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES,UV-Vis和GC-MS进行分析.

测试项目	限值	单位	MDL	004
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	33
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))▼	-	µg/cm²	0.10	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND



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测试报告

No. SZXEC1900162708

日期: 2019年01月30日 第3页,共6页

测试项目	限值	单位	MDL	004
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND

备注:

(1) 最大允许极限值引用自RoHS指令(EU) 2015/863.

IEC 62321系列等同于 EN 62321系列

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) ▼= a. 当六价格的浓度高于0.13 µg/cm2时, 样品为阳性, 即含有六价格;

b. 当六价格的浓度为ND(低于0.10 µg/cm2)时, 样品为阴性, 即未检测到六价格;

c. 当六价格的浓度介于0.10 µg/cm2与0.13 µg/cm2之间时, 无法直接判定是否检测到六价格, 因不同个体的样品表面差异可能会影响测定结果;

由于未获知样品的存储条件和生产日期, 样品的六价格测试结果仅能代表测试时样品含六价格的状态。



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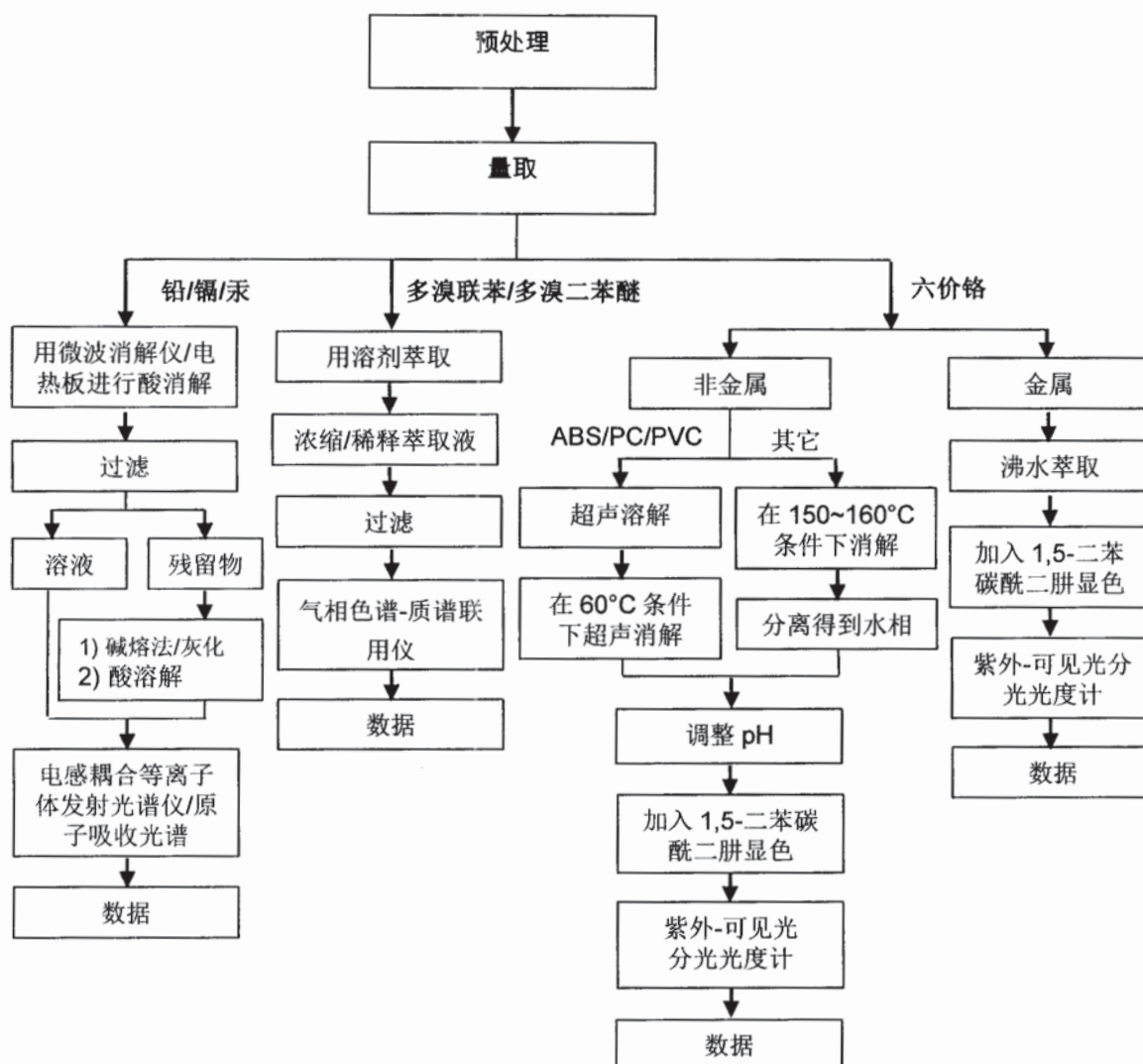
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附件

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs 测试流程图

1) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚测试除外)。



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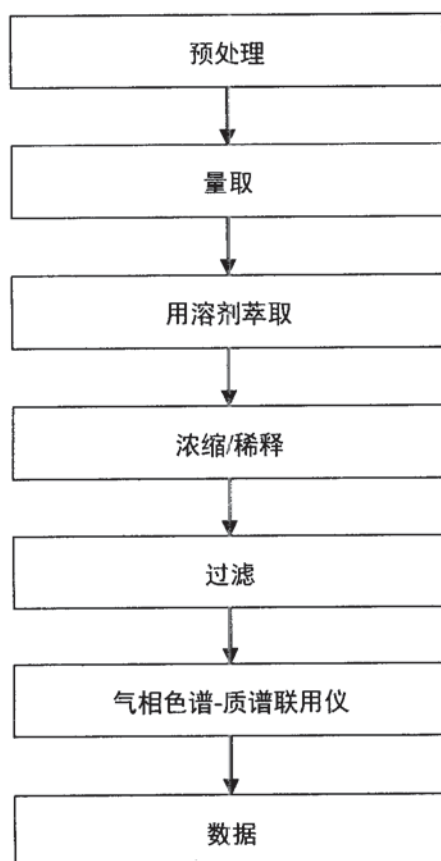
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附件

Phthalates 测试流程图



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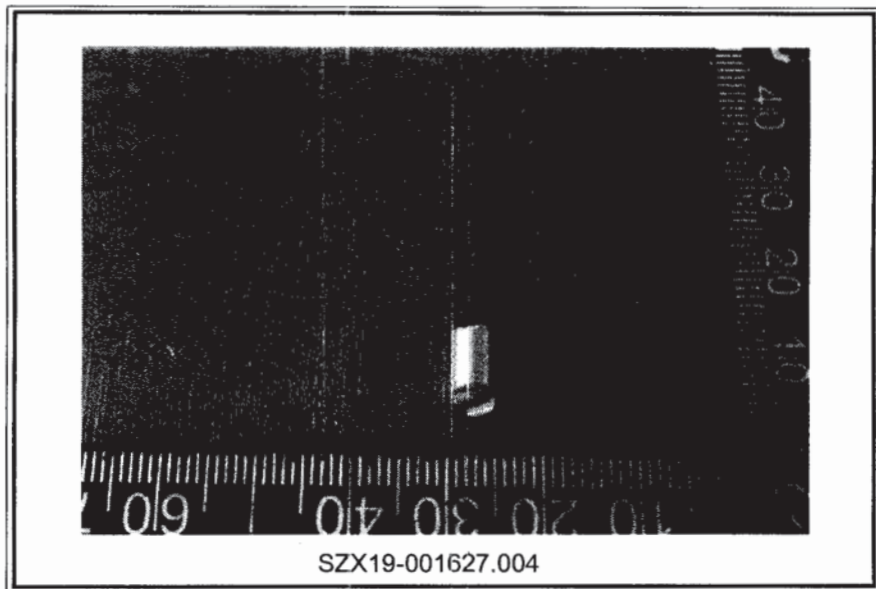
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测试报告

No. SZXEC1900162708

日期: 2019年01月30日 第6页,共6页

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SGS-SONO Standards Technical Services Co., Ltd.
Shenzhen Branch (SGS) Laboratory

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测试报告

No. SZXEC1900162706

日期: 2019年01月30日 第1页,共6页

深圳市联丰五金塑胶制品有限公司

中国深圳市龙岗区坪地镇六联老围海天工业区

以下测试之样品是由申请者所提供及确认: 电镀产品

SGS工作编号: RP19-001526 - SZ

样品接收日期: 2019年01月25日

测试周期: 2019年01月25日 - 2019年01月30日

测试要求: 根据客户要求测试

测试方法: 请参见下一页

测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司深圳分公司

授权签名

许丹萍

Kitty Xu许丹萍

批准签署人



SGS-CS Standards Technical Services Co., Ltd.
Shenzhen Branch 深圳分公司实验室

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Member of the SGS Group (SGS SA)



测试报告

No. SZXEC1900162706

日期: 2019年01月30日 第2页,共6页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	SZX19-001627.003	带银色镀层金属

备注:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES,UV-Vis和GC-MS进行分析.

测试项目	限值	单位	MDL	003
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	33
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))▼	-	µg/cm²	0.10	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND



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测试报告

No. SZXEC1900162706

日期: 2019年01月30日 第3页,共6页

测试项目	限值	单位	MDL	003
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND

备注:

(1) 最大允许极限值引用自RoHS指令(EU) 2015/863。

IEC 62321系列等同于 EN 62321系列

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) ▼= a. 当六价格的浓度高于0.13 µg/cm²时, 样品为阳性, 即含有六价格;b. 当六价格的浓度为ND(低于0.10 µg/cm²)时, 样品为阴性, 即未检测到六价格;c. 当六价格的浓度介于0.10 µg/cm²与0.13 µg/cm²之间时, 无法直接判定是否检测到六价格, 因不同个体的样品表面差异可能会影响测定结果;

由于未获知样品的存储条件和生产日期, 样品的六价格测试结果仅能代表测试时样品含六价格的状态。



SGS-CS (Shenzhen) Standards Technology Co., Ltd.
Shenzhen Branch

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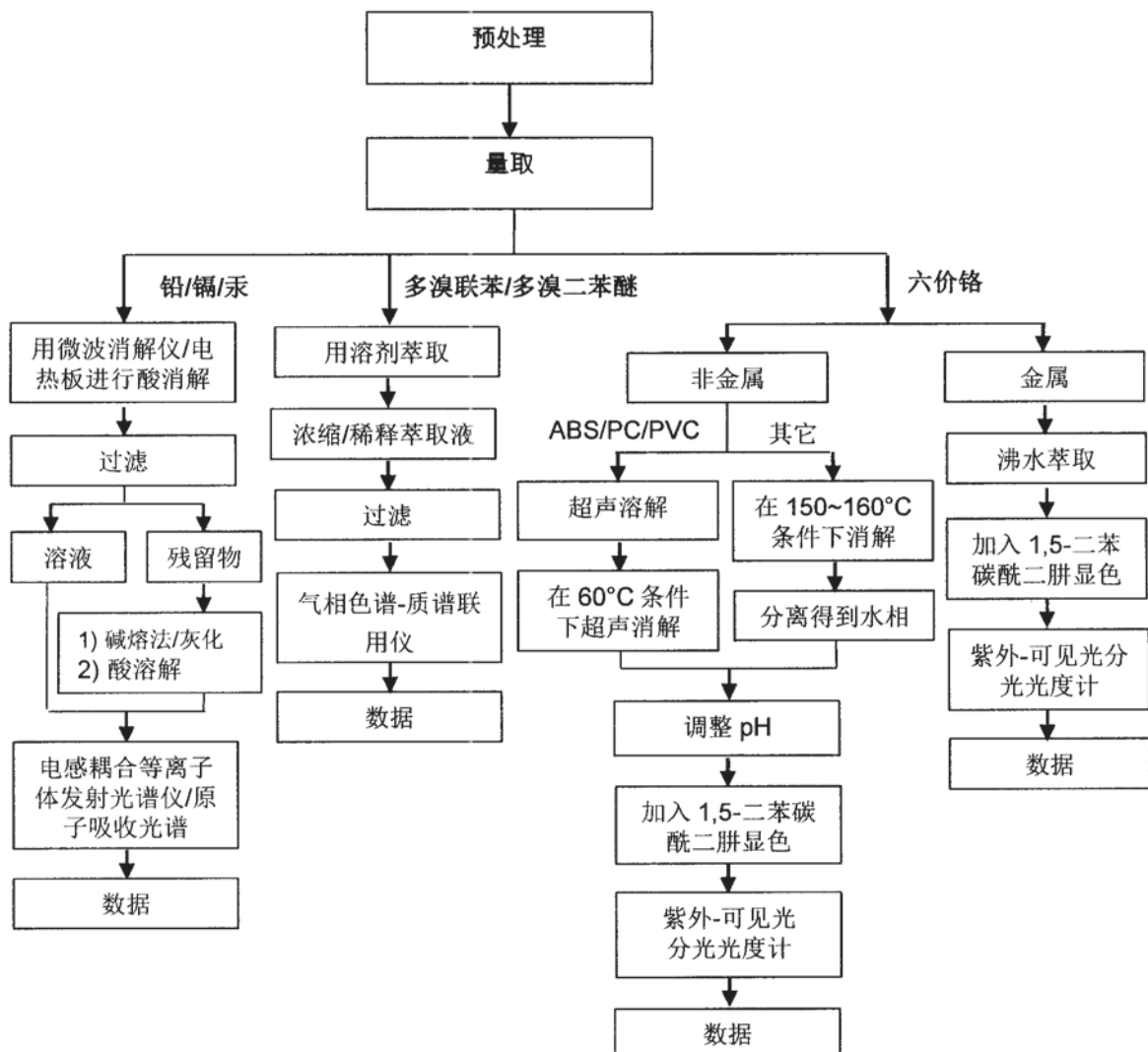
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附件

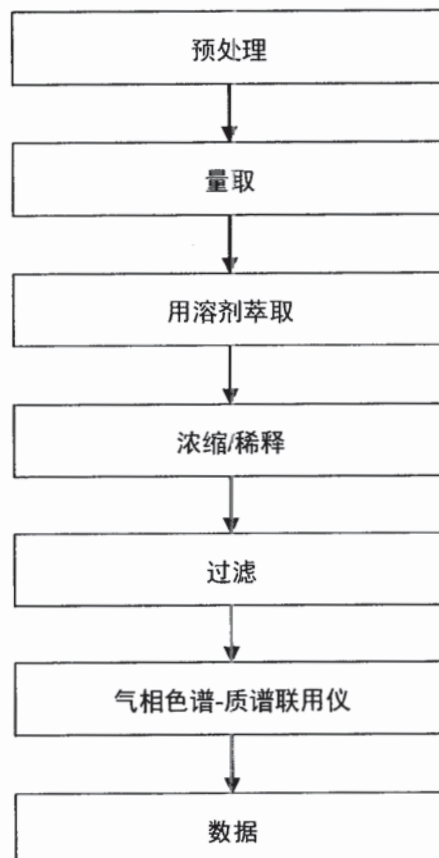
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs 测试流程图

1) 样品按照下述流程被完全消解 (六价铬和多溴联苯/多溴二苯醚测试除外)。



附件

Phthalates 测试流程图



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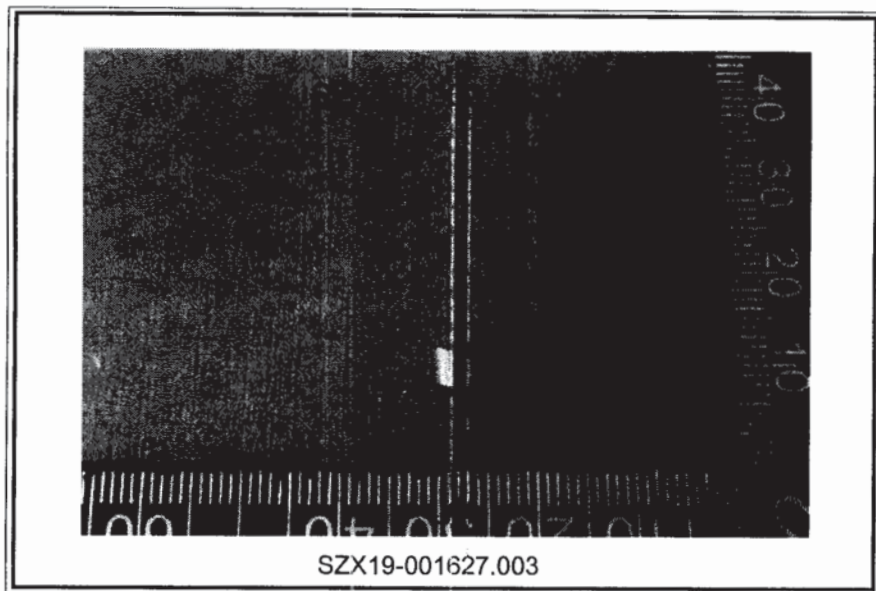
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测试报告

No. SZXEC1900162706

日期: 2019年01月30日 第6页,共6页

样品照片:



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Dist, New Taipei City, 231, Taiwan, R.O.C.**

Non-use of restricted substances statement

QD4-089 Rev.B2

- ii. 當作為包材類的材料，也須符合歐盟包裝指令(94/62/EC) 與修訂指令(2013/2/EU)

When used as package material, it also needs to comply with EU package directive (94/62/EC) and amendment (2013/2/EU)

Note: $Pb+Cd+Hg+Cr^{6+} < 100 \text{ ppm}$

- iii. 若為電池零件，也須符合電池指令 2006/66/EC 與修訂指令 2013/56/EU

For battery components, it also needs to comply with EU battery directive (2006/66/EC) and amendment (2013/56/EU)

Note: $Cd < 20 \text{ ppm}$; $Hg < 5 \text{ ppm}$

二、產品符合衝突金屬(**Conflict Metal**)規範，並確認銷售產品若有含錫、鉭、鎢、金這四種礦產，來源並非來自剛果民主共和國及其周邊國家剛果、烏干達、蘇丹、坦桑尼亞、盧旺達、安哥拉、贊比亞、布隆迪。

The product complies with the conflict metal norms, and confirm that your company selling products contain tin、tantalum、tungsten、gold four mineral, those sources are not come from Democratic Republic of the Congo and its neighboring countries of Congo、Uganda、San、Tanzania、Rwanda、Angola, Zambia, Burundi.

三、產品符合歐盟最新REACH (EC 1907/2006) 規範，

高關注物質(SVHC)，不超過 0.1%上限，以重量計算。

備註：請參照歐盟化學總署(ECHA)網站，最新的高關注物質清單。

This product complies with latest EU REACH (EC 1907/2006) norms.

The SVHC, are not over 0.1% threshold by weight.

Note: Please check ECHA website for latest SVHC list: <https://echa.europa.eu/candidate-list-table>

立書人提供給研揚的所有文件（含測試報告、聲明書、調查表等文件），均正確屬實並且完整。

All documents (including test reports, declarations, survey forms, etc.) provided by Declarant to AAEON shall be correct, true and complete.

如有違背此保證聲明書的規定，飛偉科技有限公司 (填寫公司名稱) 將承擔相關法律責任並賠償研揚所受損害。

If violates any provision of this Declaration, _____ (Fill in Company name) shall take legal responsibilities and compensate AAEON for damages and losses caused by this violation.

承認書

APPROVAL SHEET

客戶名稱
Customer: 研揚科技股份有限公司

飛偉料號
FW P/N: FWAA-1217

客戶料號
Cus. P/N: 1703401600

規格敘述
DESCRIPTION: 3.81mm 端子台 CABLE 160mm

審 核 Approved By	業 務 Sales Dept	品 保 QA Dept	工 程 Engineering Dept
王俊偉	張全生	劉江華	楊仁貴

客戶簽章

Customer Signature:

審 核 Approved By	核 對 Checked By	檢 驗 Tested By

飛偉科技有限公司

FLYINGWAY TECH CO., LTD

Address: 新北市永和區中和路345號7F-4

TEL: 02-22311313

FAX: 02-22311020

CONTACT: Chino Wang

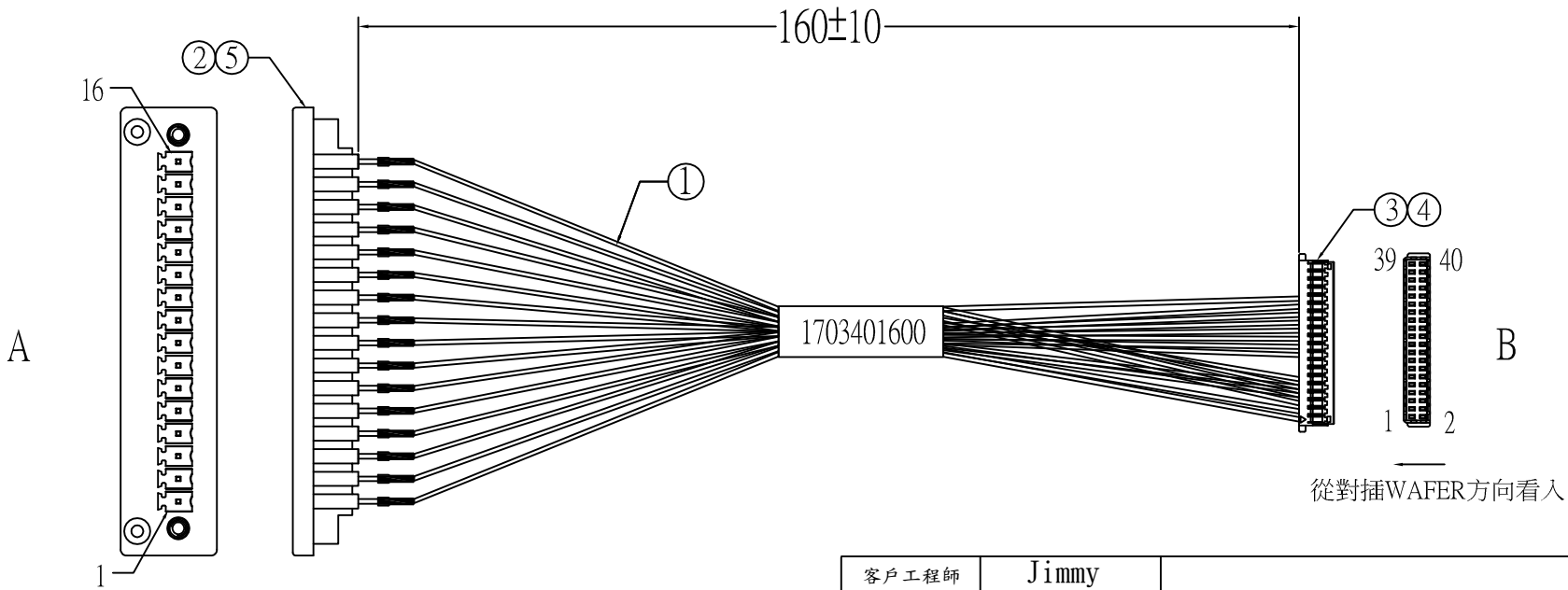
E-Mail: chino@flyingwaytech.com.tw

Cellphone: 0983588528

DATE: 2019/10/29

Pin對照表

A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B	1	3	7	9	18	20	22	24	26	28	30	31	5	12	8	10
顏色	黑	棕	紅	橙	黃	綠	藍	白	黑	棕	紅	橙	黃	綠	藍	白



5	套管: 厚 黑	16	pcs	WORE或同級品
4	TER:11002TOP-2E	15	pcs	JCTC或同級品
3	HSG:11002H00-2*20P	1	pcs	JCTC或同級品
2	端子台:ECHP381-16P	1	pcs	DINKLE或同級品
1	線材:UL1571#28 OD=0.8	共16	pcs	瑞興或同級品
NO	品 名 規 格	數量	單位	生產廠商

客戶工程師	Jimmy	
版次	變更內容	變更日期
A	新發行	2019/04/19
B	修改PIN DEFINE	2019/05/07
飛 偉 科 技 有 限 公 司		
FLYINGWAY TECH CO.,LTD		TEL:02-2231-1313
TITLE: 3.81mm 端子台 CABLE 160mm		FAX:02-2231-1020
FW P/N: FWAA-1217		E-MAIL:chino@flyingwaytech.com.tw
CUS. P/N: 1703401600		
REV: B	DWG BY: Silvia	CHECKED BY: Chino
		DATE: 2019/05/07



UL 1571 HOOK-UP WIRE

80°C 30V 環保 SR-PVC 電子線

UL Subject 758

UL FILE NO:E108485

說明:

應用:

- 導體使用單條或絞線最小至 50AWG 裸銅或鍍錫銅
- 環保 SR-PVC 絕緣
- 額定溫度:80°C, 額定電壓:30Volts
- 可通過 UL VW-1 垂直型耐燃測試。

- 電子設備二次迴路中內部連接用線

Applications:

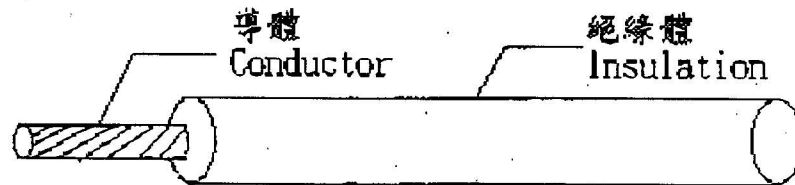
- Internal wiring in electronic equipments

Product Description:

- Tinned, annealed, attended or solid copper conductor, MIN,50AWG
- Lead FreeSR- PVC insulation.
- Rated temperature: 80°C, Rated voltage:30volts.
- Uniform thickness of wire to ensure easy stripping and cutting
- Passes UL VW-1 vertical flame test.

構造及電氣性能

structure & electric properties(UL STANDARD 758:外徑 0.70mm 以下不印字)



UL 1571	額 定 Range		導 體 Conductor		絕 緣 體 Insulation		公差值 Tolerance Mm	最大導體	最小絕緣	絕緣耐電
	溫 度 Temp ℃	電 壓 Voltage V	線號 AWG	構 成 NO./mm	厚 度 Thickness mm	外 徑 O.D mm		阻抗 Maximum Conductor Resistance Ω/km	阻抗 Minimum Insulation Resistance MΩ/km	壓(VAC/min) Insulation Potential Strength
Stranded 多芯線	80℃	30V	34	7/0.060	0.20	0.60	±0.05	728	15	500
			32	7/0.080	0.20	0.65		703		
			30	7/0.100	0.20	0.70		397		
			28	7/0.127	0.20	0.80		248		
			26	7/0.160	0.20	0.90		152		
			24	11/0.160	0.20	1.05		88.6		
			22	17/0.160	0.20	1.20		62.5		
			20	21/0.180	0.20	1.50		39.5		
34			7/0.060	0.20	0.60	728				
32			7/0.080	0.20	0.65	703				
30			7/0.100	0.20	0.70	397				
28			7/0.127	0.20	0.80	248				
26			7/0.160	0.20	0.90	152				
24			7/0.200	0.20	1.05	88.6				
(ATC) 先絞後鍍			30	1/0.254	0.20	0.65		377		
			28	1/0.320	0.20	0.75		245		
	26	1/0.404	0.20	0.85	155					



瑞興電線電纜製品廠
REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.
承 認 書
SPECIFICATION

型號 STYLE			UL 1571								
額定溫度/電壓 RATING TEMP./VOLT.			80℃/30V								
導體 CONDUCTOR	線號 SIZE		AWG	34	32	30	28	26	24	22	20
	芯數 NUMBER		NO.	7	7	7	7	7	11	17	21
	銅線直徑 DIAMETER		MM	0.060	0.080	0.100	0.127	0.160	0.160	0.160	0180
	最小銅線直徑 MIN.DIAMETER		MM	0.054	0.074	0.090	0.117	0.150	0.150	0.150	0.170
	導體截面積 CROSS SEC AREA OF COND	AVG.	CM	39.7	64	100	159	253	404	640	1020
		MIN.		35.1	62.7	98	156	248	392	621	989
	絞距 LAY OF BUNCH		INCH	0.40	0.40	0.40	0.50	0.60	0.70	0.80	1.25
最大電阻 MAX.RESISTANCE			Ω/KM	728	703	397	248	152	88.6	62.5	39.5
絕緣體 INSULATION	完成外徑 O.D. (±0.10)		MM	0.60	0.65	0.70	0.80	0.90	1.05	1.20	1.50
	絕緣體厚度 INSULATION THICKNESS	AVG	MM	0.20							
		MIN		0.15							
	外被厚度 JACKET THICKNESS	AVG	MM	/							
		MIN		/							
最小絕緣電阻 INSULATION ESISTANCE			MΩ/KM	15							
火花試驗 SPARK TEST			KV	2KV/0.15sec							
最小伸長率 ELONGATION			%	100%							
最小抗張強度 TENSIL STRENGTH			PSI	1500							
最小老化後伸長率 LO.(AFTER AGING)			%	OF UNAGED 65							
最小老化後抗張強度 TEN.ST.(AFTER AGING)			%	OF UNAGED 70							
老化試驗溫度/條件 AGING TEMP./TIME			113℃/168HRS								
耐燃燒試驗 FIAME TEST			VW-1								
高溫纏繞試驗 HEAT SHOCK TEST			80℃/1HR 1.60MM MANDREL								
低溫纏繞試驗 COLD BEND TEST			-10℃/1HR 3.2MM MANDREL								
耐電壓試驗 I NSULATION POTENTIALST			500VAC/min								

ISSUED	1997-01-17	APPROVED	CHECKED	PREPARED
REVISION		洪夾詩印	李榮天印	劉安輝



Underwriters Laboratories Inc.®

File E108485

Vol. 2

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FOLLOW-UP SERVICE PROCEDURE (TYPE L)

COMPONENT - APPLIANCE WIRING MATERIAL (AVLV2, AVLV8)

Manufacturer:
(342072-001)

REI HSING WIRE & CABLE CO LTD
TSENG TEN INDUSTRIAL PARK
CHEN KOU
CHANG AN TOWN
DONGGUAN GUANGDONG CHINA

Applicant:
(559504-001)

REI HSING WIRE CO LTD
56-5 JIUN-ING ST
SHUH-LIN CITY
TAIPEI HSIEN TAIWAN

Recognized
Company:
(559504-001):

SAME AS APPLICANT

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The Prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and the representative of Underwriters Laboratories Inc. and is not used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

The PROCEDURE, and any subsequent revisions, is the property of UNDERWRITERS LABORATORIES INC., and is not transferable.

UNDERWRITERS LABORATORIES INC.

J. J. Ritchie

J. J. Ritchie
Vice President

Laboratory Management and Operations



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dedicated to public safety and
committed to quality service

TABLE OF AUTHORIZED STYLES SINGLE-CONDUCTOR THERMOPLASTIC INSULATED WIRE

Page	Issued	Page	Issued	Page	Issued	Page	Issued
F 1007	1997-06-04	F 1333	2003-12-08	F 1723	2003-12-08		
F 1010	2003-02-27	F 1371	2003-12-08	1726	2003-12-08		
F 1011	1997-06-04	1429	2004-11-24	F 1789	2004-11-24		
F 1013	1997-06-04	F 1430	1999-04-29	F 10064	2003-12-08		
F 1015	1997-06-04	1431	2004-11-24	10070	2006-07-21		
F 1028	1997-06-04	F 1497	1997-06-04	10109	2004-05-04		
1032	2001-06-19	F 1500	1997-06-04	10198	2006-07-21		
1061	1997-01-17	1516	2004-05-04	10362	2003-12-08		
1080	2003-01-03	1533	2000-11-09	10368	2004-11-24		
F 1095	1997-06-04	F 1538	2003-12-08	10369	2004-11-24		
1164	2004-05-04	1569	2003-06-17				
1180	2004-05-04	F 1571	1997-01-17				
1185	2000-11-09	F 1577	2003-12-08				
1198	2004-05-04	F 1581	2001-05-09				
1199	2004-05-04	1584	2004-05-04				
1212	2004-05-04	F 1589	2007-06-19				
1213	2004-05-04	1591	2003-12-08				
1226	2003-12-08	1592	2003-12-08				
1227	2003-12-08	1617	1997-01-17				
F 1283	2003-02-27	1618	2003-02-27				
1285	2003-01-08	1672	2003-02-27				
F 1316	2003-02-27	1674	2003-02-27				
F 1330	2003-12-08	F 1685	2004-11-24				
F 1331	2003-12-08	1709	2003-12-08				
F 1332	2003-12-08	1710	2003-12-08				



Test Report (SVHC)

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-01
Client Ref. Info. : I-PE-01;I-TPE-01; I-PP-01; I-PU-01; I-RU-01; I-TPR-01;I-PPE-01
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



Test Report (SVHC)

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.002	White liquid	6
SN2	CAN19-014883.005	White liquid	181
SN3	CAN19-014883.008	White liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	002 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	005 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	008 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	005
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	005
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	005
I	4	Anthracene	120-12-7	0.050	005
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	005
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	005
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	005
I	8	Cobalt dichloride*	7646-79-9	0.005	005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	005
I	10	Diarsenic trioxide*	1327-53-3	0.005	005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	005
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4,319 4- 55-6	0.050	005
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	005
I	15	Triethyl arsenate*	15606-95-8	0.005	005
II	16	2,4-Dinitrotoluene	121-14-2	0.050	005
II	17	Acrylamide	79-06-1	0.050	005
II	18	Anthracene oil**	90640-80-5	0.050	005
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	005
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	005
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	005
II	23	Diisobutyl phthalate	84-69-5	0.050	005
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	005
II	25	Lead chromate*	7758-97-6	0.005	005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	005
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	005
III	29	Ammonium dichromate*	7789-09-5	0.005	005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	005
III	32	Potassium chromate*	7789-00-6	0.005	005
III	33	Potassium dichromate*	7778-50-9	0.005	005
III	34	Sodium chromate*	7775-11-3	0.005	005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	005
III	36	Trichloroethylene	79-01-6	0.050	005
IV	37	2-Ethoxyethanol	110-80-5	0.050	005
IV	38	2-Methoxyethanol	109-86-4	0.050	005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	005
IV	40	Chromium trioxide*	1333-82-0	0.005	005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	005
V	45	1,2,3-trichloropropane	96-18-4	0.050	005
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	005
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	005
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	005
V	49	2-ethoxyethyl acetate	111-15-9	0.050	005
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	005
V	51	Strontium chromate*	7789-06-2	0.005	005
VI	52	1,2-Dichloroethane	107-06-2	0.050	005
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	005
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	005
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	005
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	005
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	005
VI	60	Calcium arsenate*	7778-44-1	0.005	005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	005
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	005
VI	64	Lead dipicrate*	6477-64-1	0.005	005
VI	65	Lead styphnate*	15245-44-0	0.005	005
VI	66	N,N-dimethylacetamide	127-19-5	0.050	005
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	005
VI	68	Phenolphthalein	77-09-8	0.050	005
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	005
VI	70	Trilead diarsenate*	3687-31-8	0.005	005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	005
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	005
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	005
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	005
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	005
VII	78	Diboron trioxide*	1303-86-2	0.005	005
VII	79	Formamide	75-12-7	0.050	005
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	005
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	005
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	005
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	005
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	005
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	005
VIII	88	1-Bromopropane	106-94-5	0.050	005
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	005
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	005
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	005
VIII	93	4-Aminoazobenzene	60-09-3	0.050	005
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	005
VIII	95	4-Nonylphenol, branched and linear	-	0.050	005
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	005
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	005
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	005
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	005
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	005
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	005
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	005
VIII	103	Diethyl sulphate	64-67-5	0.050	005
VIII	104	Diisopentylphthalate	605-50-5	0.050	005
VIII	105	Dimethyl sulphate	77-78-1	0.050	005
VIII	106	Dinoseb	88-85-7	0.050	005
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	005
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	005
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	005
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	005
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	005
VIII	114	Lead cyanamidate*	20837-86-9	0.005	005
VIII	115	Lead dinitrate*	10099-74-8	0.005	005
VIII	116	Lead monoxide*	1317-36-8	0.005	005
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	005
VIII	121	Methoxyacetic acid	625-45-6	0.050	005
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	005
VIII	123	N,N-dimethylformamide	68-12-2	0.050	005
VIII	124	N-Methylacetamide	79-16-3	0.050	005
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	005
VIII	126	o-Aminoazotoluene	97-56-3	0.050	005
VIII	127	o-Toluidine	95-53-4	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	005
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	005
VIII	134	Tetraethyllead*	78-00-2	0.005	005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	005
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	005
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	005
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	005
IX	141	Cadmium oxide*	1306-19-0	0.005	005
IX	142	Cadmium*	7440-43-9	0.005	005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	005
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	005
X	145	Cadmium sulphide*	1306-23-6	0.005	005
X	146	Dihexyl phthalate	84-75-3	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	005
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	005
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	005
X	150	Lead di(acetate)*	301-04-2	0.005	005
X	151	Trixylyl phosphate	25155-23-1	0.050	005
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	005
XI	153	Cadmium chloride*	10108-64-2	0.005	005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	005
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	005
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	005
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	005
XII	159	Cadmium fluoride*	7790-79-6	0.005	005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	005
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	005
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	005
XIV	164	1,3-propanesultone	1120-71-4	0.050	005
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	005
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	005
XIV	167	Nitrobenzene	98-95-3	0.050	005
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	005
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	005
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	005
XVI	171	4-Heptylphenol, branched and linear	-	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	005
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	005
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	005
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	005
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	005
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	005
XVIII	178	Cadmium carbonate*	513-78-0	0.005	005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	005
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	005
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	008
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	008
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	008
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	008
XIX	186	Disodium octaborate*	12008-41-2	0.005	008



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Test Report (SVHC)

No. CANEC1901488302

Date: 30 Jan 2019

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	008
XIX	188	Ethylenediamine	107-15-3	0.050	008
XIX	189	Lead*	7439-92-1	0.005	008
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	008
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	008
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	002
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	002
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	002
XX	195	Fluoranthene	206-44-0	0.050	002
XX	196	Phenanthrene	85-01-8	0.050	002
XX	197	Pyrene	129-00-0	0.050	002



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Guangzhou Branch Testing Center Chemical Laboratory

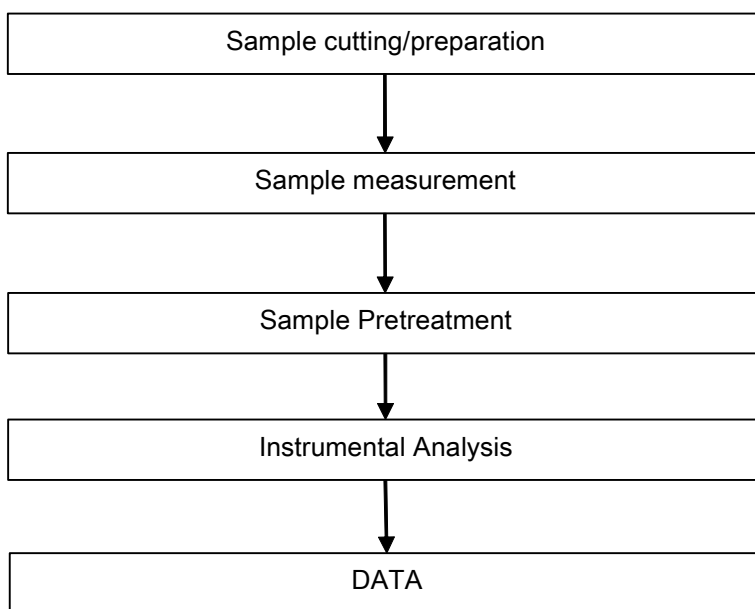
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SVHC Testing Flow Chart



Test Report (SVHC)

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Sample photo:



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Test Report (SVHC)

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Test Report

No. CANEC1910676519

Date: 21 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

This report is to supersede test report CANEC1910676513

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-02

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1910676519

Date: 21 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.003	Black liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

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Test Item(s)	Limit	Unit	MDL	003
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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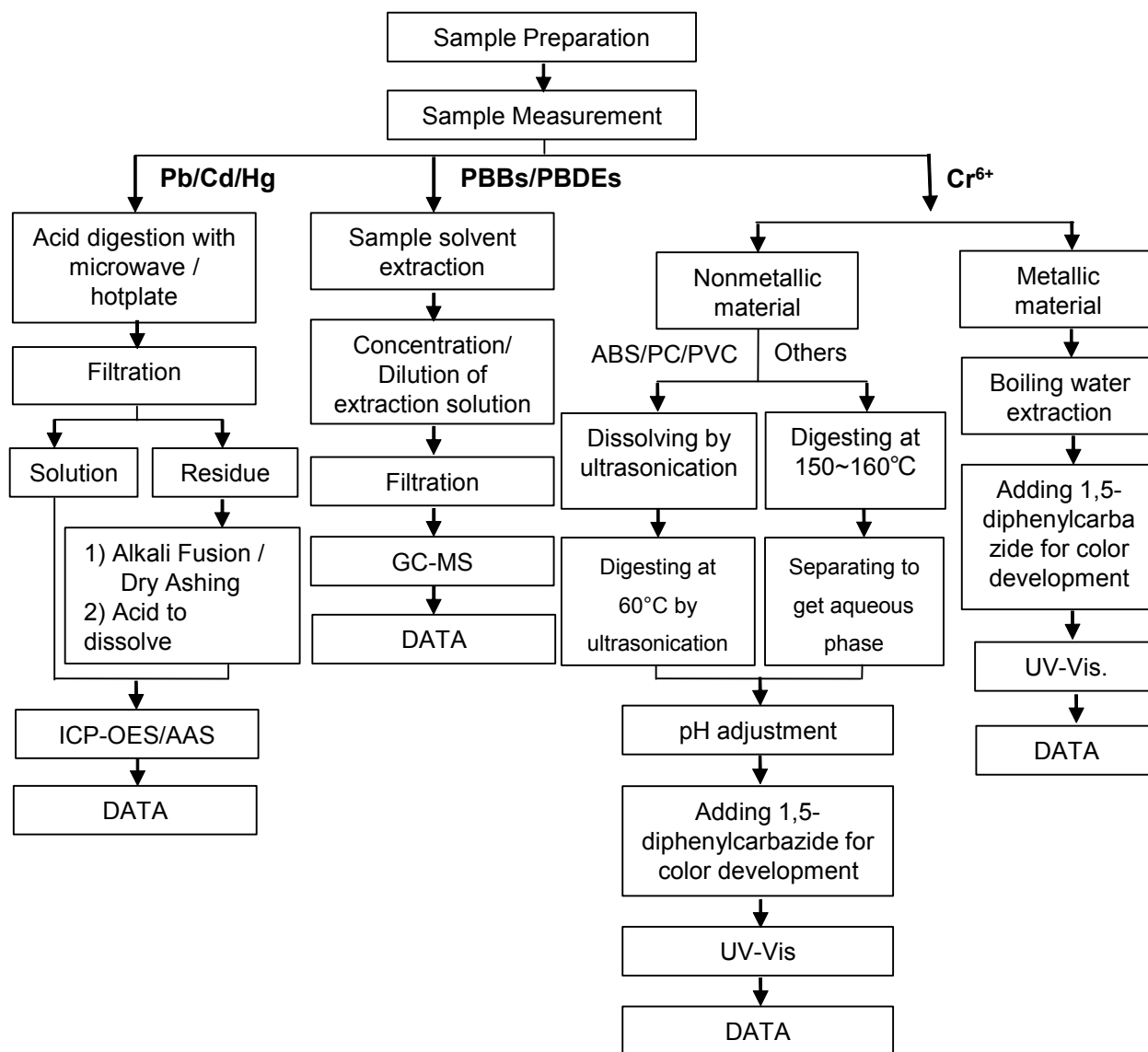
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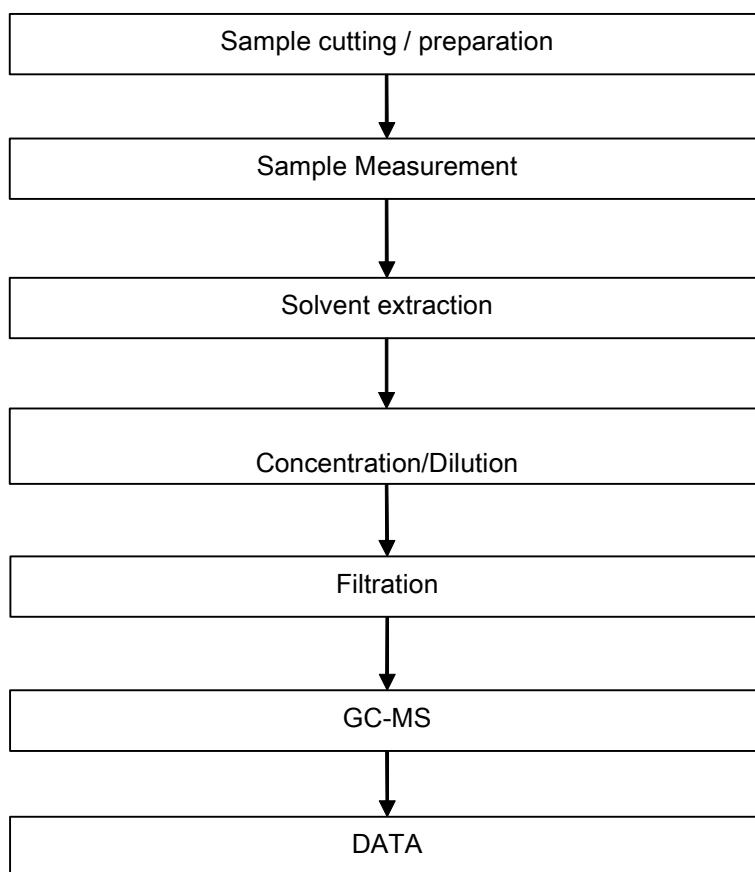
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1910676519

Date: 21 Jun 2019

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Sample photo:



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Test Report



Page 1 of 7

Report No. A2190175998101034

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BROWN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101034

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101034

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101034

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	96 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Brown wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

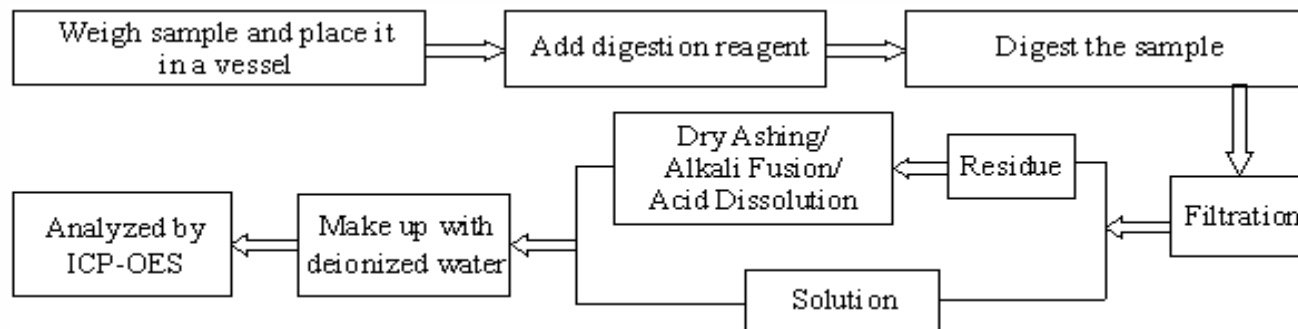
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Report No. A2190175998101034

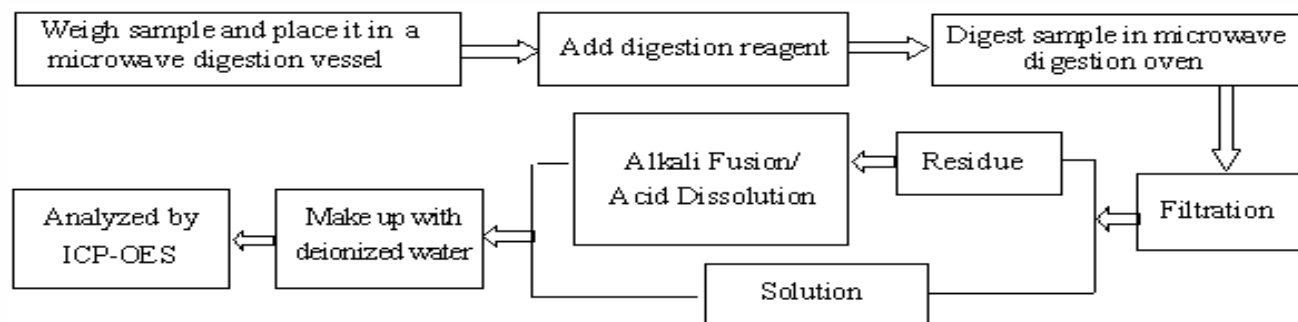
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Test Process

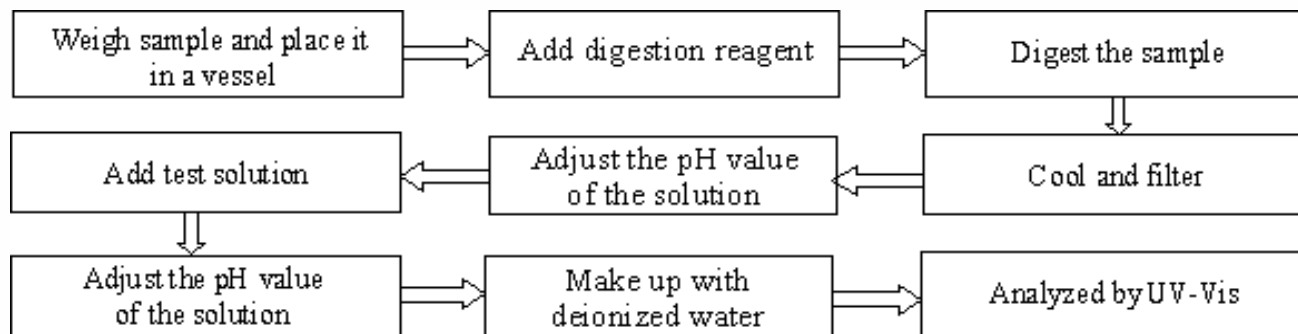
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



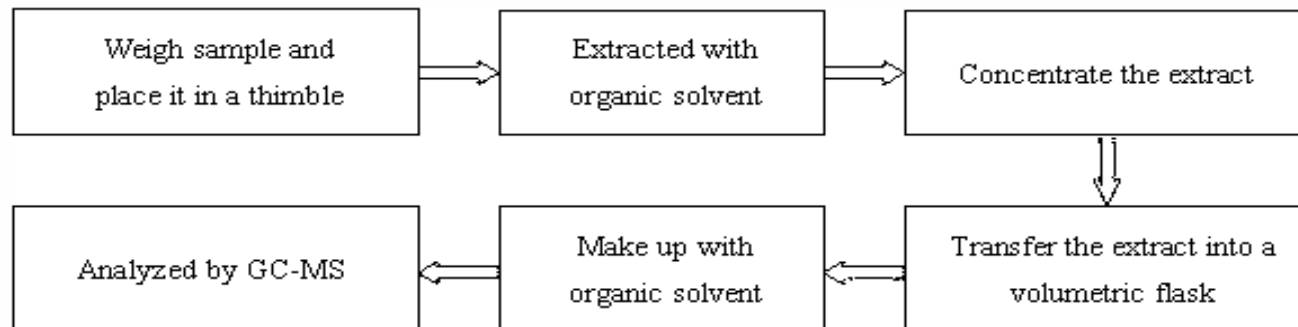
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

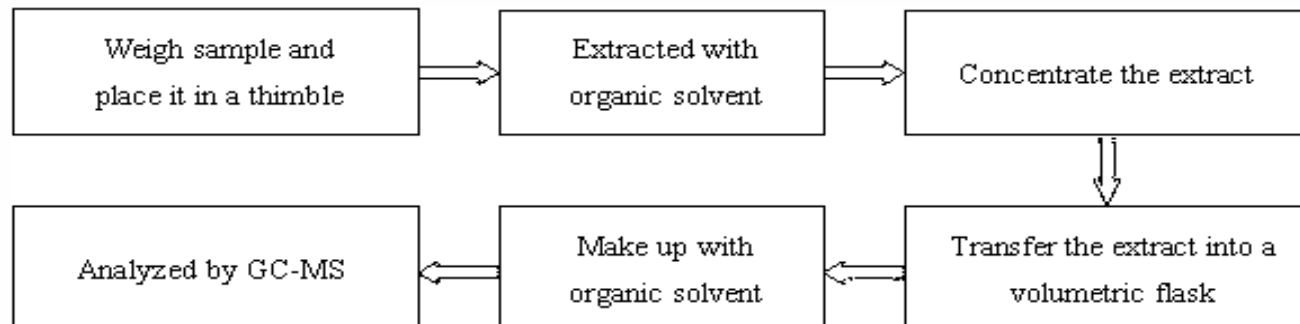


Test Report

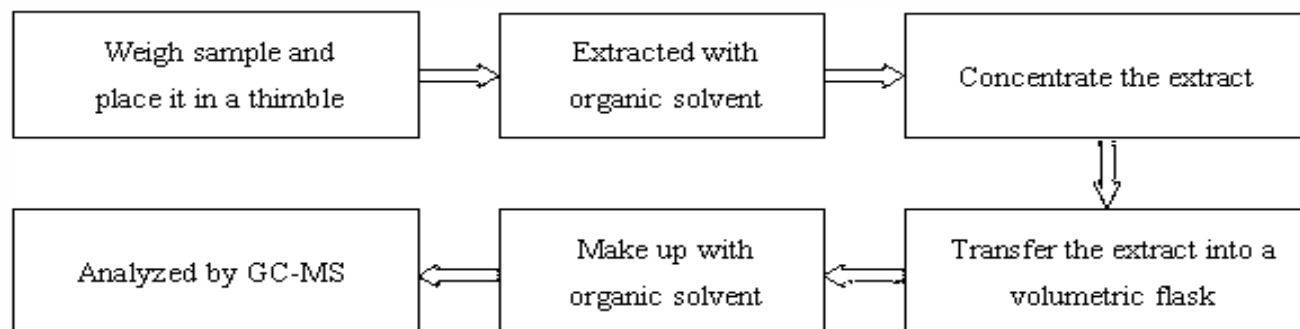
Report No. A2190175998101034

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101034

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report



Page 1 of 7

Report No. A2190175998101028

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name GREEN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101028

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101028

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101028

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	350 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Green wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

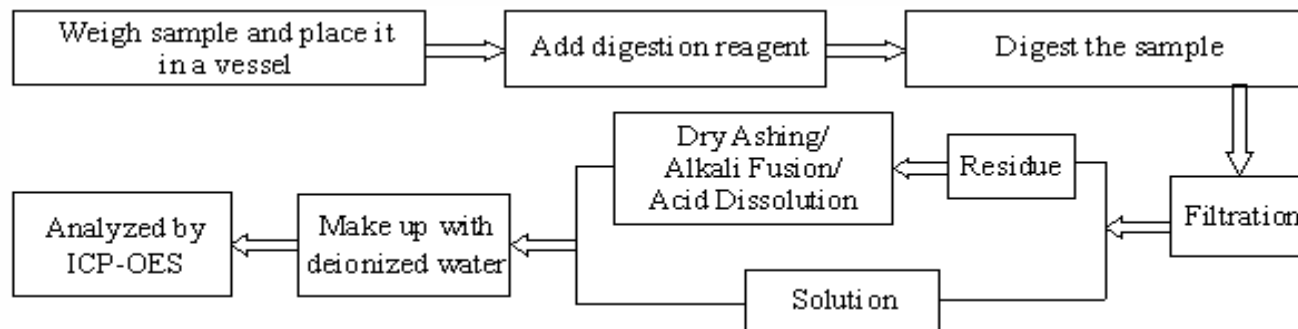
Test Report

Report No. A2190175998101028

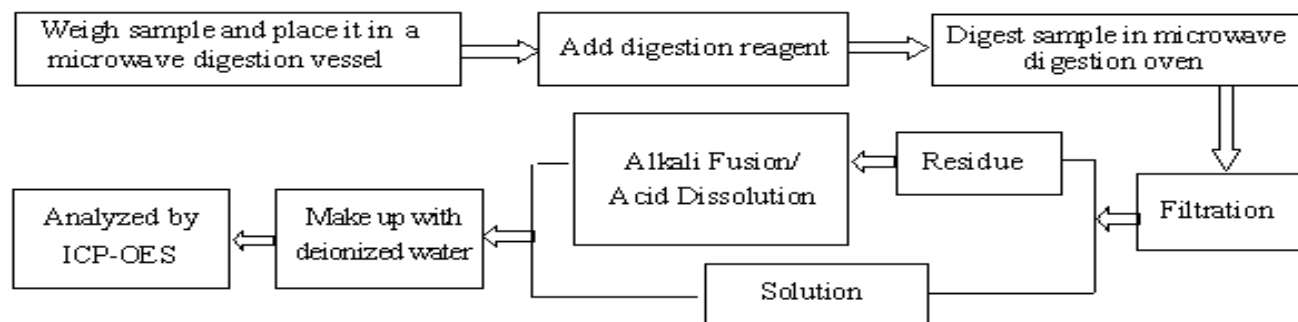
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Test Process

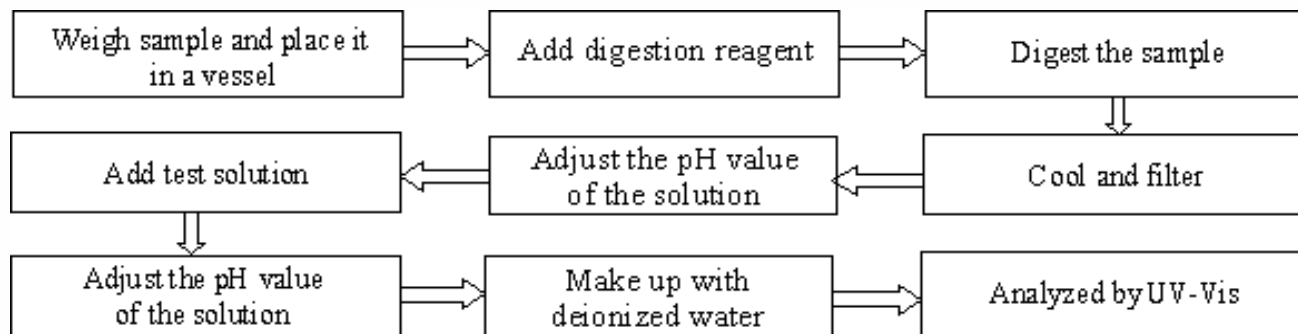
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



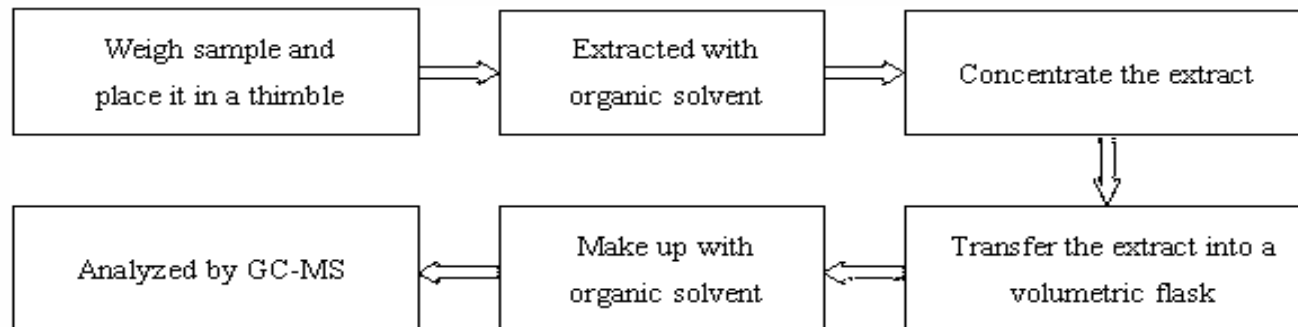
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

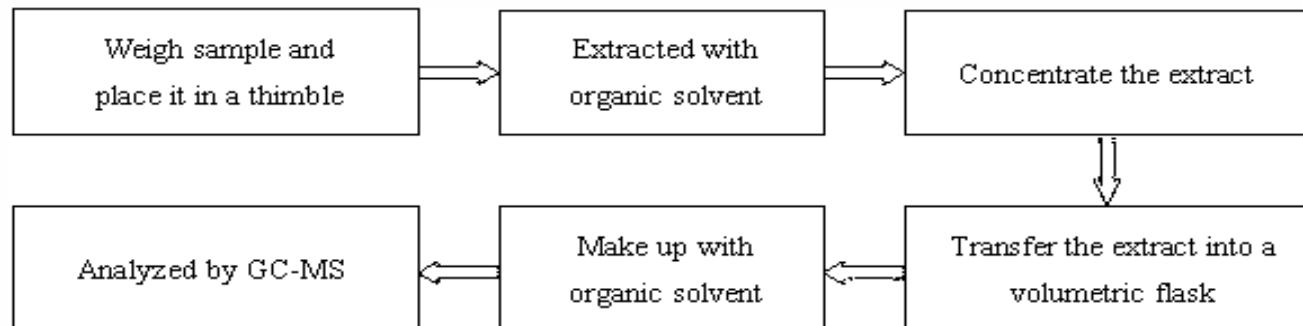


Test Report

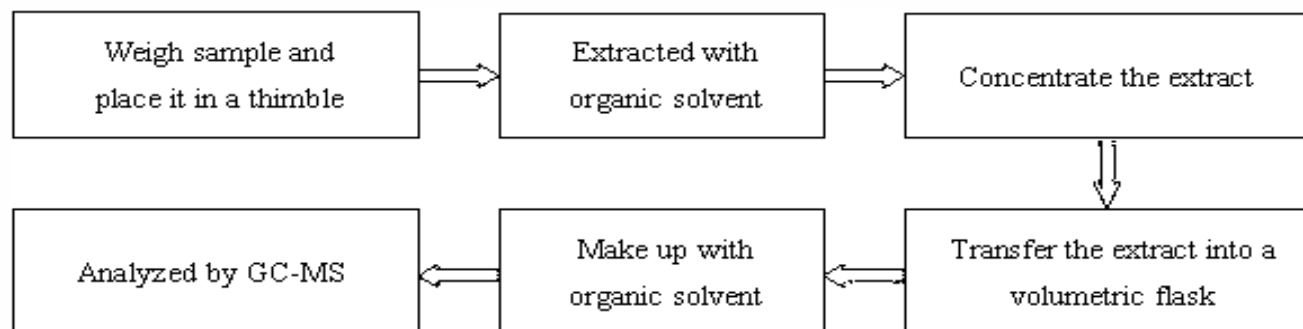
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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101028

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101025

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLUE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101025

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101025

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	102 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Blue wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

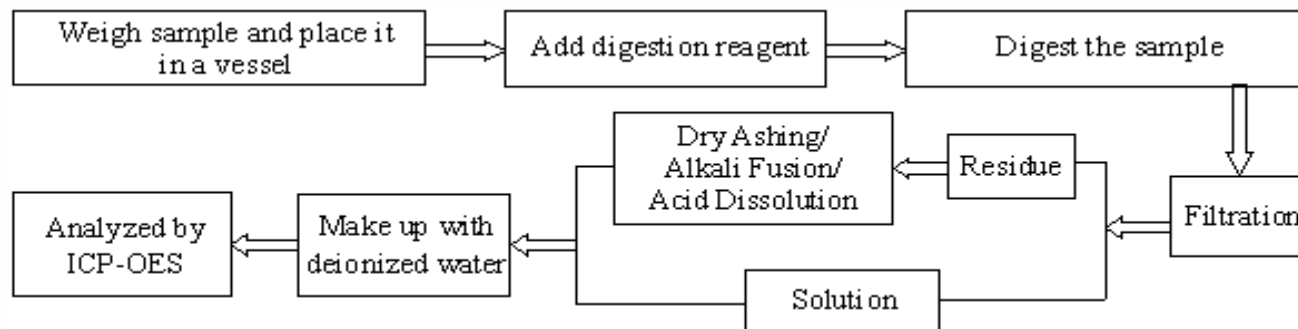
Test Report

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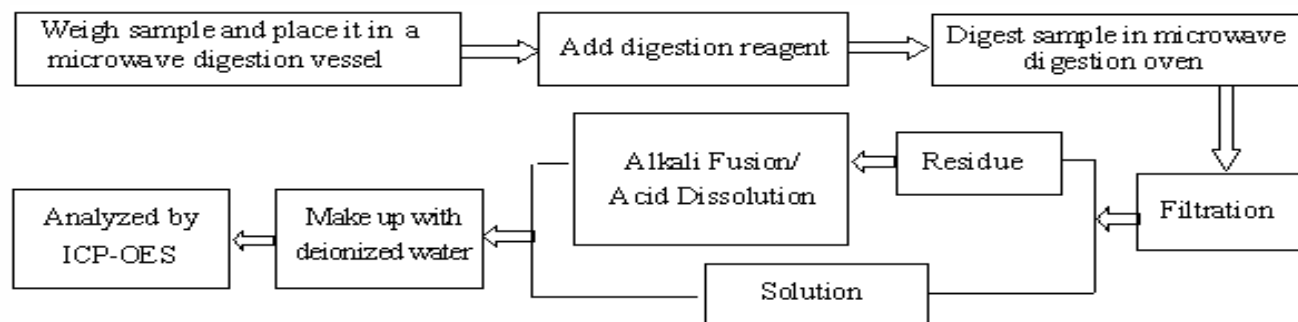
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Test Process

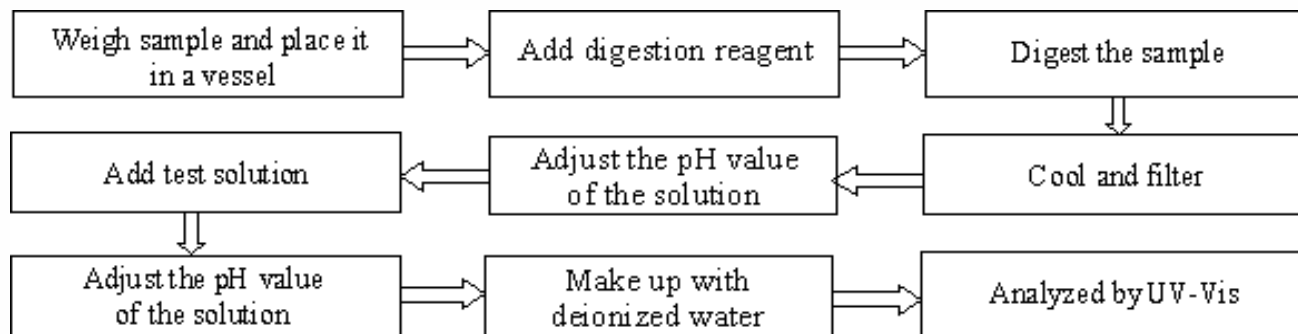
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



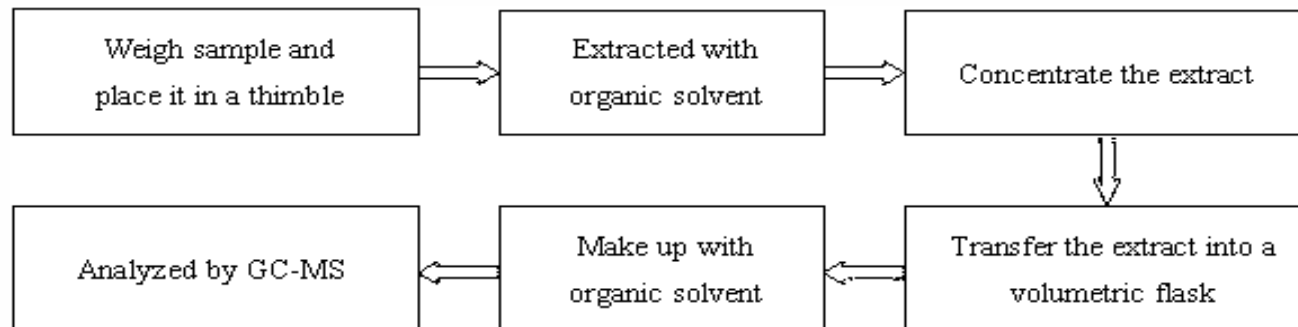
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

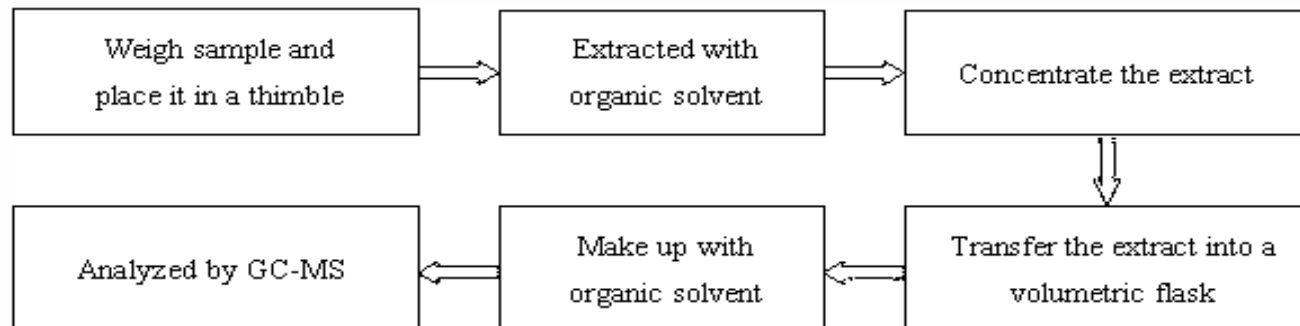


Test Report

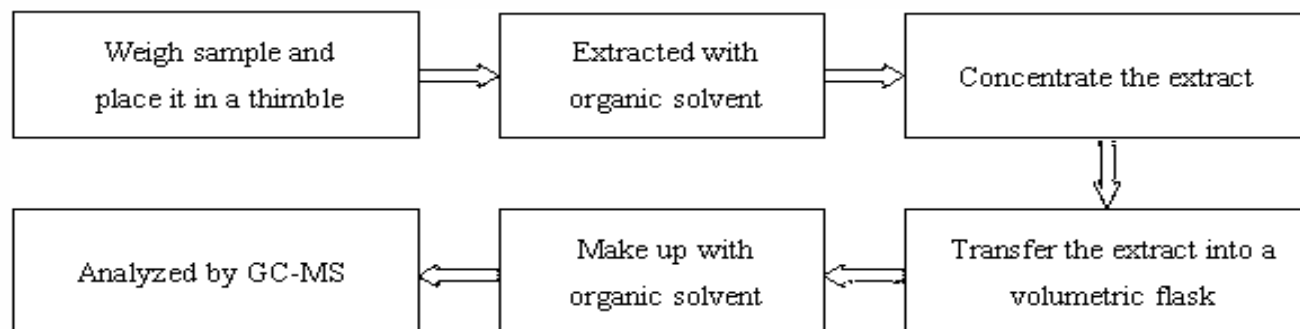
Report No. A2190175998101025

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

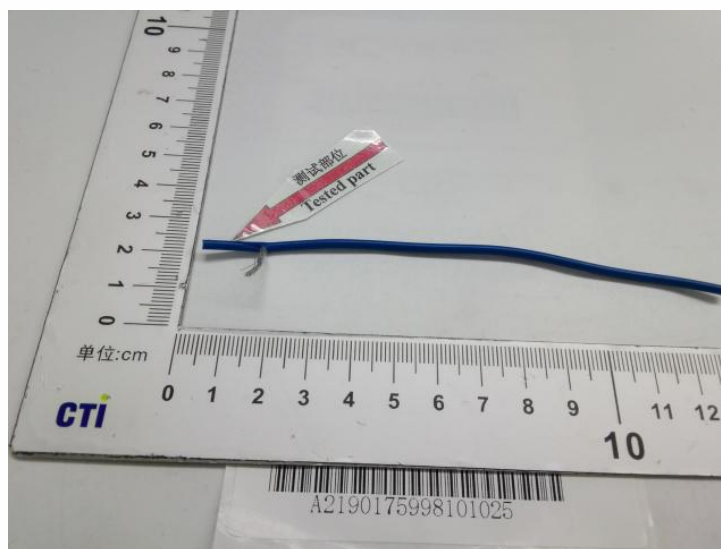


Test Report

Report No. A2190175998101025

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Photo(s) of the sample(s)



*** End of report ***

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Test Report



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Report No. A2190175998101019

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name YELLOW PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101019

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101019

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Yellow wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

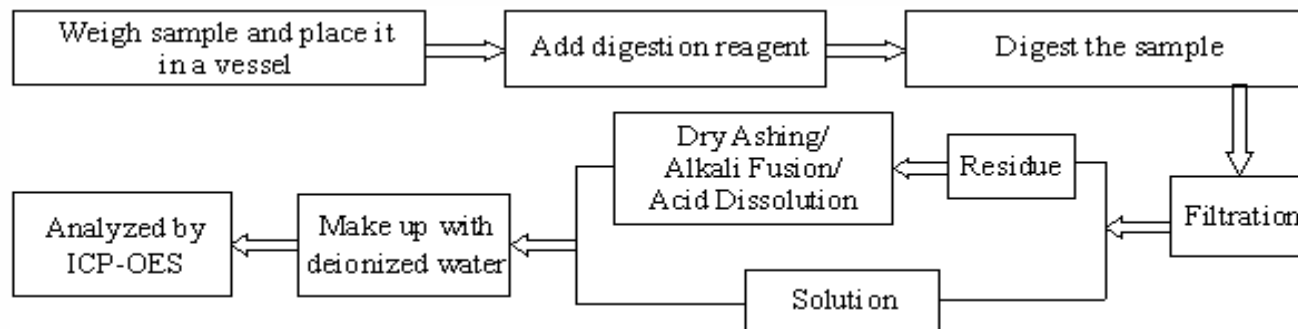
Test Report

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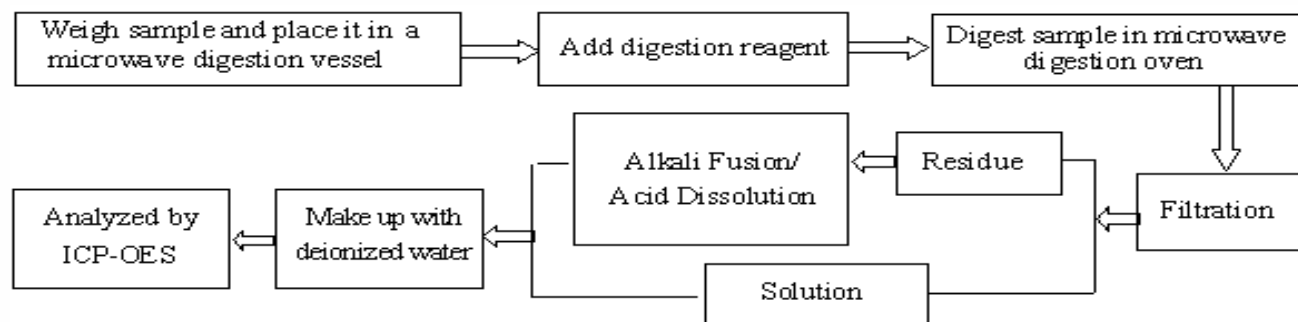
Page 5 of 7

Test Process

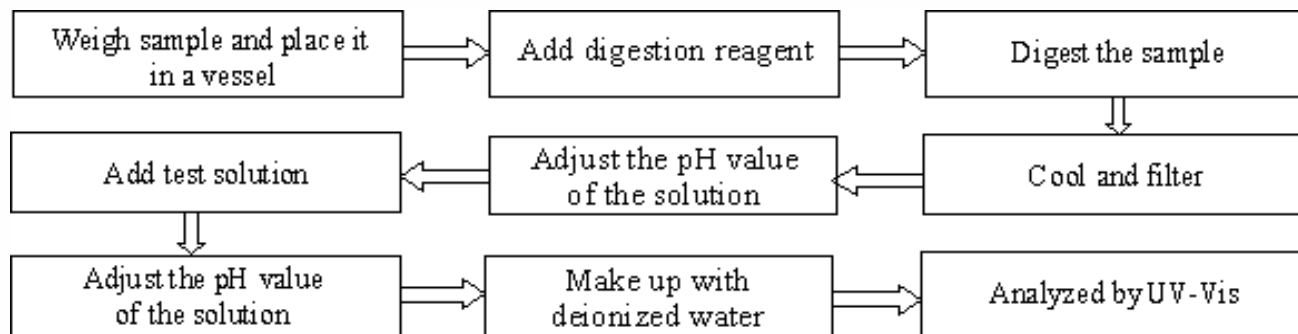
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



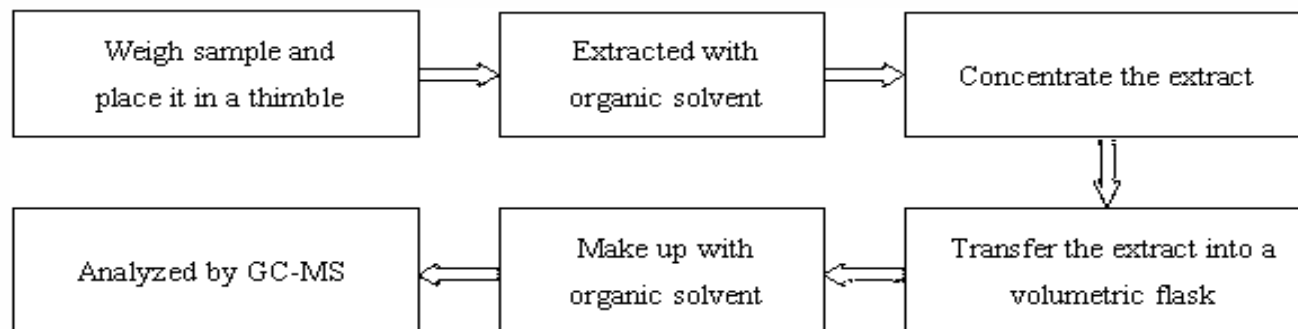
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

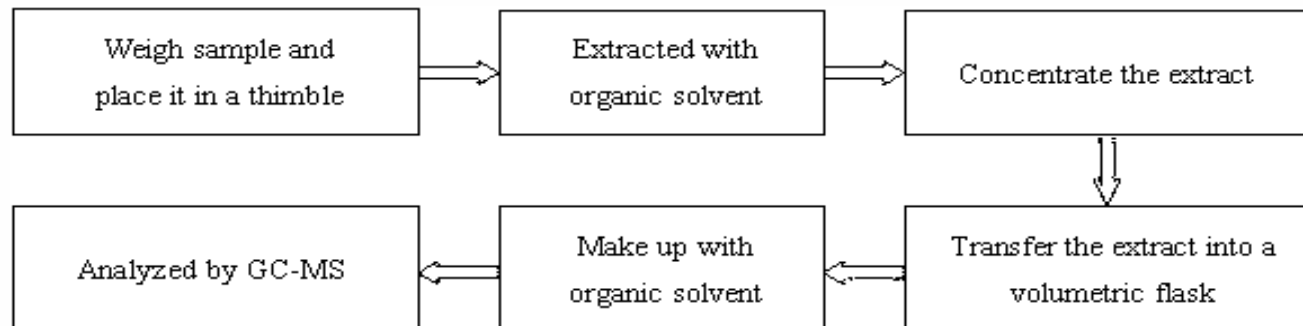


Test Report

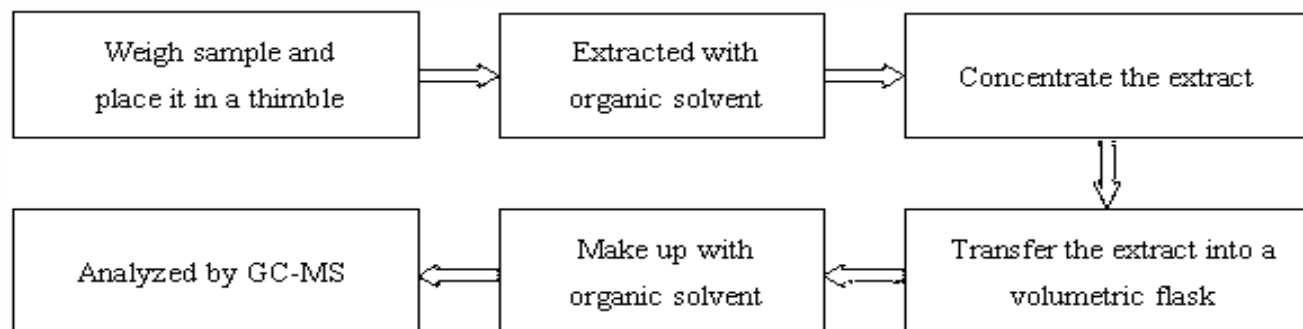
Report No. A2190175998101019

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

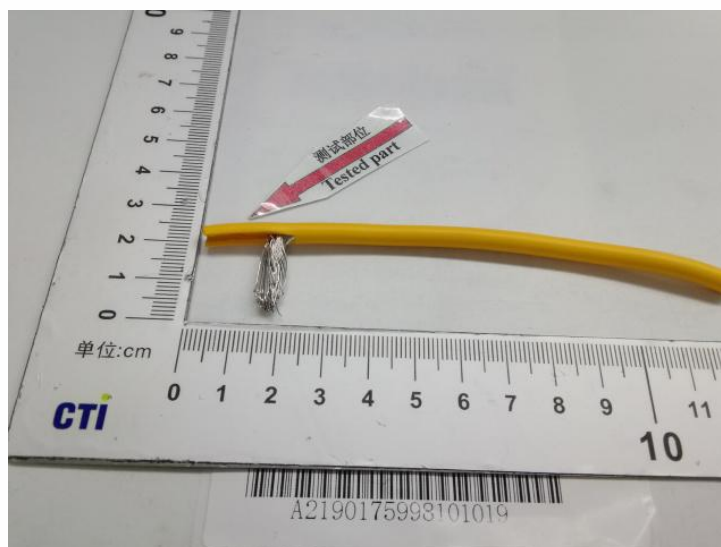


Test Report

Report No. A2190175998101019

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
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Test Report



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Report No. A2190175998101004

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name ORANGE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101004

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101004

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101004

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	88 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Orange wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

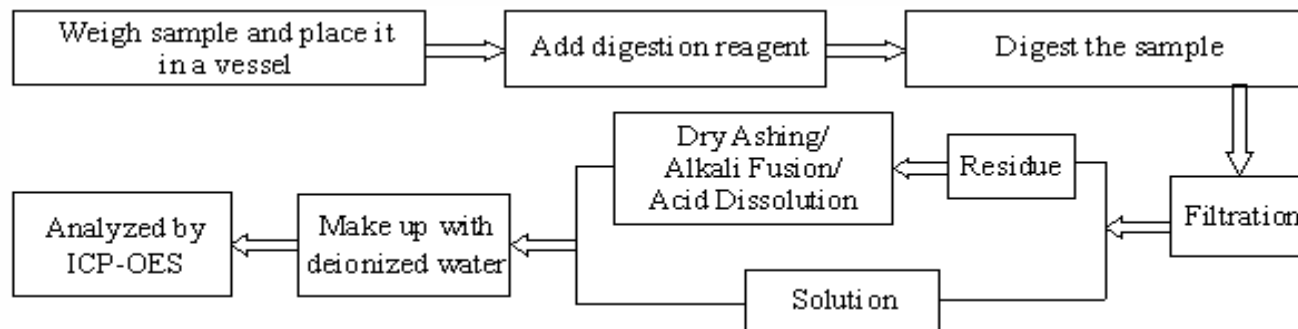
Test Report

Report No. A2190175998101004

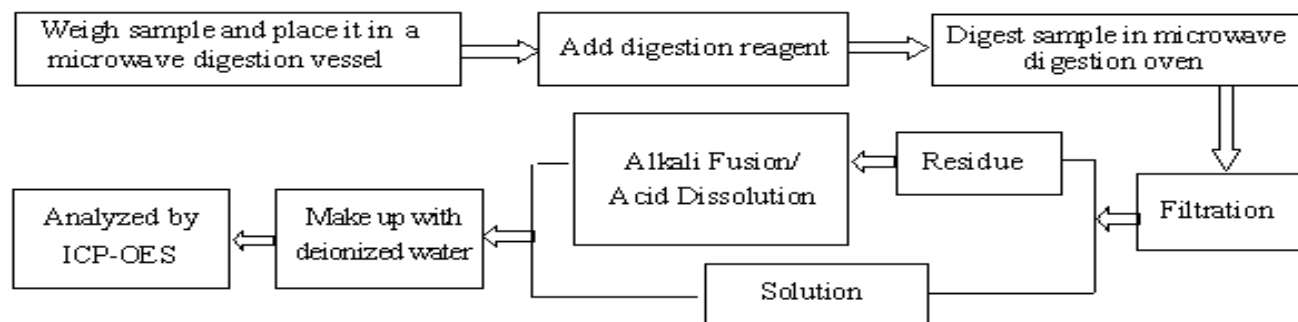
Page 5 of 7

Test Process

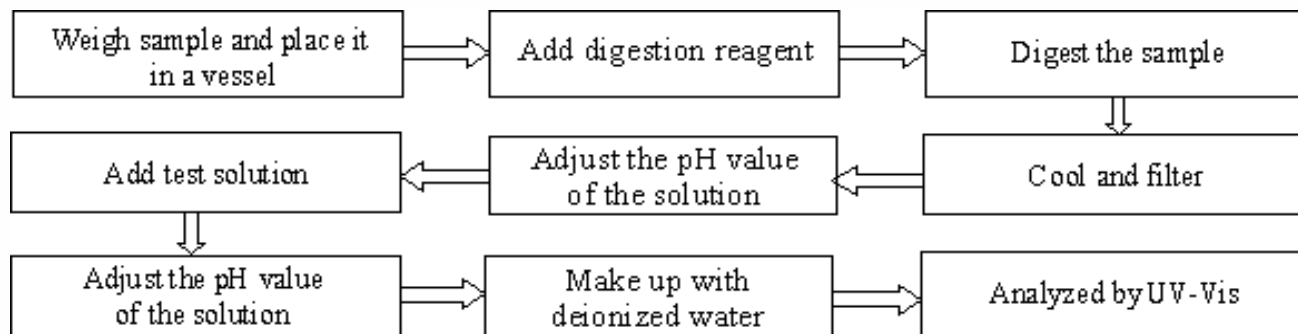
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



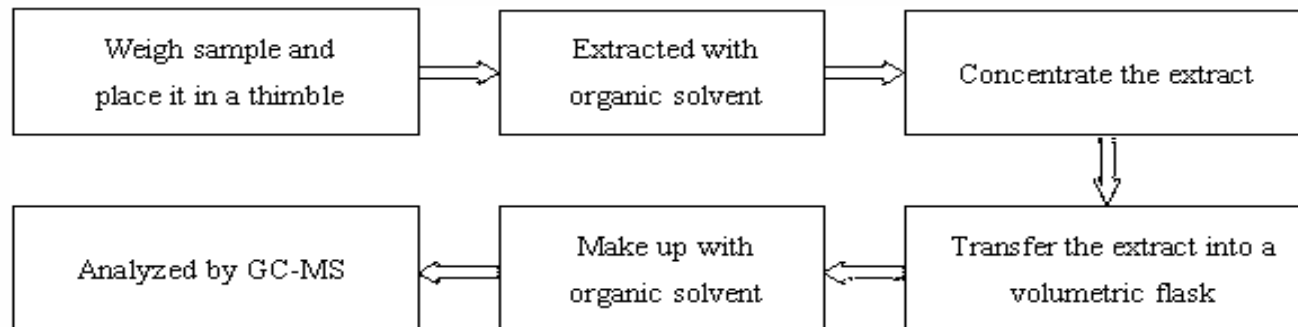
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

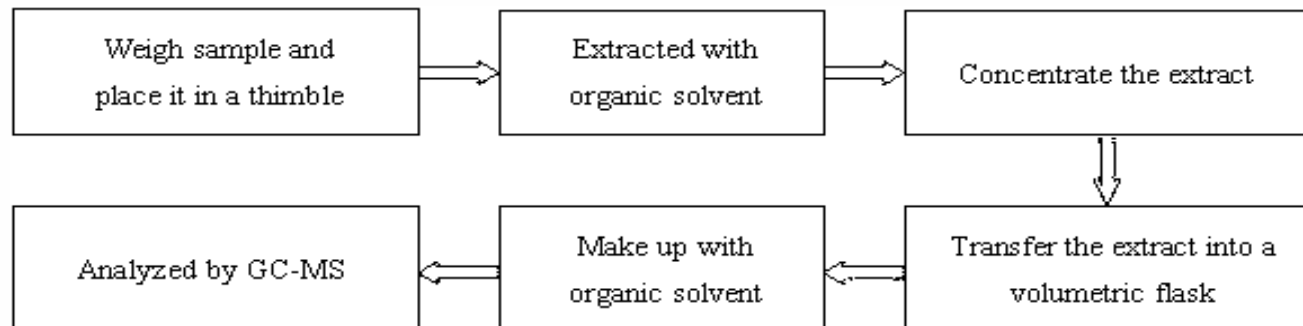


Test Report

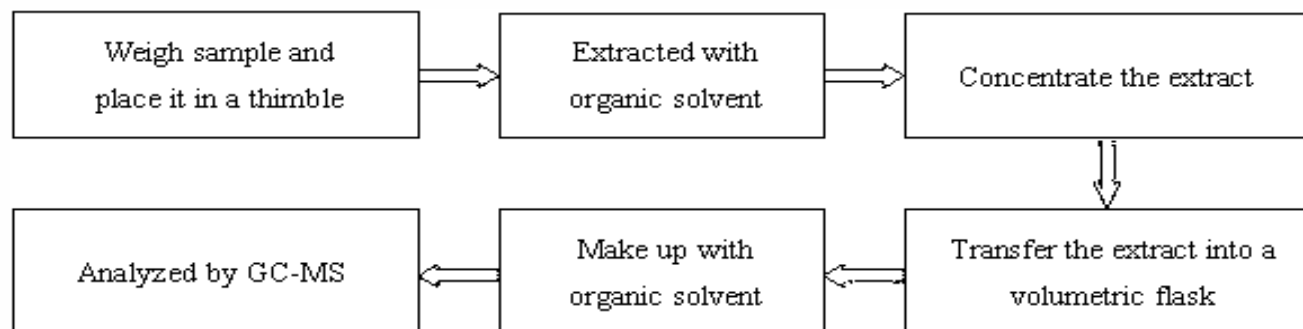
Report No. A2190175998101004

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

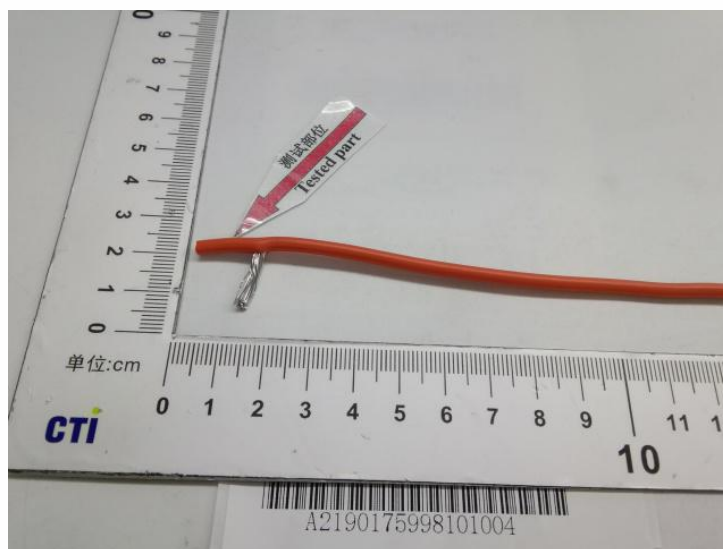


Test Report

Report No. A2190175998101004

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Photo(s) of the sample(s)



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3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101001

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name WHITE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101001

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101001

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101001

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	92 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description White wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

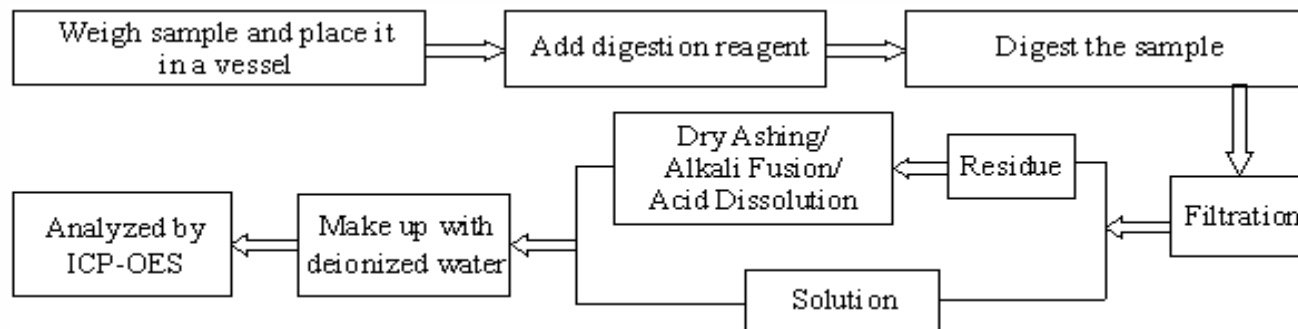
Test Report

Report No. A2190175998101001

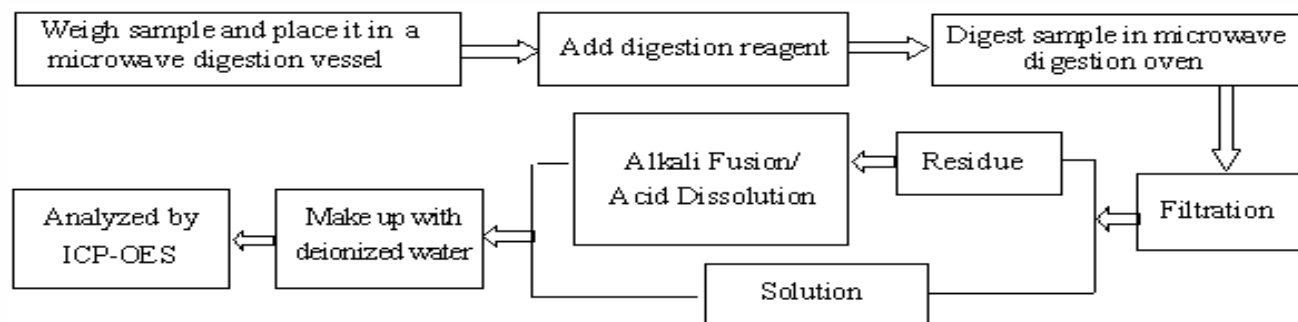
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Test Process

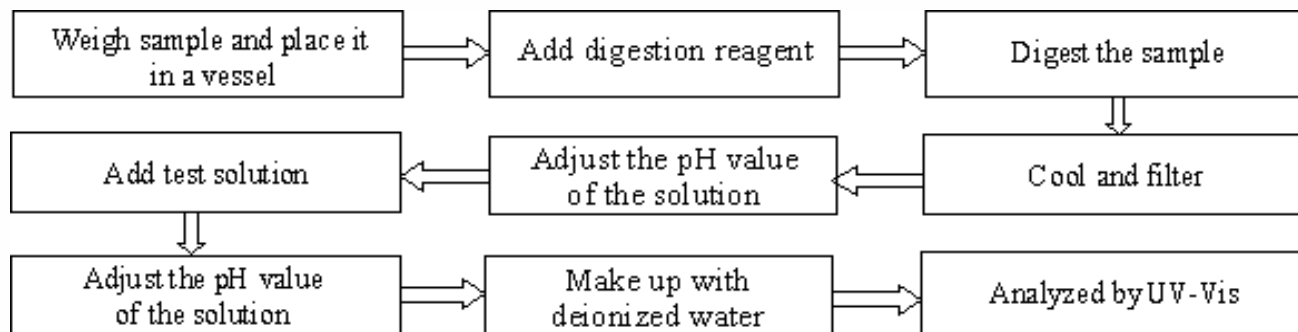
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



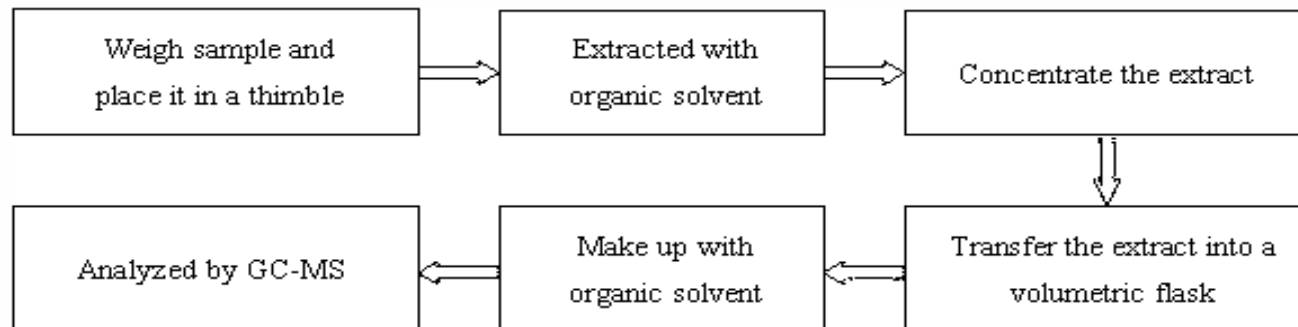
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

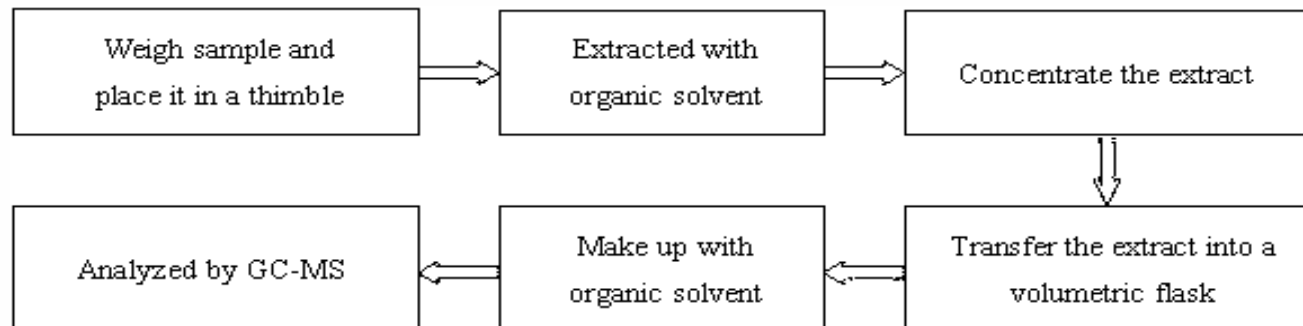


Test Report

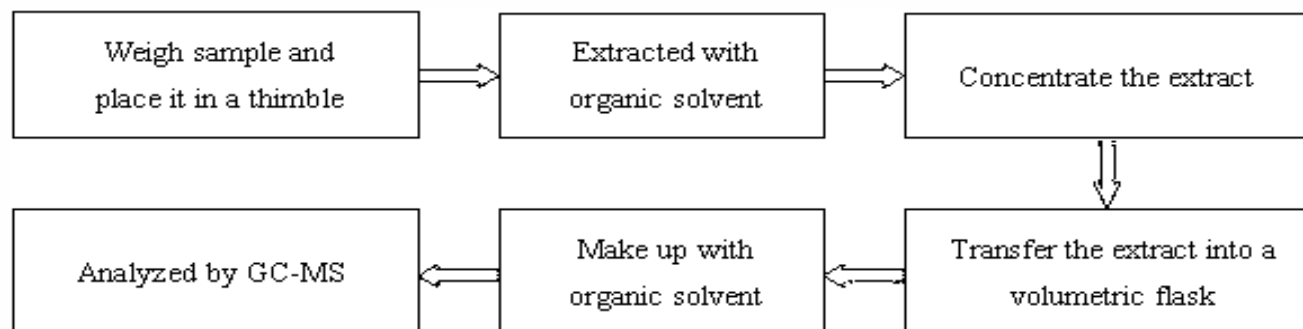
Report No. A2190175998101001

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101001

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report



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Report No. A2190175998101013

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name RED PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101013

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101013

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101013

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Red wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

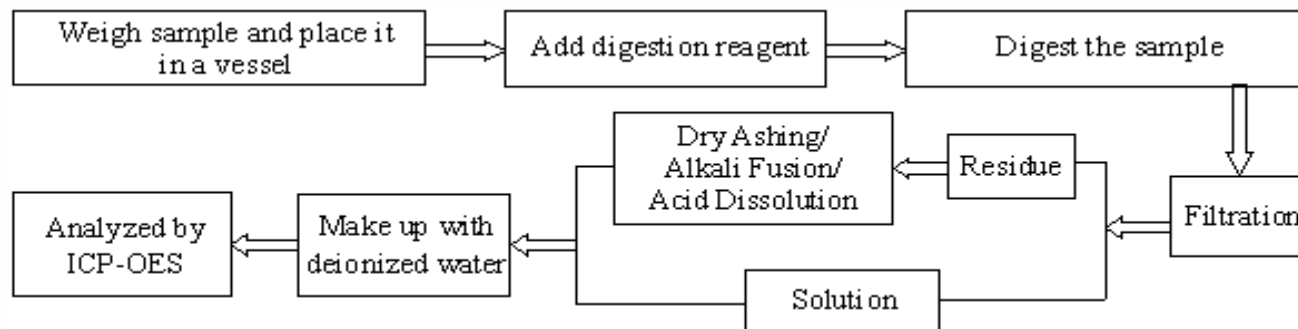
Test Report

Report No. A2190175998101013

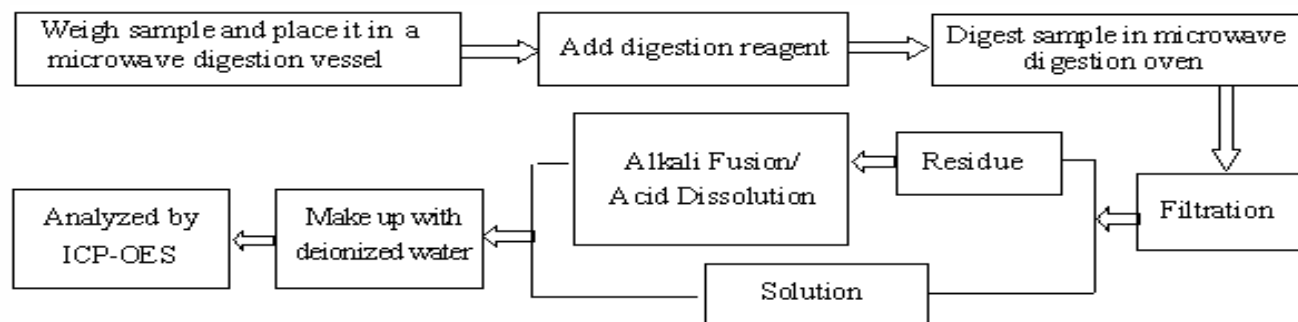
Page 5 of 7

Test Process

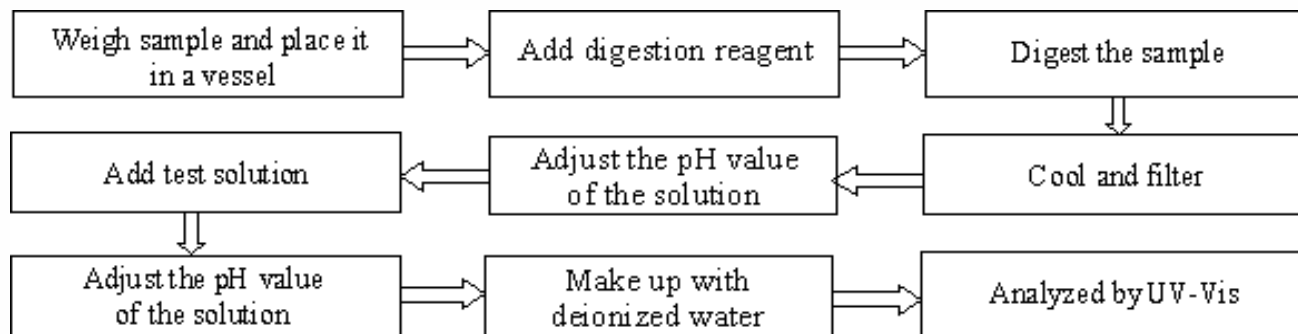
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



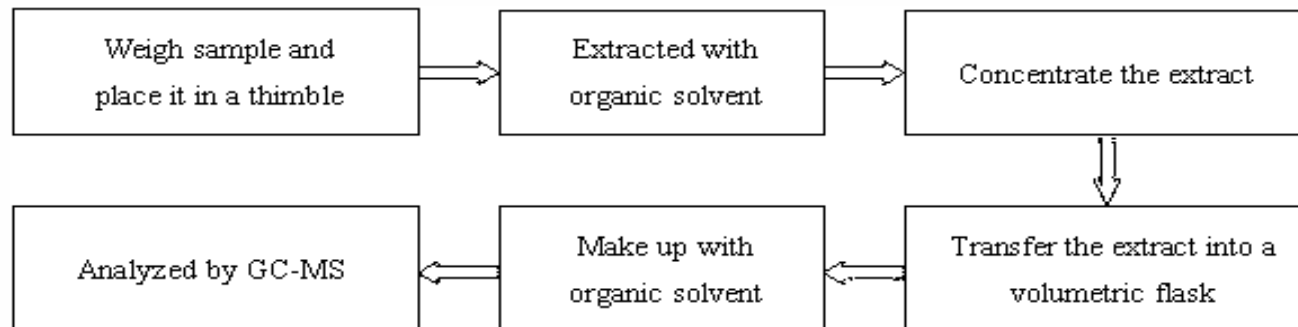
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

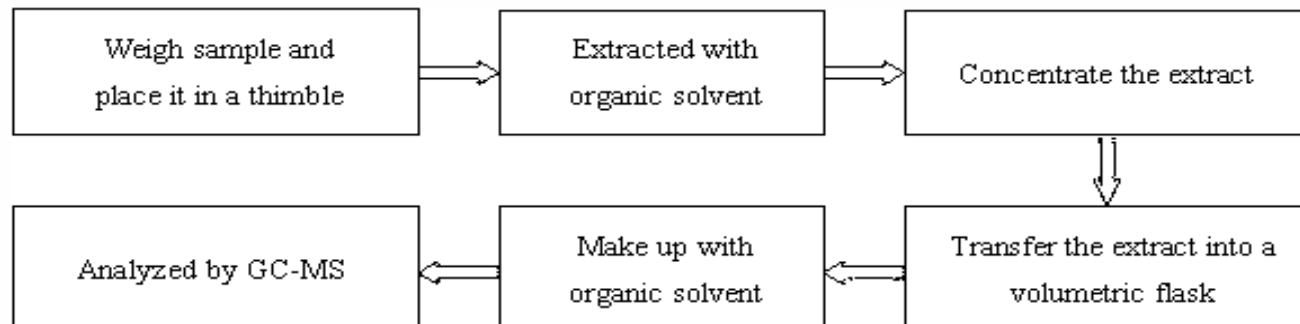


Test Report

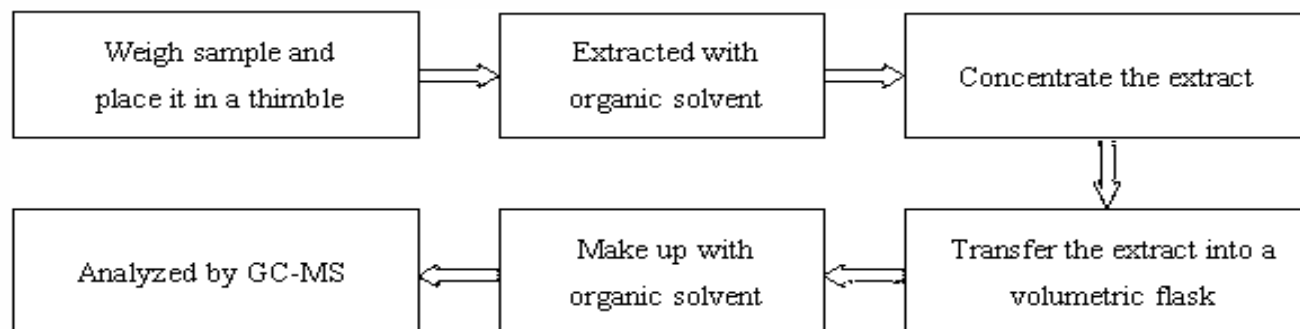
Report No. A2190175998101013

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

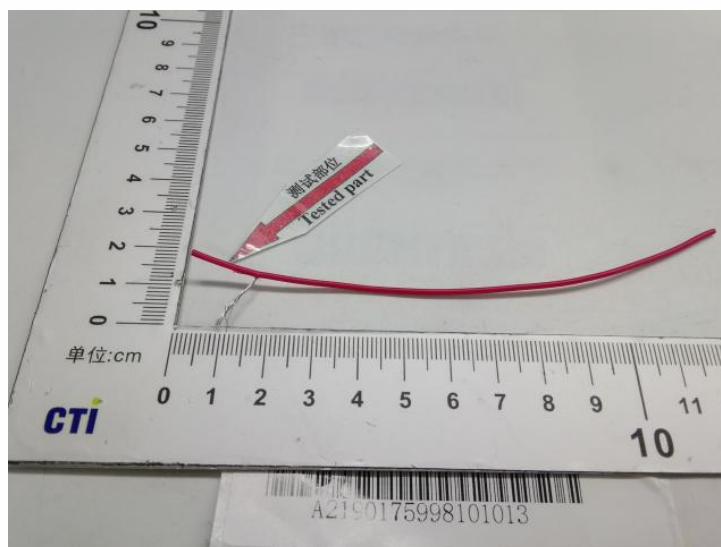


Test Report

Report No. A2190175998101013

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Photo(s) of the sample(s)



*** End of report ***

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3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101010

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLACK PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101010

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101010

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	138 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Black wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

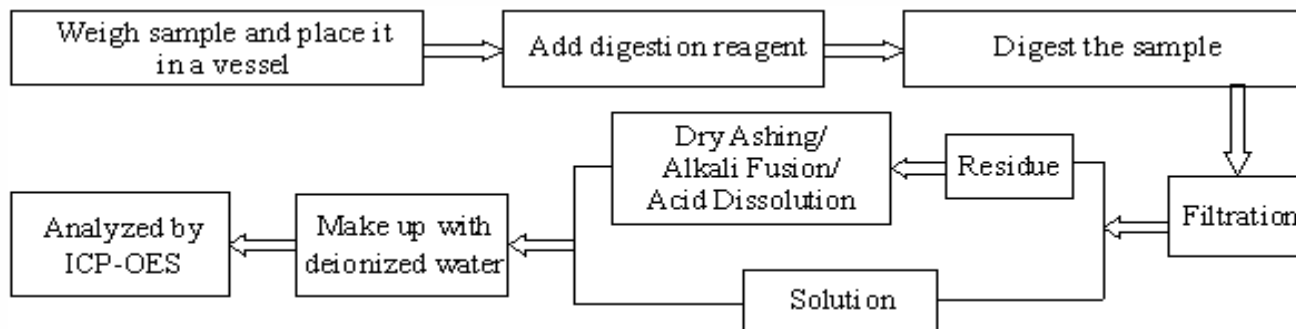
Test Report

Report No. A2190175998101010

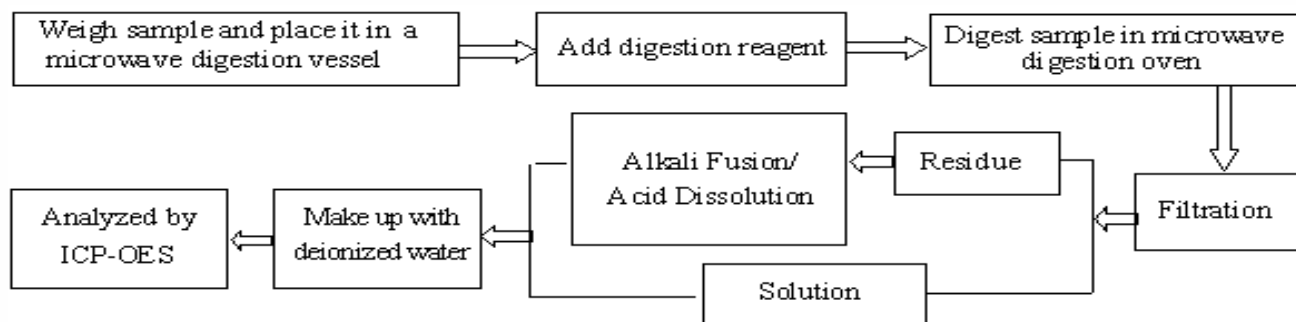
Page 5 of 7

Test Process

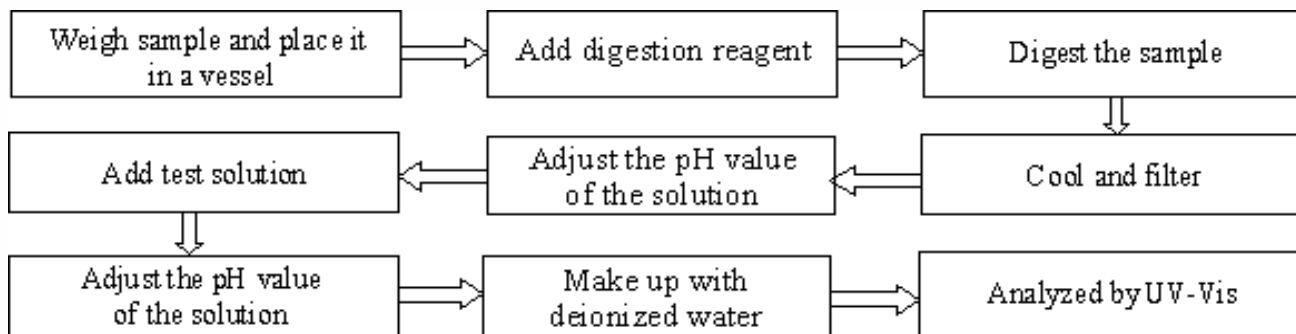
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



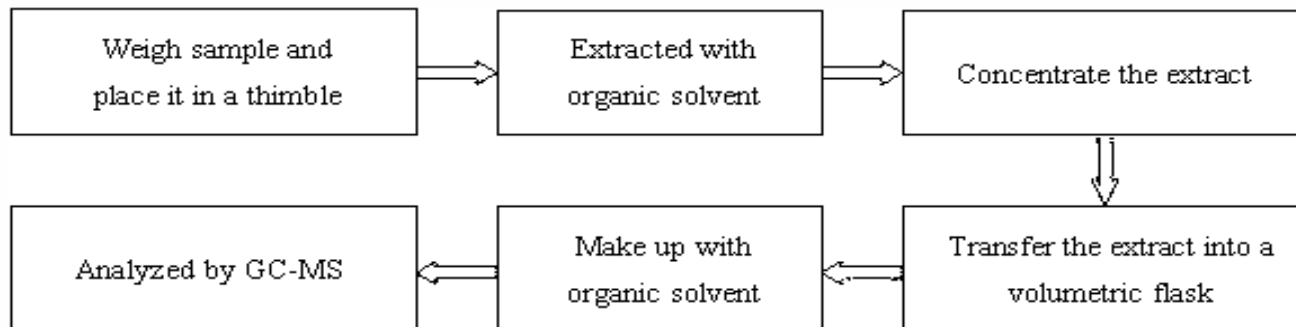
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

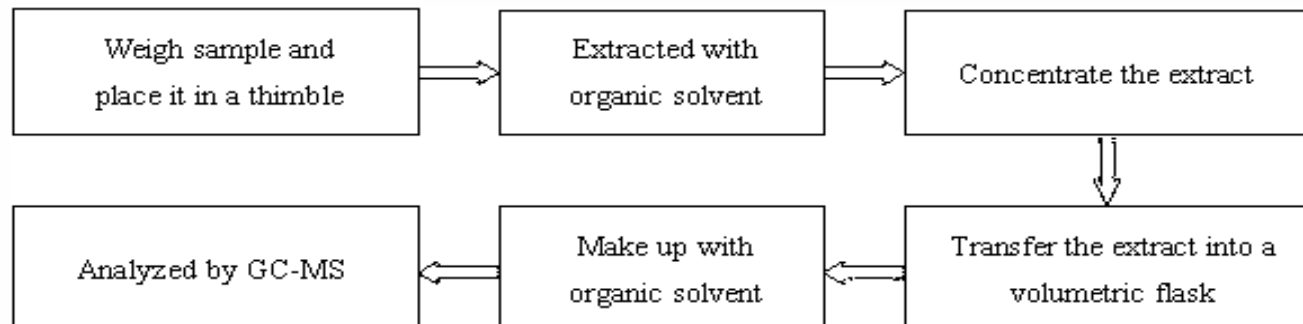


Test Report

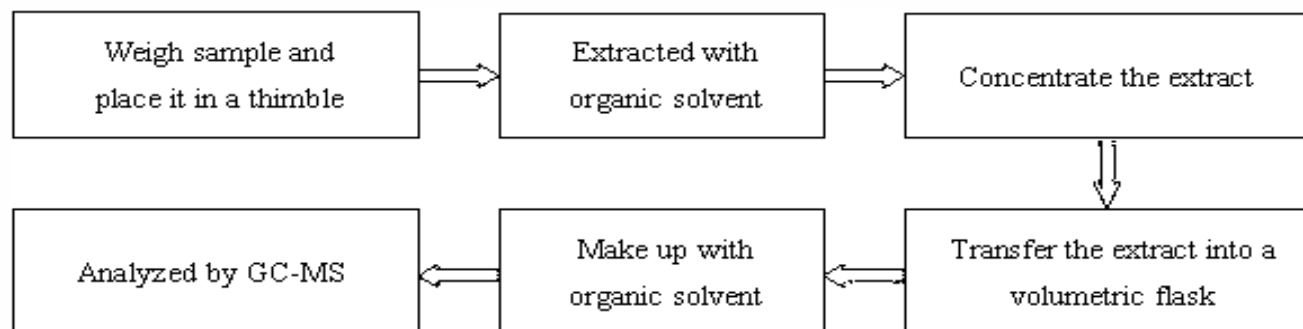
Report No. A2190175998101010

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

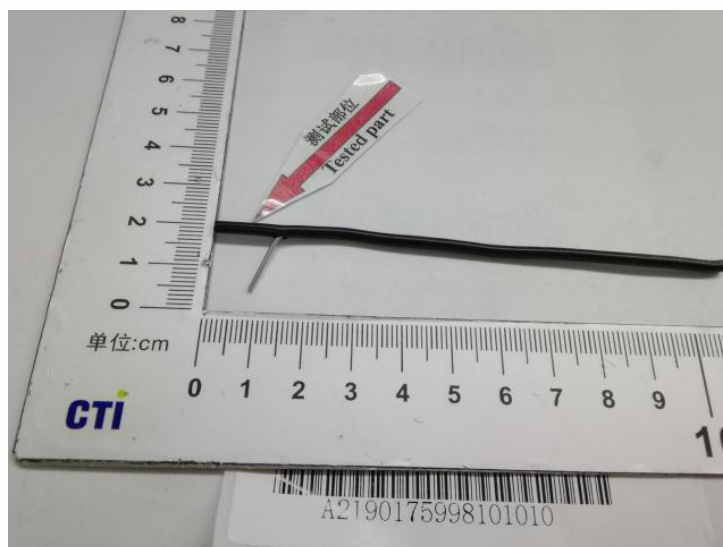


Test Report

Report No. A2190175998101010

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 1 of 7

DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.001	Copper colored metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Beryllium (Be)	mg/kg	5	ND



SGS-CSTC Shenzhen Branch Testing Center Chemical Laboratory

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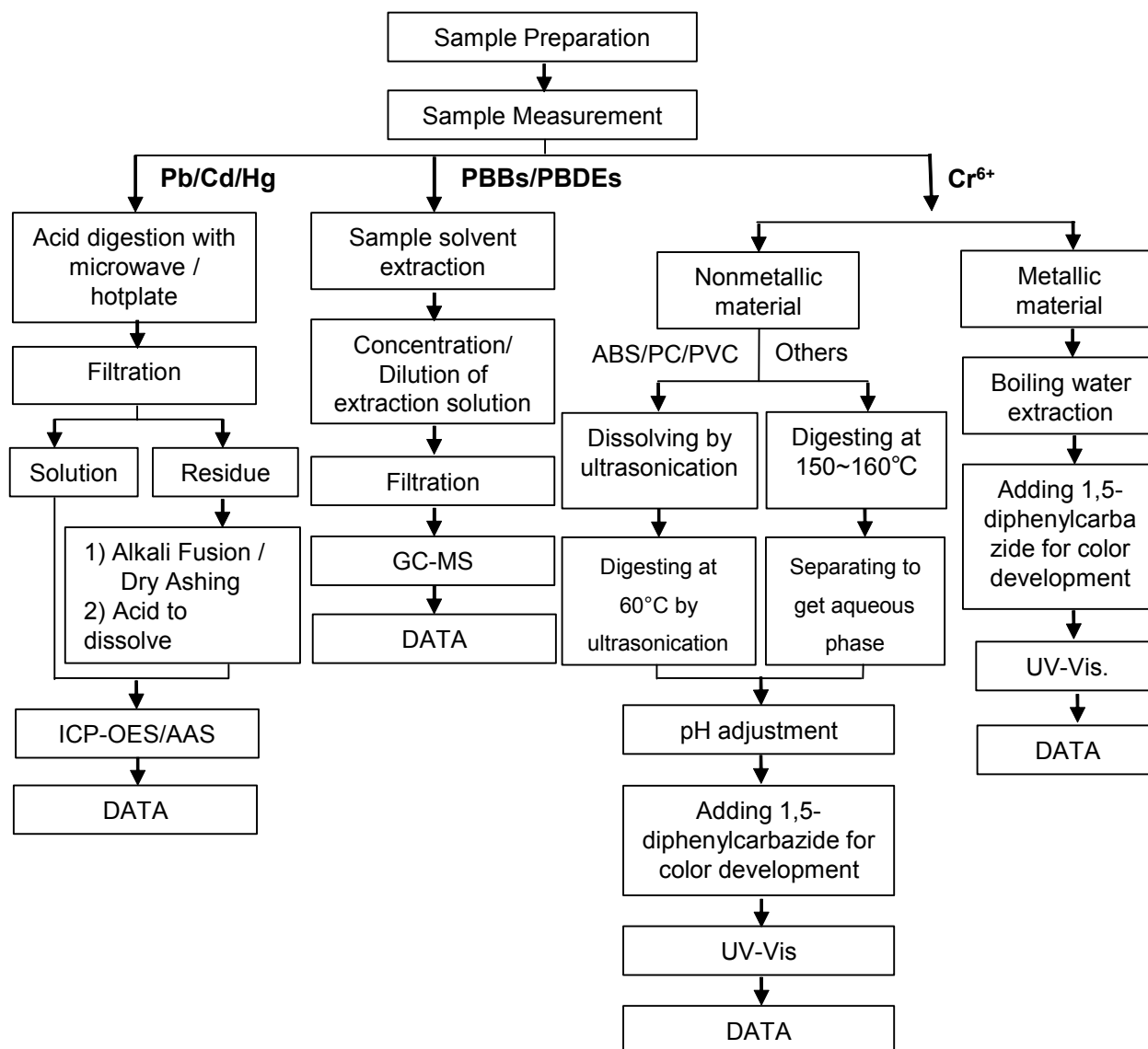
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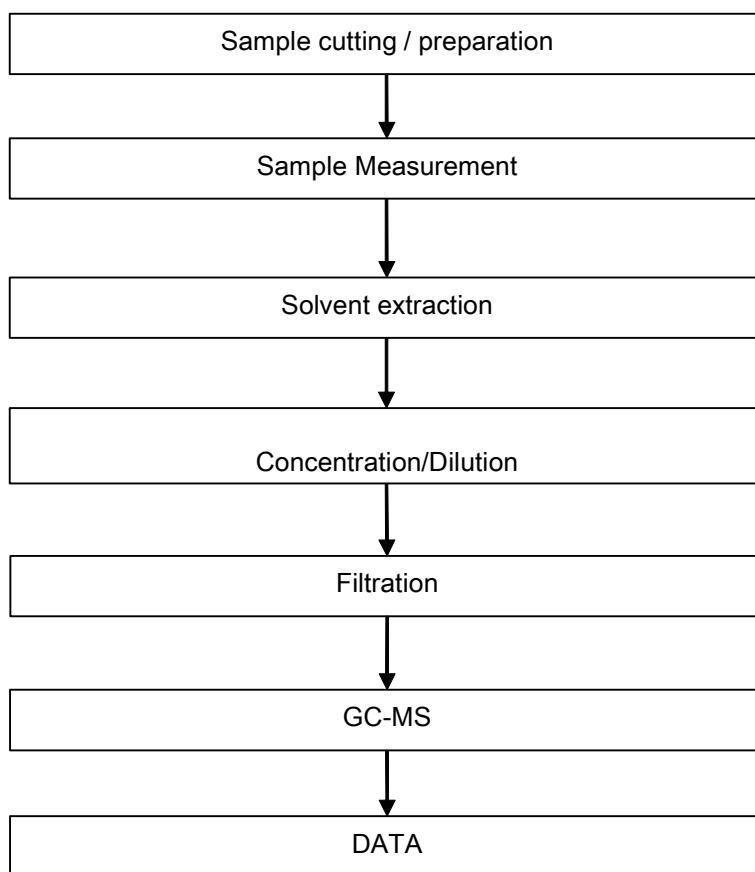
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



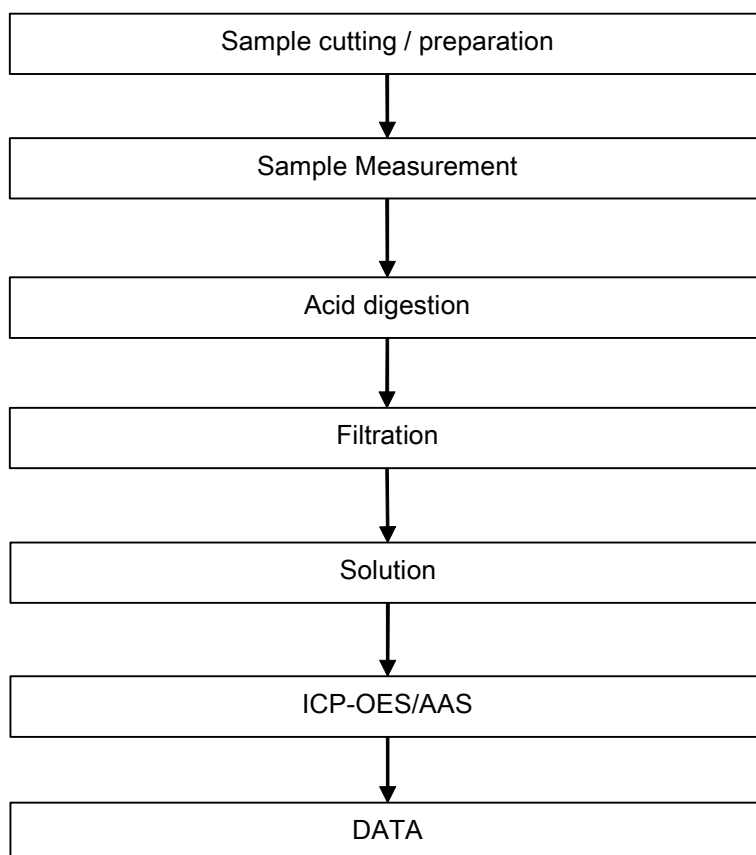
ATTACHMENTS

Phthalates Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



Test Report

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report (SVHC)

No. CANEC1904032403

Date: 21 Mar 2019

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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD
QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE,
TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety seven (197) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Additional One (1) Substances of Very High Concern (SVHC) identified by the notification of WTO on Feb 7, 2019.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.003	Copper colored metal wire(a)+silvery plated metal wire(b)

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



Test Report (SVHC)

No. CANEC1904032403

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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result:(Additional SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC	-	ND	-



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Test Report (SVHC)

No. CANEC1904032403

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. Add. = Additional identified SVHC
 10. Composite test has been performed in equal proportion for the components/material per client requested. And the result is calculated using the minimum sample weight.



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
Add.	198	4-tert-butylphenol (PTBP)	98-54-4	0.050



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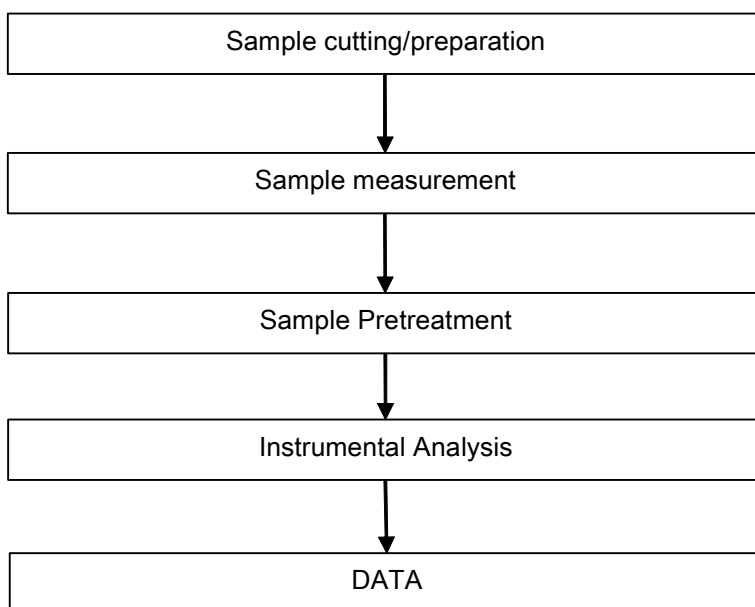
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ATTACHMENTS

SVHC Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.002	Silvery plated metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	002
Beryllium (Be)	mg/kg	5	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.



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 Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1904032402

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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

PFOS (Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	002
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

- (1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide,



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N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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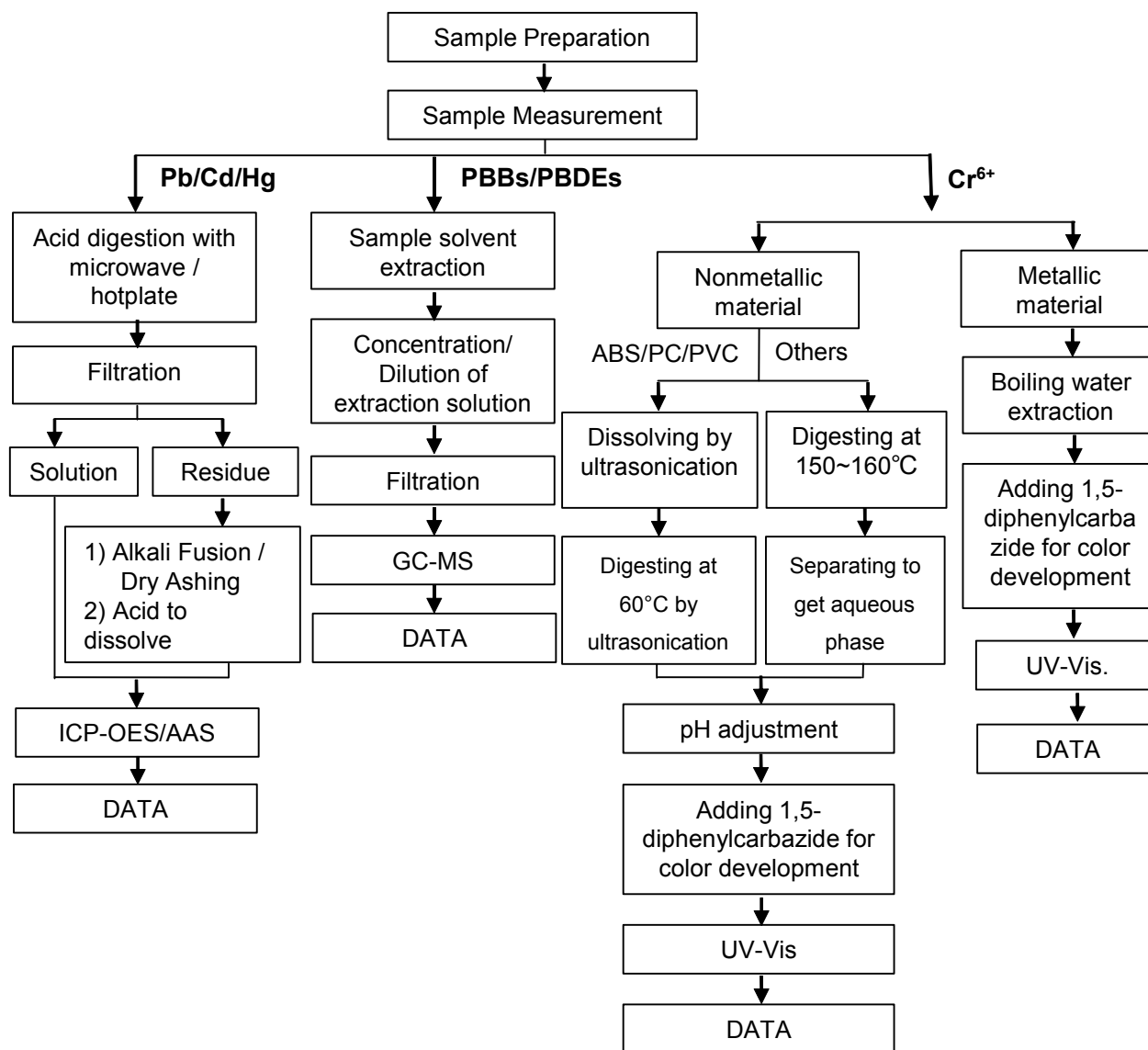
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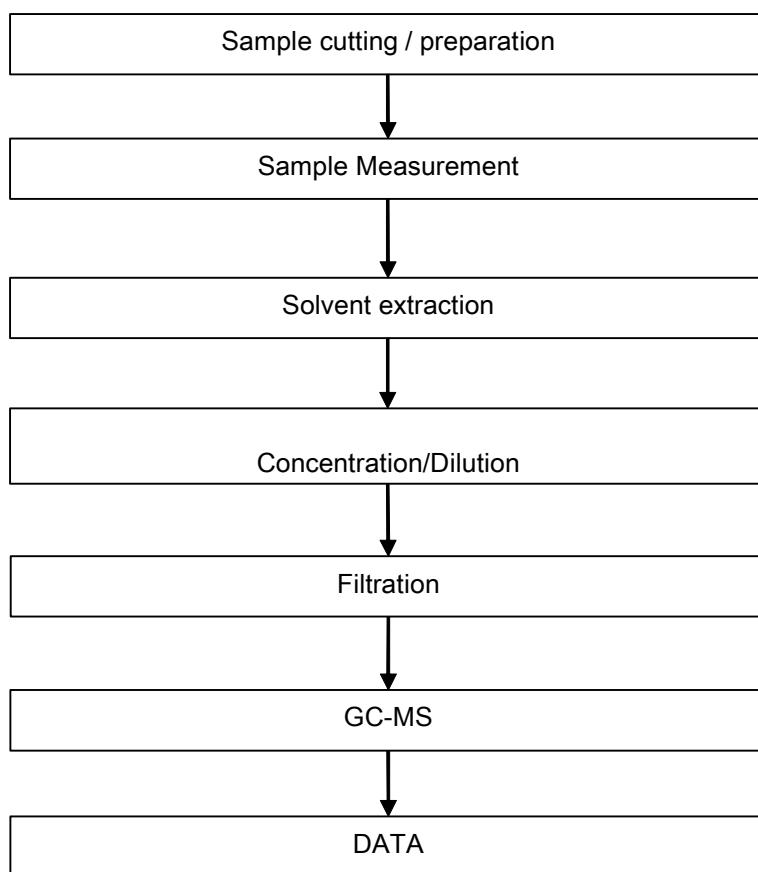
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



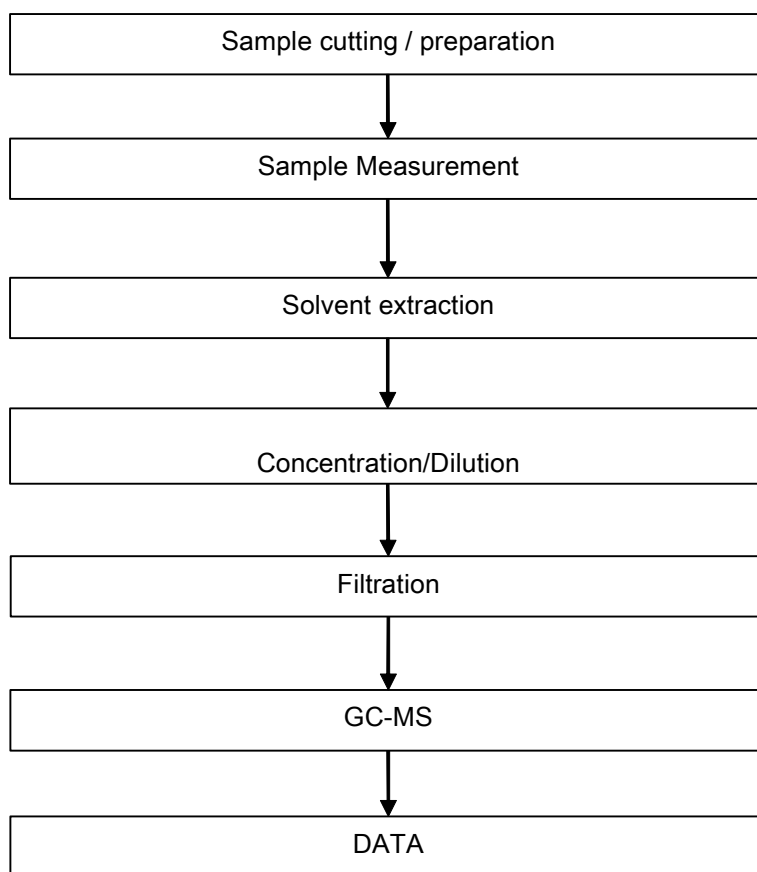
ATTACHMENTS

Phthalates Testing Flow Chart



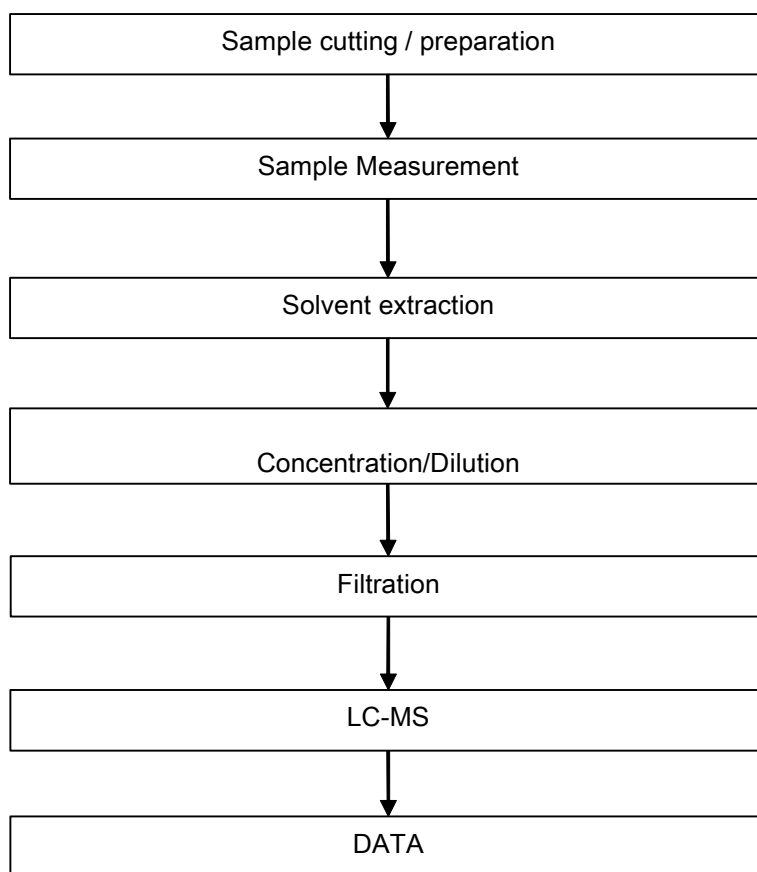
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PAHs Testing Flow Chart



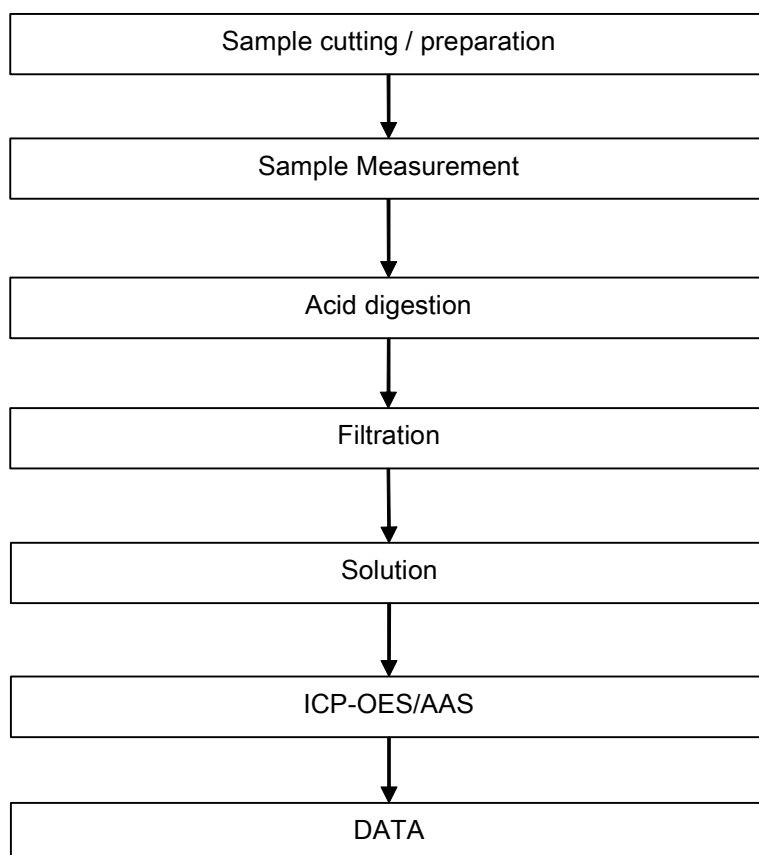
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PFOA / PFOS Testing Flow Chart



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Elementary Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report (SVHC)

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-02
Client Ref. Info. : I-PE-02;I-TPE-02;I-PP-02; I-PU-02; I-RU-02; I-TPR-02;I-PPE-02
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
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Test Report (SVHC)

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.001	Black liquid	6
SN2	CAN19-014883.004	Black liquid	181
SN3	CAN19-014883.007	Black liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	004 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	007 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	004
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	004
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	004
I	4	Anthracene	120-12-7	0.050	004
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	004
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	004
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	004
I	8	Cobalt dichloride*	7646-79-9	0.005	004
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	004
I	10	Diarsenic trioxide*	1327-53-3	0.005	004
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	004
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4, 3194-55-6	0.050	004
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	004
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	004
I	15	Triethyl arsenate*	15606-95-8	0.005	004
II	16	2,4-Dinitrotoluene	121-14-2	0.050	004
II	17	Acrylamide	79-06-1	0.050	004
II	18	Anthracene oil**	90640-80-5	0.050	004
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	004
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	004
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	004
II	23	Diisobutyl phthalate	84-69-5	0.050	004
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	004
II	25	Lead chromate*	7758-97-6	0.005	004
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	004
II	27	Pitch, coal tar, high temp. **	65996-93-2	0.050	004
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	004
III	29	Ammonium dichromate*	7789-09-5	0.005	004
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	004
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	004
III	32	Potassium chromate*	7789-00-6	0.005	004
III	33	Potassium dichromate*	7778-50-9	0.005	004
III	34	Sodium chromate*	7775-11-3	0.005	004
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	004
III	36	Trichloroethylene	79-01-6	0.050	004
IV	37	2-Ethoxyethanol	110-80-5	0.050	004
IV	38	2-Methoxyethanol	109-86-4	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	004
IV	40	Chromium trioxide*	1333-82-0	0.005	004
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	004
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	004
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	004
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	004
V	45	1,2,3-trichloropropane	96-18-4	0.050	004
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	004
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	004
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	004
V	49	2-ethoxyethyl acetate	111-15-9	0.050	004
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	004
V	51	Strontium chromate*	7789-06-2	0.005	004
VI	52	1,2-Dichloroethane	107-06-2	0.050	004
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	004
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	004
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	004
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	004
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	004
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	004
VI	60	Calcium arsenate*	7778-44-1	0.005	004
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	004
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	004
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	004
VI	64	Lead dipicrate*	6477-64-1	0.005	004
VI	65	Lead styphnate*	15245-44-0	0.005	004
VI	66	N,N-dimethylacetamide	127-19-5	0.050	004
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	004
VI	68	Phenolphthalein	77-09-8	0.050	004
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	004
VI	70	Trilead diarsenate*	3687-31-8	0.005	004
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	004
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	004
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	004
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	004
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	004
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	004
VII	78	Diboron trioxide*	1303-86-2	0.005	004
VII	79	Formamide	75-12-7	0.050	004
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	004
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	004
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	004
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	004
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	004
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	004
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	004
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	004
VIII	88	1-Bromopropane	106-94-5	0.050	004
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	004
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	004
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	004
VIII	93	4-Aminoazobenzene	60-09-3	0.050	004
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	004
VIII	95	4-Nonylphenol, branched and linear	-	0.050	004
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	004
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	004
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	004
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	004
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	004
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	004
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	004
VIII	103	Diethyl sulphate	64-67-5	0.050	004
VIII	104	Diisopentylphthalate	605-50-5	0.050	004
VIII	105	Dimethyl sulphate	77-78-1	0.050	004
VIII	106	Dinoseb	88-85-7	0.050	004
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	004
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	004



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VIII	109	Furan	110-00-9	0.050	004
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	004
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	004
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	004
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	004
VIII	114	Lead cyanamidate*	20837-86-9	0.005	004
VIII	115	Lead dinitrate*	10099-74-8	0.005	004
VIII	116	Lead monoxide*	1317-36-8	0.005	004
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	004
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	004
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	004
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	004
VIII	121	Methoxyacetic acid	625-45-6	0.050	004
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	004
VIII	123	N,N-dimethylformamide	68-12-2	0.050	004
VIII	124	N-Methylacetamide	79-16-3	0.050	004
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	004
VIII	126	o-Aminoazotoluene	97-56-3	0.050	004
VIII	127	o-Toluidine	95-53-4	0.050	004



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VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	004
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	004
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	004
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	004
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	004
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	004
VIII	134	Tetraethyllead*	78-00-2	0.005	004
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	004
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	004
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	004
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	004
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	004
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	004
IX	141	Cadmium oxide*	1306-19-0	0.005	004
IX	142	Cadmium*	7440-43-9	0.005	004
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	004
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	004
X	145	Cadmium sulphide*	1306-23-6	0.005	004
X	146	Dihexyl phthalate	84-75-3	0.050	004



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X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	004
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	004
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	004
X	150	Lead di(acetate)*	301-04-2	0.005	004
X	151	Trixylyl phosphate	25155-23-1	0.050	004
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	004
XI	153	Cadmium chloride*	10108-64-2	0.005	004
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	004
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	004
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	004
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	004
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	004
XII	159	Cadmium fluoride*	7790-79-6	0.005	004
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	004
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	004
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	004
XIV	164	1,3-propanesultone	1120-71-4	0.050	004
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	004
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	004
XIV	167	Nitrobenzene	98-95-3	0.050	004
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	004
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	004
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	004
XVI	171	4-Heptylphenol, branched and linear	-	0.050	004



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	004
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	004
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	004
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	004
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	004
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	004
XVIII	178	Cadmium carbonate*	513-78-0	0.005	004
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	004
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	004
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	004
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	007
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	007
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	007
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	007
XIX	186	Disodium octaborate*	12008-41-2	0.005	007



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	007
XIX	188	Ethylenediamine	107-15-3	0.050	007
XIX	189	Lead*	7439-92-1	0.005	007
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	007
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	007
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	001
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	001
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	001
XX	195	Fluoranthene	206-44-0	0.050	001
XX	196	Phenanthrene	85-01-8	0.050	001
XX	197	Pyrene	129-00-0	0.050	001



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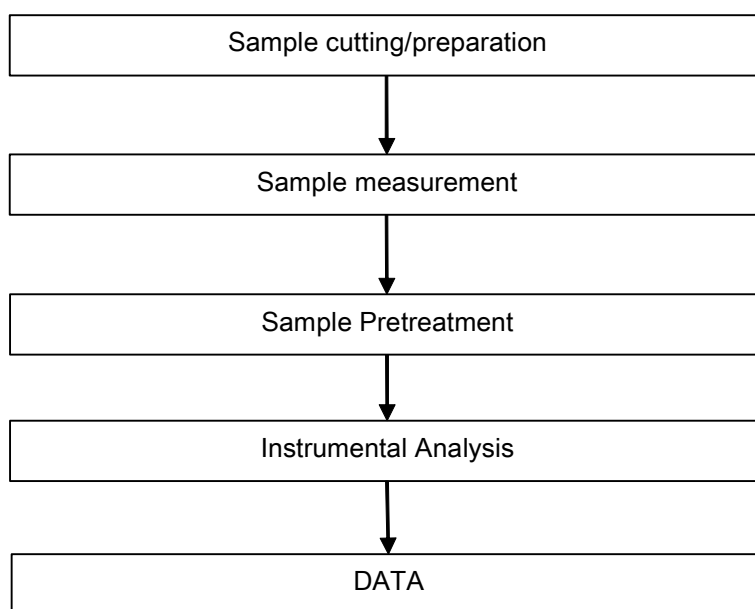
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SVHC Testing Flow Chart



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Sample photo:



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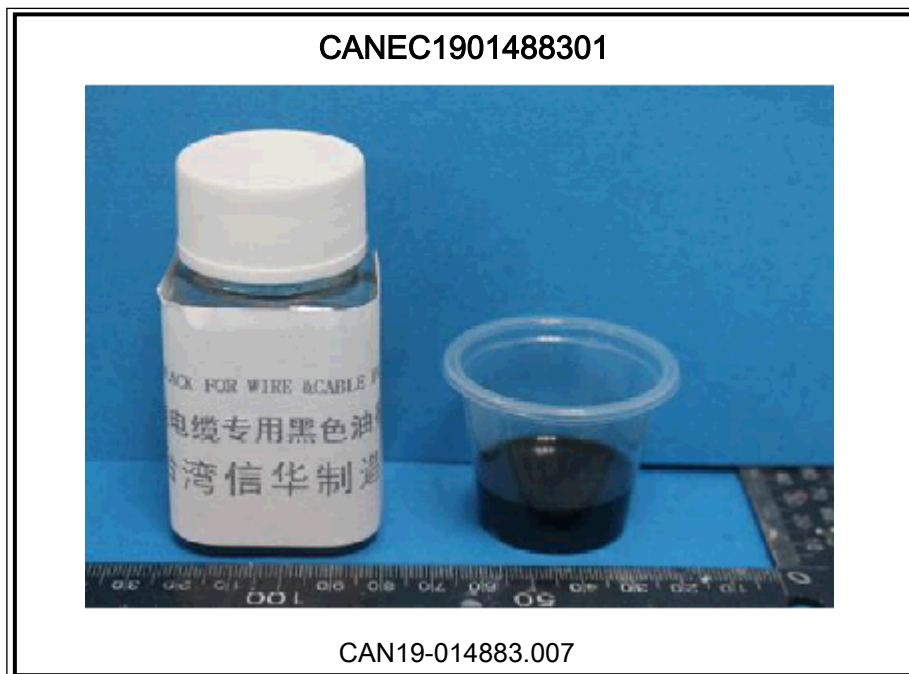
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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-01

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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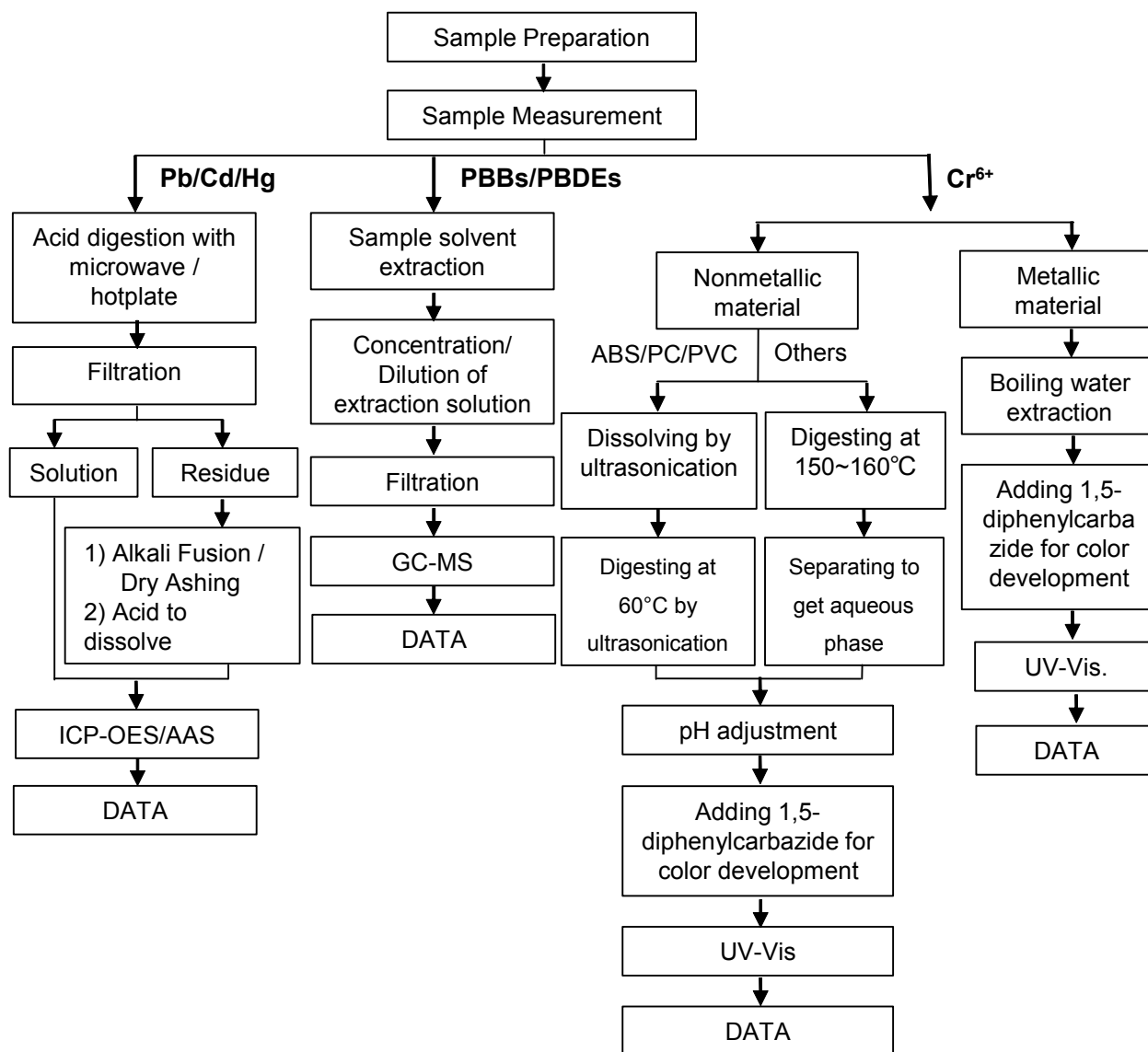
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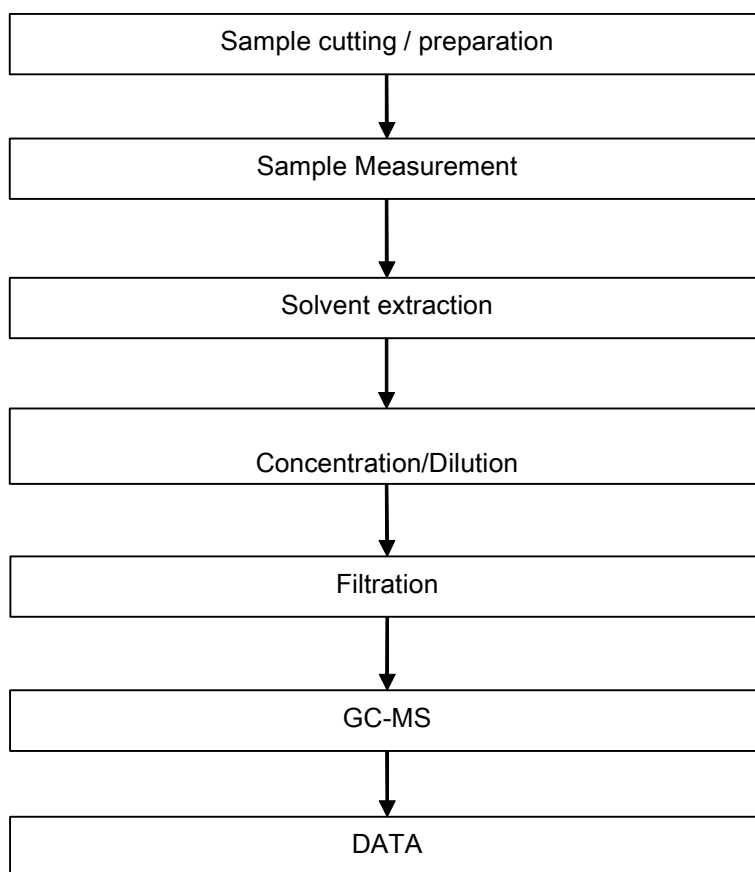
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

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Sample photo:

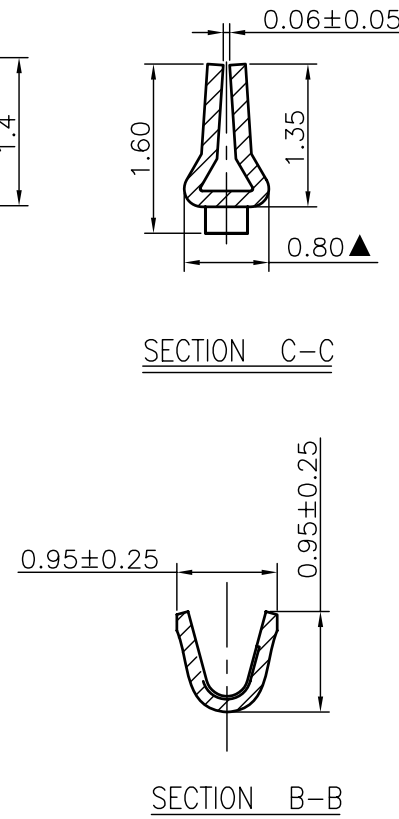
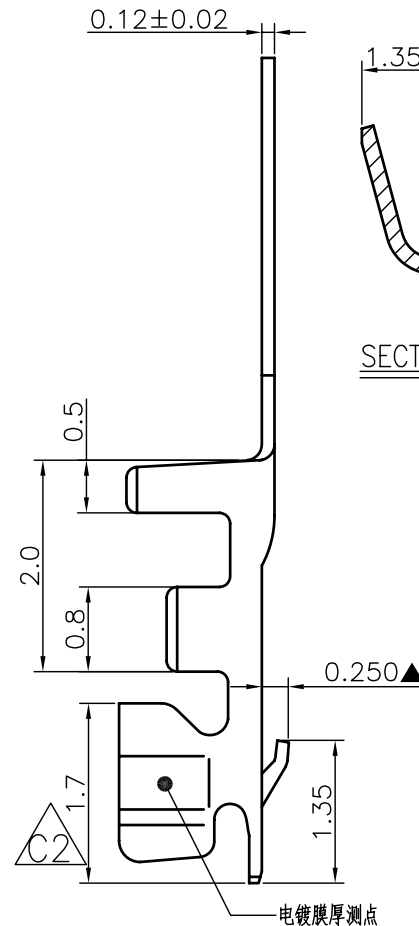
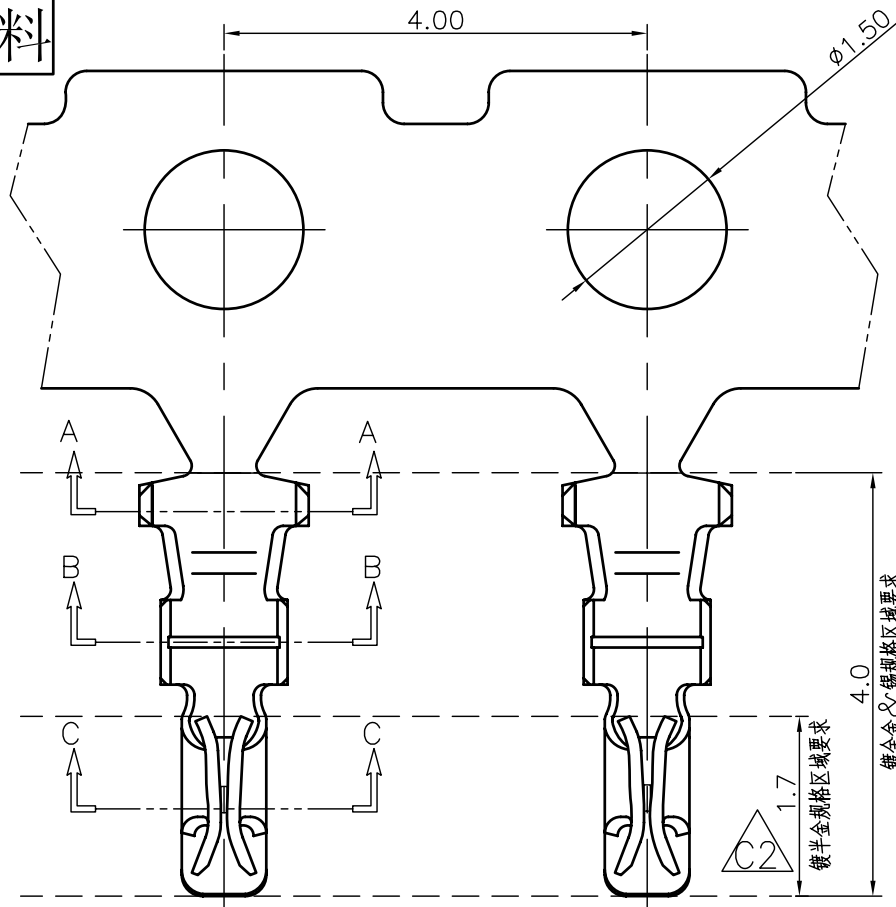


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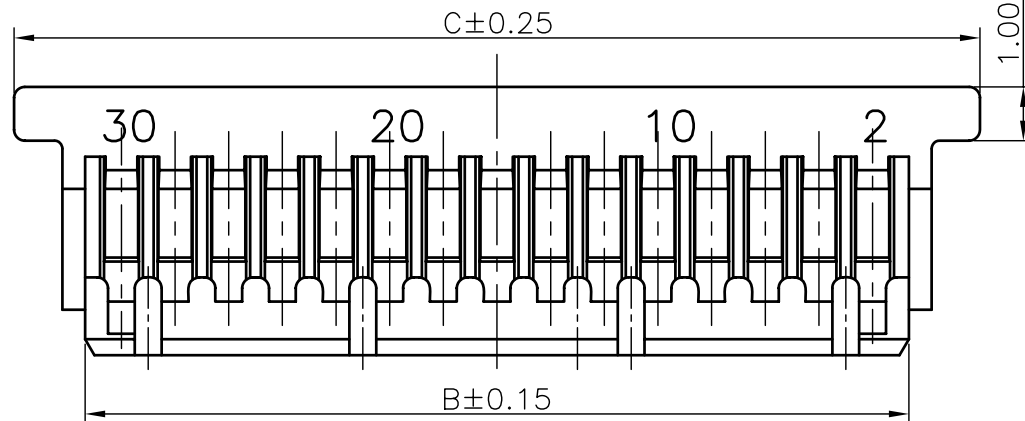
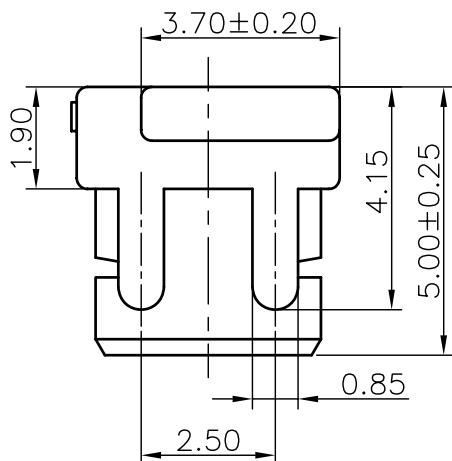
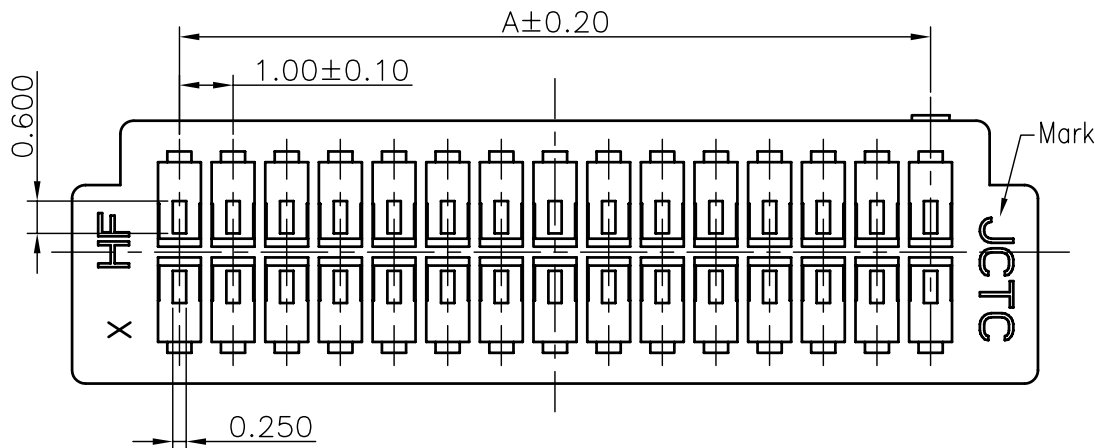
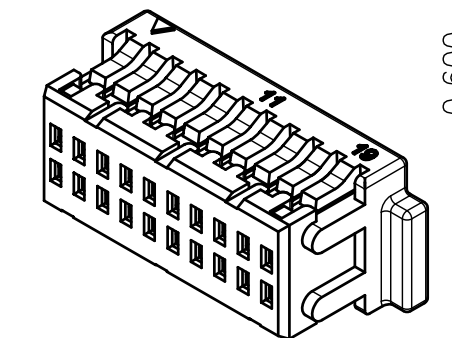
Options	Part No	Wire Range	Insulation O.D.	Material	Finish	Qty/reel
1	11002TOP-2E-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Tin-plated 80μ"Min	2,0000 PCS
2	11002TOP-5X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Overall.	2,0000 PCS
3	11002TOP-0X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Contact Area.	2,0000 PCS

Note:11002TOP-XX-S-NK

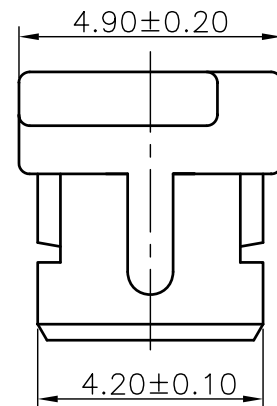
0A--Gold-flash 0B--2μ" 0C--3μ" 0D--4μ" 0E--5μ" 5A--Gold-flash 5B--2μ" 5C--3μ" 5D--4μ" 5E--5μ"
0F--10μ" 0G--15μ" 0H--30μ" 0I--50μ" 5F--10μ" 5G--15μ" 5H--30μ" 5I--50μ"

C3	11.05.31	TR1105310082	EAST	唐海江	一般公差 GENERAL TOLERANCE	绘图 DR.	EAST	JCTC 东莞市胜蓝电子有限公司 富 强 电 子 厂	料号 PART NO. 11002TOP-XX-S-NK
C2	10.08.05	TR1007270049	EAST	唐海江	X.X ±0.25 X' ±5° X.XX ±0.15 X.X' ±2° X.XXX ±0.08 ▲ MAJOR DIM.	校对 CHK.	唐海江		文件编号 NUMBER ENDE05
C1	09.12.21	修改电镀码料号,增加Mark码	EAST	唐海江	单位 UNIT	审核 CHK.	梁友连		比例 SCALE
C0	09.12.09	换图框发行	EAST	唐海江	mm	核准 APPD.	王志刚		SHEET 1/1
版次 REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.					版次 REV. C3

环保物料



Dimensional Ordering Information:			
Circuits Part No	Dimensions		
	A	B	C
2x5P	4.00	5.35	8.00
2x6P	5.00	6.35	9.00
2x8P	7.00	8.35	11.00
2x9P	8.00	9.35	12.00
2x10P	9.00	10.35	13.00
2x12P	11.00	12.35	15.00
2x15P	14.00	15.35	18.00
2x17P	16.00	17.35	20.00
2x18P	17.00	18.35	21.00
2x20P	19.00	20.35	23.00
2x25P	24.00	25.35	28.00



Specifications:

Rated Voltage : 50V AC/DC

Rated Current : 1A AC,DC

Withstand Voltage : 500V AC/minute

Contact Resistance : 20mΩ(MAX.)

Insulation Resistance : 100MΩ(MIN.)

Temperature Range : -25°C~+85°C

11002H00-2XNPX-HF-NK
① ② ③ ④ ⑤ ⑥

① Series No.

② H90 : Side Contact

H00 : Up Contact

③ No. of Circuits

④ A: Product color (A--Y)

Blank : Natural type

⑤ HF : Halogen Free

⑥ Blank: Mark NK: No Mark

Suitable for JCTC 11002 series terminal

Part No.	Material	Color
11002H00-2XNP	PBT,UL94V-0	Natural(White)
11002H00-2XNP-NK	PBT,UL94V-0	Natural(White)
11002H00-2XNP-HF	Nylon 66,UL94V-0	Natural(White)
11002H00-2XNP-HF-NK	Nylon 66,UL94V-0	Natural(White)
11002H00-2XNPA-HF	Nylon 66,UL94V-0	Natural(Black)
11002H00-2XNPM-HF	Nylon 66,UL94V-0	Natural(Beige)

版次REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.
C2	12.05.08	新增规格	龚友连	王志刚
C1	11.05.18	新增黑色无卤料号	龚友连	王志刚
C0	09.11.20	换图框发行	龚友连	王志刚

一般公差 GENERAL TOLERANCE			
X.X	±0.25	X'	±5'
X.XX	±0.15	X.X'	±2'
X.XXX	±0.08	▲ MAJOR DIM.	
单位 UNIT	mm		

绘图 DR.	陈 干
校对 CHK.	欧阳小强
审核 CHK.	龚友连
核准 APPD.	王志刚

JCTC 东莞市胜蓝电子有限公司
TERMINAL & CONNECTORS 富强电子厂

品名 TITLE

JST 1.00mm PITCH 双排 HOUSING

料号 PART NO.		
11002H00-2XNPX-XX-XX		
文件编号 NUMBER		
ENDE05		
比例 SCALE	SHEET	版次 REV.
1/1	1/2	C2

**ECBT2.E338796****Connectors for Use in Data, Signal, Control and Power Applications - Component**[Page Bottom](#)**Connectors for Use in Data, Signal, Control and Power Applications - Component**[See General Information for Connectors for Use in Data, Signal, Control and Power Applications - Component](#)**DONGGUAN CITY SHENGLAN ELECTRONICS CO LTD**

E338796

Hexin Rd

Shatou District

Changan

Dongguan, Guangdong 523846 CHINA

Connectors, Model(s) Cat. No. 11002H00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 17, 18, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W90, follow by -2X, follow by 5, 6, 8, 9, 10, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11004H, followed by -2x10 or -2x15, followed by PL.

Cat. No. 11006H00, followed by -2X10, -2X15 or -2X20, followed by P.

Cat. No. 11252H, followed by -2x, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11252W, followed by -2X, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11253H, followed by -20 or -30, followed by P.

Cat. No. 11253W, followed by -20 or -30, followed by P.

Cat. No. 11258H00, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow A thru Z or 1 thru 9.

Cat. No. 11258W90, follow by -S, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 11500H00, followed by -2 thru -15, followed by P.

Cat. No. 11500W00, followed by -2 thru -15, followed by P.

Cat. No. 12002H00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W90, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12003H, followed by -2x, followed by 2 thru 17, followed by P.

Cat. No. 12009H00, followed by -2X2, -2X3 or -2X4, followed by P.

Cat. No. 12504H00, followed by -2 thru -15, followed by P, followed by -L.

Cat. No. 12505H00, followed by -2 thru -15 or -20, followed by P.

Cat. No. 12505W00, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12505W90, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12541H, followed by -2x, followed by 1 thru 20, followed by P.

Cat. No. 12543H, followed by -2 thru -20, followed by P.

Cat. No. 12547H00, followed by -3 thru -8, followed by P.

Cat. No. 13502W90, followed by -2P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 13962H00, 13962W00 and 13962W90, followed by -2P thru -10P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 22001H, followed by -2 thru -16, followed by P.

Cat. No. 22501H, followed by -2 thru -14, followed by P.

Cat. Nos. 10500H and 10500W, followed by -41 or -51, followed by P.

Cat. Nos. 11001H and 11001W, followed by -30, followed by P.

Cat. Nos. 11002H and 11002W, followed by -2 thru -20, followed by P.

Cat. Nos. 11003H and 11003W, followed by -2 thru -30, followed by P.

Cat. Nos. 11005H and 11005W, followed by -2X, followed by 2 thru 25, followed by P.

Cat. Nos. 11251H and 11251W, followed by -2 thru -15, followed by P.

Cat. Nos. 11254H00, 12006H, 12006W, 12504H and 12504W, followed by -2 thru -15, followed by P.

Cat. Nos. 11255H, 11255W, 11256H and 11256W, followed by -2 thru -30, followed by P.

Cat. Nos. 11257H, follow by -4 thru -15, followed by PL.

Cat. Nos. 11257W, 12503H00 and 12503W00, follow by -2 thru -15, followed by P.

Cat. Nos. 11501H and 11501W, followed by -2 thru -13, followed by P.

Cat. Nos. 11501H00 and 11501W00, followed by -14 or -15, followed by P.

Cat. Nos. 12001H and 12001W, followed by -2 thru -16, followed by P.

Cat. Nos. 12002H and 12002W, followed by -2x, followed by 2 thru 15, followed by P.

Cat. Nos. 12004H, 12004W and 12005W, follow by -2 thru -16, followed by P.

Cat. Nos. 12005H, follow by -2 thru -16, followed by PL.

Cat. Nos. 12501H and 12501W, followed by -2 thru -16, followed by P.

Cat. Nos. 12502H and 12502W, followed by -2 thru -15, followed by P.

Cat. Nos. 50801H and 50801W, follow by -2 thru -24, followed by P.

Cat. Nos. 51274H-7P and 51275H-7P.

Marking: Company name and model designation on the device or carton.

Last Updated on 2014-04-25

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Test Report

No. CANEC1917598907

Date: 17 Sep 2019

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Nylon 66 UL 94V-0 Natural color housing

SGS Job No. : CP19-049304 - SZ
 Tested Sample Info. : Nylon 66 UL 94V-0 Natural color housing
 Client Ref. Info. : PLEASE SEE REMARK
 Date of Sample Received : 05 Sep 2019
 Testing Period : 05 Sep 2019 - 17 Sep 2019
 Test Requested : Selected test(s) as requested by client.
 Test Method : Please refer to next page(s).
 Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS
Elementary Analysis	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
Red Phosphor	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Phthalate	See Results
Phthalate(s)	See Results
European Regulation POPs (EU) 2019/1021- Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	PASS
PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)	See Results



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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Jessie Li

Jessie Li
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-175989.003	White material

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Item(s)	Limit	Unit	MDL	003
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	003
Antimony (Sb)	mg/kg	10	ND
Tin (Sn)	mg/kg	5	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, with reference to US EPA Method 3540C:1996), analysis was performed by GC-MS&HPLC-MS.

Test Item(s)	Unit	MDL	003
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Red Phosphor



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Test Method : SGS In-house method (GZTC CHEM-TOP-215-01), analysis was performed by PY-GC/MS/ICP-OES.

Test Item(s)	Unit	MDL	003
Red phosphorus	mg/kg	500	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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Guangzhou Branch Testing Center Chemical Laboratory

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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to US EPA Method 3550C: 2007), analysis was performed by GC-MS.

Test Item(s)

Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)

Unit MDL 003
mg/kg 10 ND



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Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Di(2-ethylhexyl)adipate (DEHA)	103-23-1	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	%(w/w)	0.01	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.01	ND
Di-n-heptyl Phthalate (DnHpP)	3648-21-3	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND

Notes :

(1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:

i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.

ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.



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In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.

iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

Phthalate(s)

Test Method : With reference to SGS in house method (SGS-CCL-TOP-042-41) , analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Phthalic acid, mono-2-ethylhexyl ester(MEHP)	4376-20-9	%(w/w)	0.003	ND

European Regulation POPs (EU) 2019/1021– Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	1500	mg/kg	50	ND
Comment				PASS
Alkanes C14-C17, chloro (medium -chain chlorinated paraffins) (MCCPs)	-	mg/kg	50	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS / GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.01	ND
Perfluorooctane Sulfonates (PFOS)^		mg/kg	0.01	ND



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Notes :

(1) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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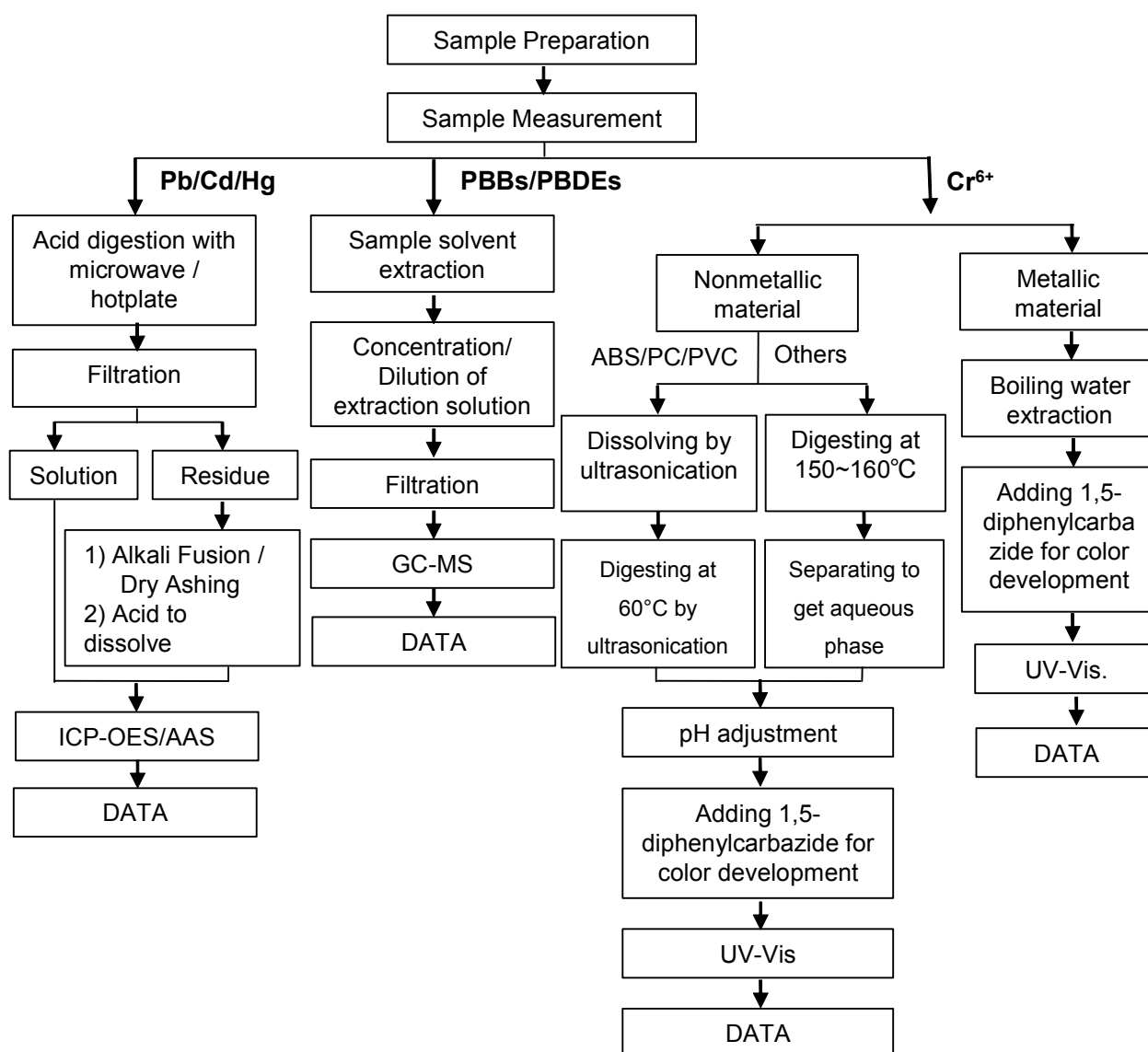
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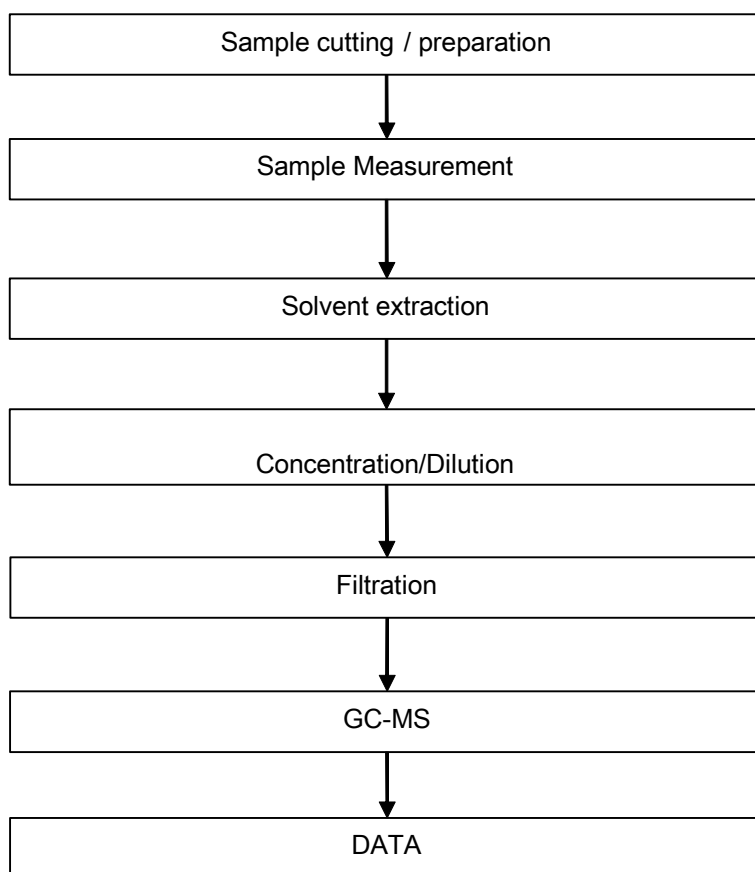
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



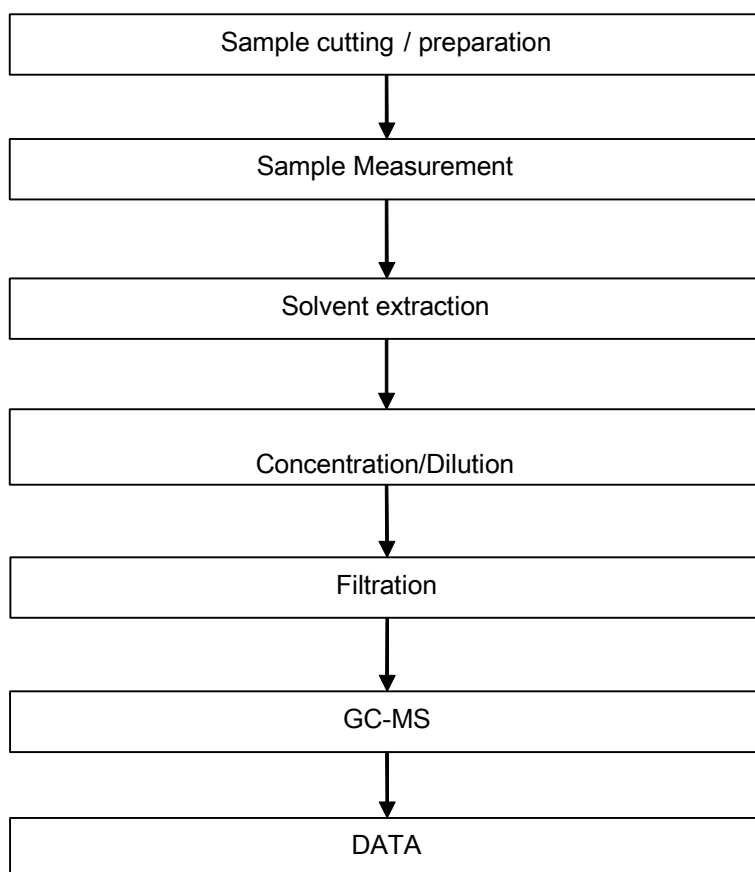
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Phthalates Testing Flow Chart



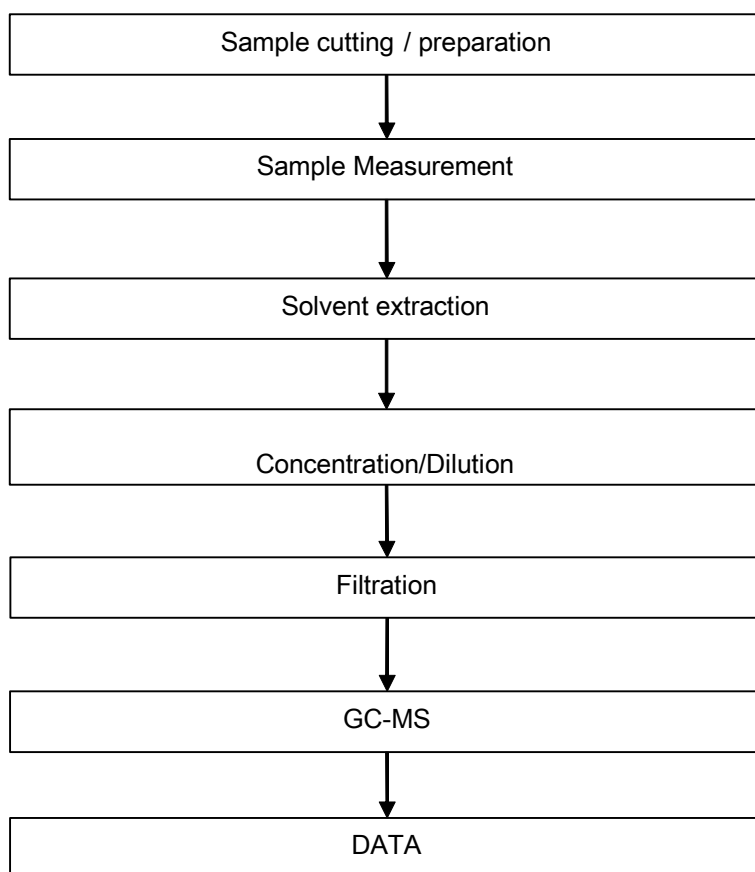
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HBCDD Testing Flow Chart



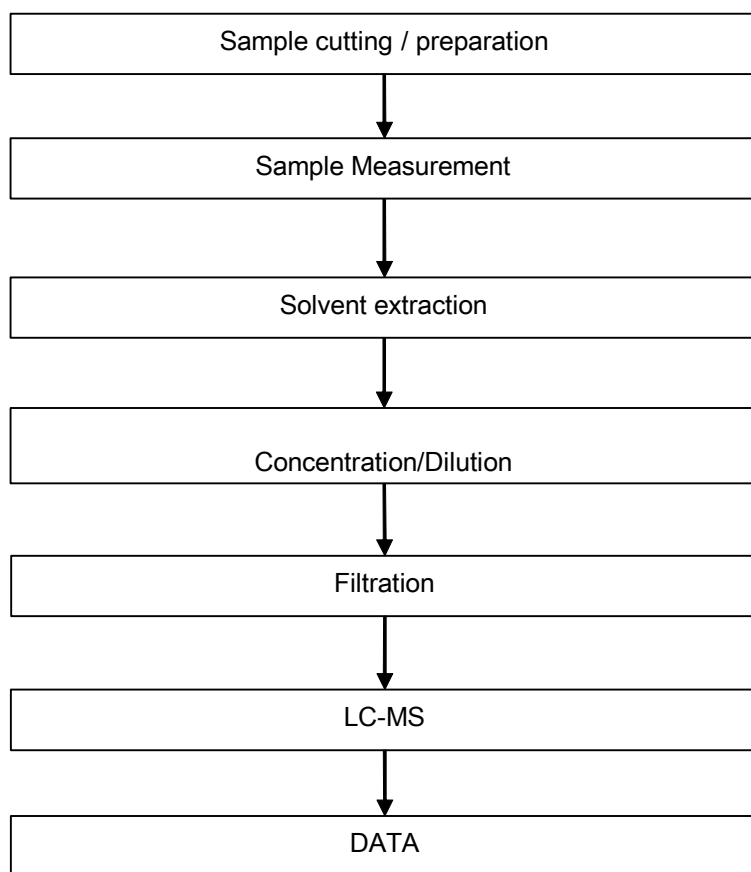
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PAHs Testing Flow Chart



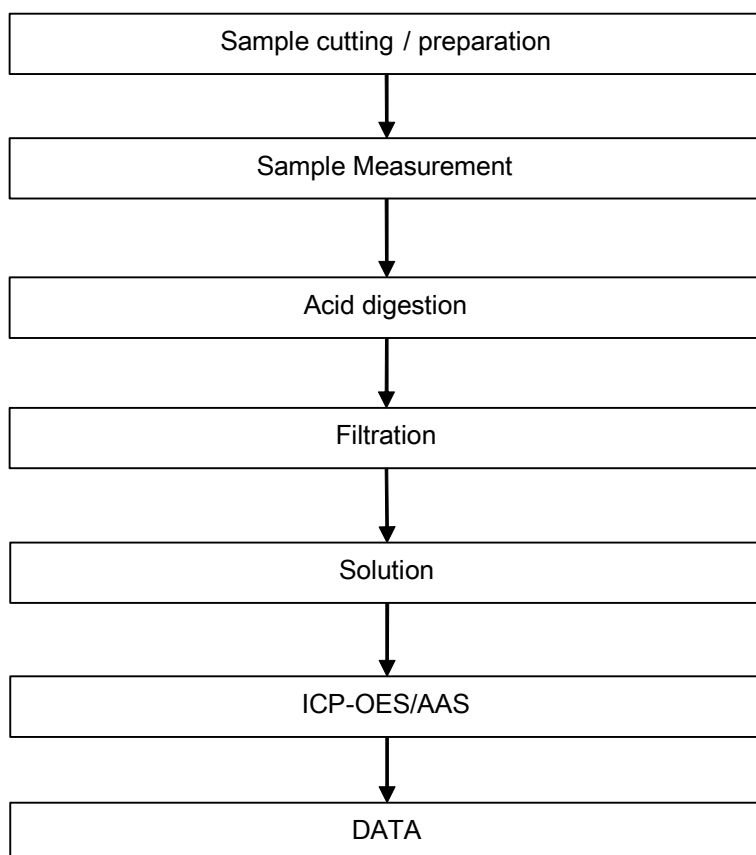
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PFOA / PFOS Testing Flow Chart



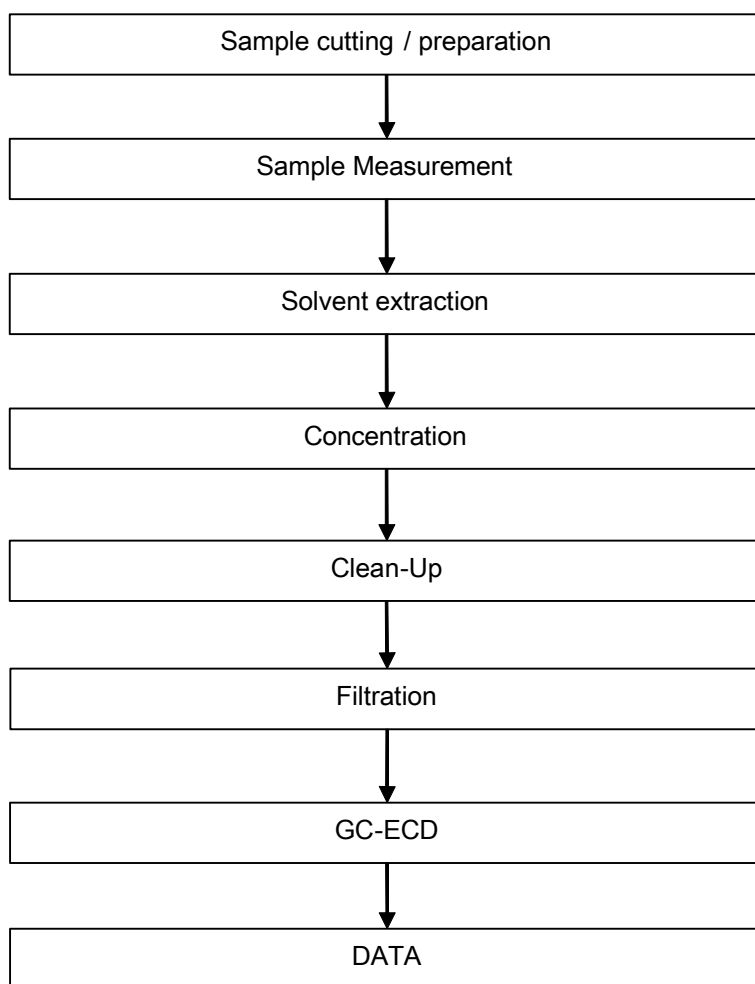
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Elementary Testing Flow Chart



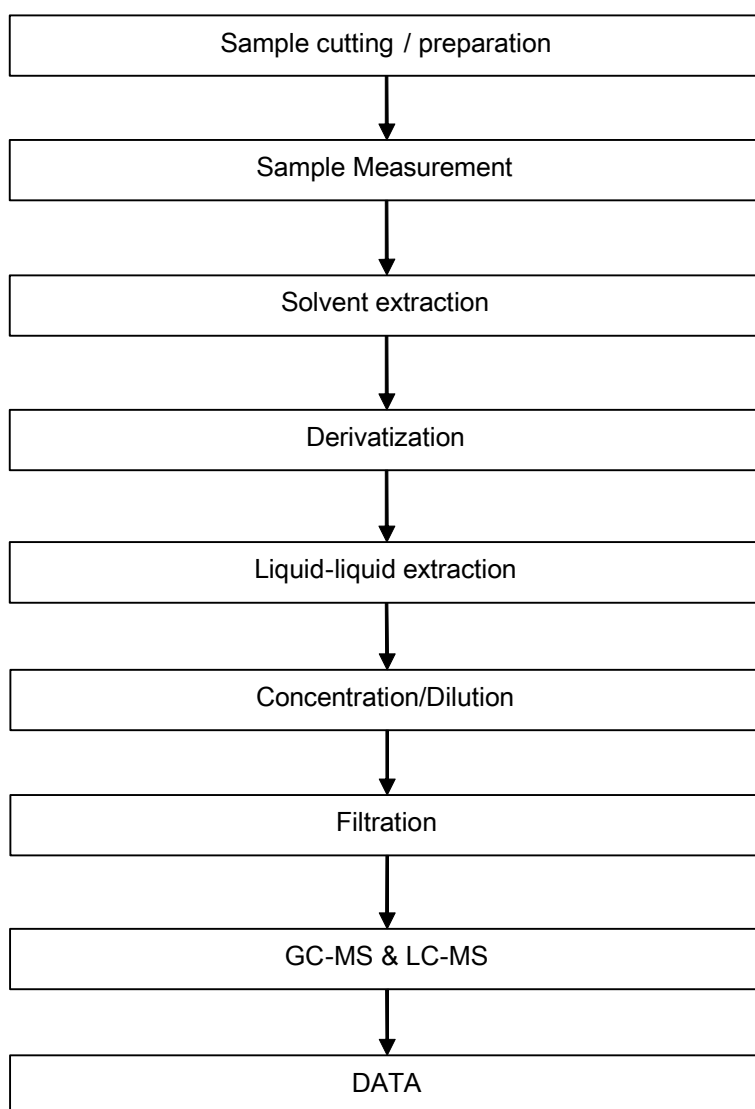
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SCCP/MCCP/LCCP Testing Flow Chart



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TBBP-A Testing Flow Chart



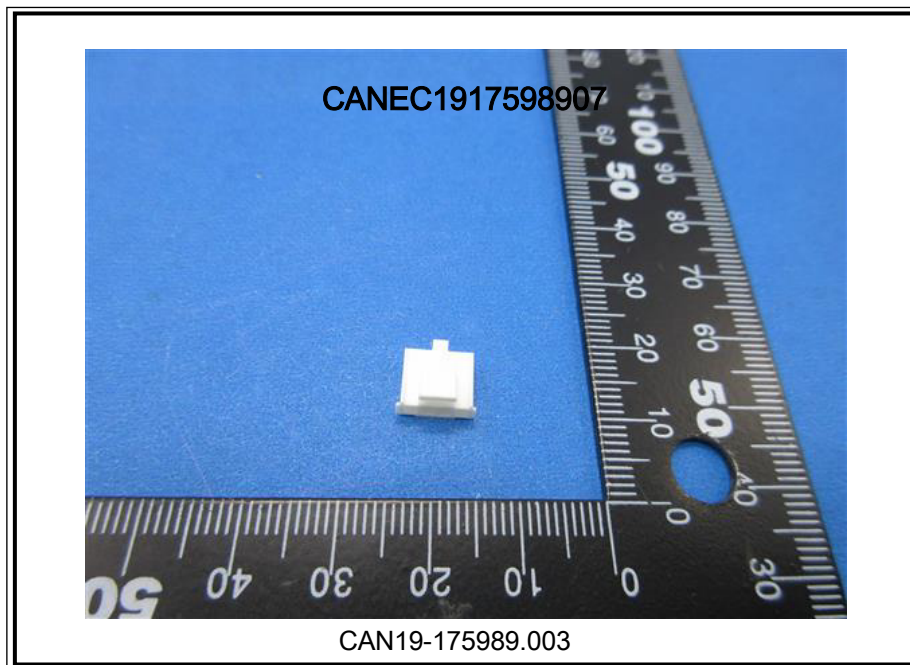
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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



Test Report

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Date: 14 Nov 2018

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SHENGLAN TECHNOLOGY CO.,LTD

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

This report is to supersede test report CANEC1822941204

The following sample(s) was/were submitted and identified on behalf of the clients as : Phosphor copper nickel plated tin terminal pin

SGS Job No. : CP18-061410 - SZ

Model No. : 11255

Client Ref. Info. : PLEASE SEE REMARK

Date of Sample Received : 06 Nov 2018

Testing Period : 06 Nov 2018 - 09 Nov 2018

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo Yeung

Echo Yeung
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-236388.002	Silvery plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	12
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis



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Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Beryllium (Be)	mg/kg	5	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Perfluorooctanoic acid (PFOA)	335-67-1	µg/m ²	1.0	ND
Perfluorooctane Sulfonates (PFOS)^	-	µg/m ²	1.0	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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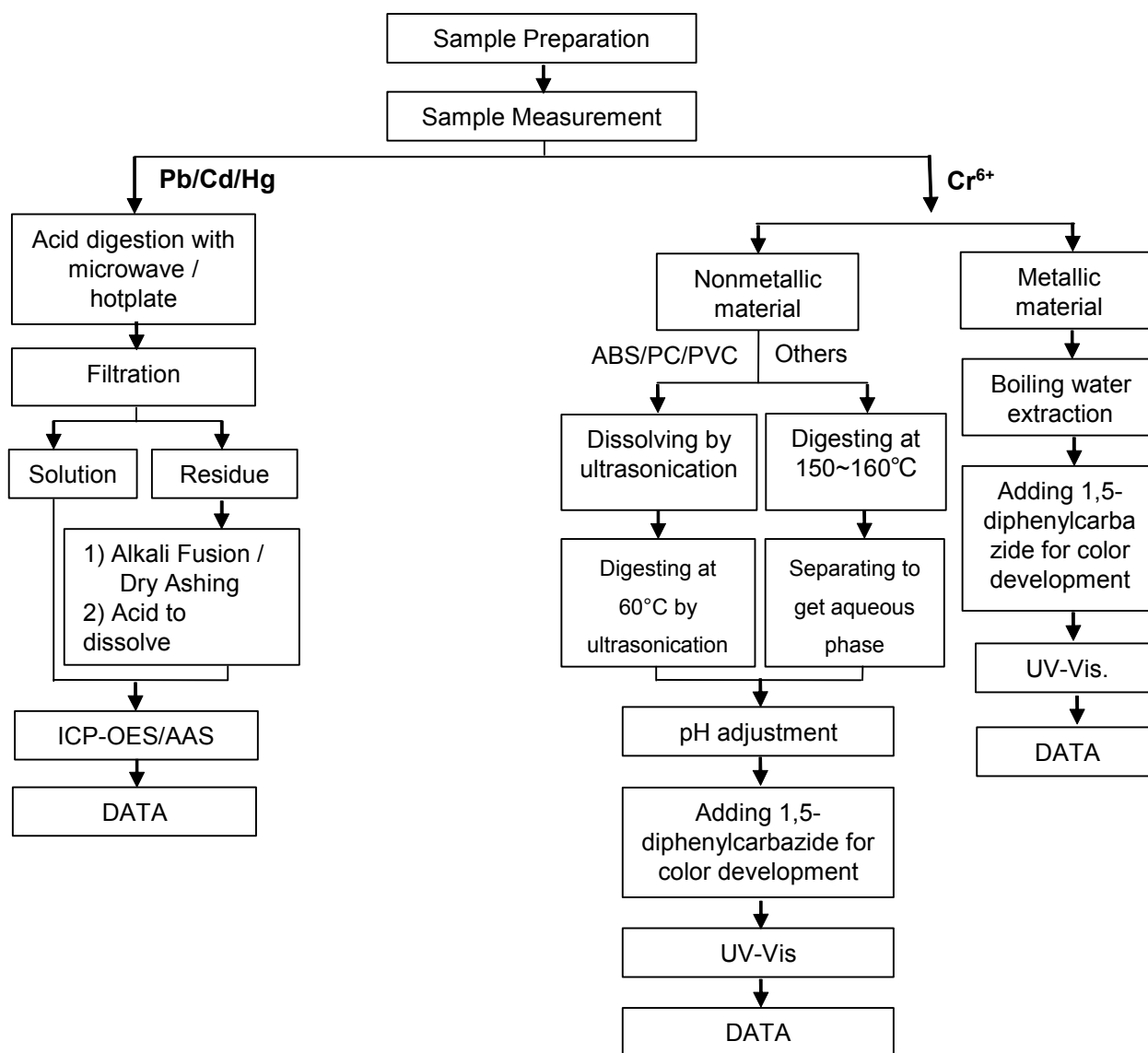
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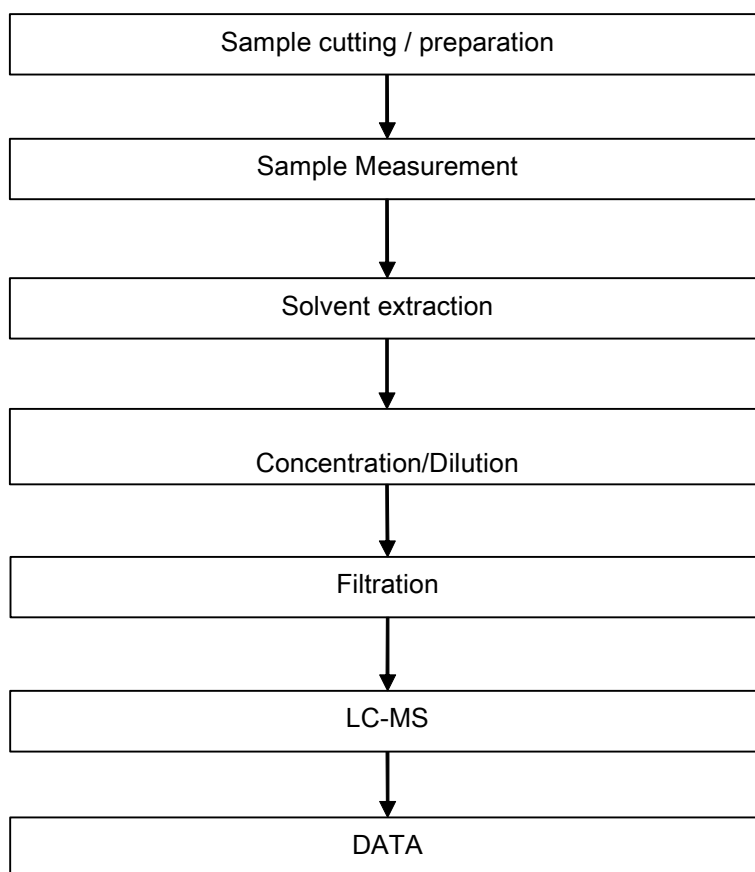
Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



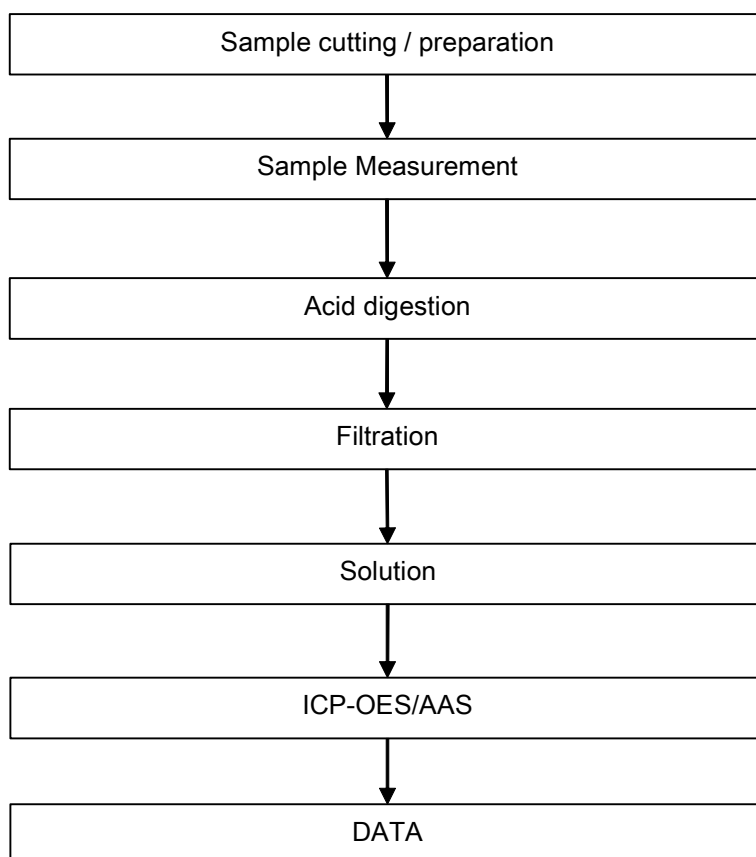
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PFOA / PFOS Testing Flow Chart



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Elementary Testing Flow Chart



Test Report

No. CANEC1823638801

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REMARK:

10001、10500、10800、11001、11002、11003、11004、11005、11006、11007、11008、
11201、11202、11203、11250、11251、11252、11253、11254、11255、11256、11257、
11258、11259、11270、11500、11501、11502、11503、11508、11800、11801、12001、
12002、12003、12004、12005、12006、12007、12008、12009、12010、12011、12012、
12013、12014、12015、12016、12017、12018、12501、12502、12503、12504、12505、
12506、12508、12509、12540、12541、12542、12543、12545、12546、12547、12548、
12549、13402、13502、13601、13961、13962、13963、14000、15001、15002、15080、
17921、20501、20502、20503、20602、20800、20803、21001、21251、21501、21611、
21811、21813、21814、21816、21817、21818、21819、22001、22501、32001、33001、
33002、34201、34202、34502、35081、35082、36201、36202、40301、40302、40303、
40305、40306、40501、40502、40503、40504、40505、40506、40507、40508、40513、
40536、40559、40561、40562、41001、41002、41003、41004、41005、41019、41040、
41043、41251、42003、50001、50003、50501、50601、50602、50801、50802、51001、
51050、51271、51272、51274、51275、51276、51277、51278、51279、51280、52001、
52002、52003、52004、52041、52042、52501、52502、52503、52504、54003、55001、
60000、60001、60100、61001、61002、61003、61004、61005、61006、61007、61008、
61009、61010、61013、61100、61270、62001、62291、62771、62772、63100、64001、



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Test Report

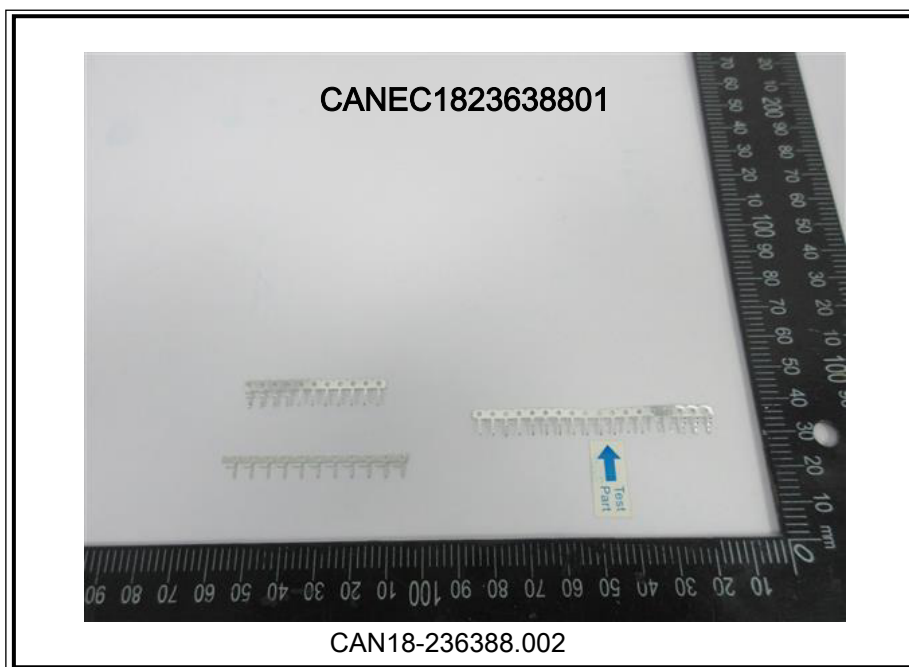
No. CANEC1823638801

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64100, 65000, 65001, 65003, 65004, 67500, 69500, 70001, 70002, 70003, 70004, 70500, 72001, 70600, 70801, 70901, 71008, 71101, 72007, 72008, 72010, 81290, LVA11, QB140, UCCA8, B0007, B0020, B0027, B0028, B0033, B0105, TNDA3, JTHA8, SAF85, UAHA2, TNA11, TNDA3, RJCA9, RJHA6, DSB11, MCB11, UAB11, WFB11, WTB11, RJB11, HDB11, HDB12, HDB13, UCB11, UBB1B, UBB11, UAB16, UADB8, JAB11, YB, TP, MCMBE1, UMB1B, RJMAE2, BUA0CB, BUA0CB, UCMAJ1, BS0130, RJMBE1, BS0133, BS0134, TNKBB1, TNTAC1, UATAA1, UAMAE1, USB2.0, UAMAE1, UATAA1, TNTAE1, UCMAJ1, TNTBT3, 9001, 9002, 5000102, BT035210, THREE IN ONE, FOUR IN ONE, USB, HDMI, RJ, 0308, XSBO, XSB1, UA10103, UA09092, MHF, FPC, FFC, SATA, CARD, LVM, BS-8, JACK, J-PIM, RCA, BUAOHV, SUASN2, BOO, JTHA8, BUAO, OEM, TNAOPO, SCA, TUAOPH, SUAS02, AWDANW, AWDCIW, AWDATB, AHFANB, TNTBC1, TNB12, TNKBG1/2/3/4, UBB14, US90, HE103A, BCO, WUSF5526, UBDU2, UBMBS1/2, BB0, BPO

Sample photo:



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弘源碩電子材料有限公司
HungYuanShuo Electronic Accessories CO.,LTD

产品规格承认书

版本：A/1

产品名称	H 无卤环保热缩套管	供应商代码	
规格/型号	所有系列	客户编号	

供應商確認（弘源碩電子材料有限公司）

拟制/日期	审核/日期
范松林 / 2012 年 1 月 15 日	宋大春 / 2012 年 1 月 15 日

客戶確認

客户批准/日期		
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公司地址：深圳市寶安區沙井街道辦中心路匯盈商務大廈十三樓1301，1302室

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网 址：www.lyc-hys.com

1 主题内容与适用范围

本承认书规定了无卤环保阻燃型热收缩套管的技术要求、试验方法、检验规则以及包装等内容。

本承认书适用于电线连接、焊点保护、电线端部处理、线束及电子元器件的防护和绝缘处理、健身器材零部件和钢结构表面防护、相关产品的防锈和防腐处理、电线和其它产品的标识等用途的无卤阻燃型热收缩套管。

2 引用标准

Standard for Extruded Electrical Tubing UL 224.

3 术语

3.1 热收缩材料

以可塑性线型高聚物或高聚物合金为基材，用高能辐照方法或化学方法使聚合物分子链部分交联成为网状结构获得弹性“记忆效应”，经加热扩张至特定尺寸后冷却定型，使用时加热到适当温度后自行收缩到扩张前的形状和尺寸，这种材料称为热收缩材料。

3.2 热收缩套管

将上述高聚物或高聚物合金通过挤出成型得到规定尺寸的管状中间产品，辐照（或化学）交联后加热扩张，冷却定型得到的具有一定尺寸的管状产品成为热收缩套管。

3.3 绿色 RSFR 无卤阻燃热收缩材料

在热收缩材料中添加一定量的不含卤素、重金属等对环境有害的阻燃剂，使之符合一定阻燃要求和环保要求，则成为绿色 RSFR 无卤阻燃热收缩材料。

4 技术要求

4.1 使用条件

4.1.1 连续使用的环境温度： $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$ 。

4.1.2 可在酸、碱条件下长期使用。

4.1.3 可在环保要求严格的条件下长期使用。

4.2 外观要求

4.2.1 制品表面无明显划伤、凹凸不平、竹节状缺陷。

4.2.2 表面光洁、无油污、无积尘。

4.2.3 印字清晰、无重影、无多余墨迹、无印不全或打滑现象。

4.3 热收缩性能

4.3.1 起始收缩温度 70°C ；超薄型完全收缩温度 110°C ，普通型完全收缩温度 125°C 。

按照 UL224 标准，完全收缩到位温度为 200°C ，3 分钟。

4.3.2 纵向收缩率不超过 $\pm 5\%$

4.4 材料的性能特性

材料的理化性能符合表 1 规定。

4.5 收缩套管的产品尺寸

无卤阻燃型薄壁热收缩套管的产品尺寸符合表 2 规定，无卤阻燃型热收缩套管的产品尺寸符合表 3 规定。

4.6 颜色

标准颜色：黑色、红色、蓝色、黄色、绿色、白色，其它颜色如紫色、灰色、棕色等可根据客户要求定做。

4.7 使用方法

在使用过程中，为了保证热缩套管能完全收缩到位，使用强制鼓风式恒温烘箱，并将收缩温度控制在 125°C 。特别注意，当把热缩套管放入烘箱过程中，烘箱温度有一下降趋势，要达到设定温度需要一定的时间；同时，在烘箱内通过热空气循环流动使热缩套管达到最终收缩温度同样需要一定

的时间。因此，必须在烘箱实际温度达到设定温度并保持该温度 3 分钟左右，热缩套管才能完全收缩到位。

表 1 无卤阻燃型热收缩套管的性能特性

性能			测试方法	性能指标
物理性能	拉伸强度/MPa		GB/T1040	≥10.4
	断裂伸长率/%		GB/T1040	≥200
	热老化后拉伸强度/MPa		UL224; 158℃×168hr	≥7.3
	热老化后断裂伸长率/%		UL224; 158℃×168hr	≥100
	耐热冲击		UL224; 250℃×4hr	不发粘, 不龟裂
	抗冷弯曲		UL224; -30℃×1hr	不龟裂
电气性能	耐压	300V	UL224	2500V 不击穿
		600V	UL224	2500V 不击穿
	击穿强度/KV/mm		GB/T1408	≥15
	体积电阻率/Ω•cm		GB/T1410	≥1×10 ¹⁴
化学性能	铜安定性		UL224; 158℃×168hr	PASS
	抗腐蚀性		UL224; 158℃×168hr	PASS
	阻燃性		UL224	VW-1

表 2 H-CB 管（无卤阻燃型薄壁热收缩套管）的产品尺寸

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围
	内径	壁厚	内径	壁厚	米/盘	米/盘	(mm)
Φ0.6CB	0.90±0.2	0.13±0.05	≤0.40	0.20±0.10	200	400	0.4~0.7
Φ0.8CB	1.10±0.2	0.13±0.05	≤0.50	0.20±0.10	200	400	0.6~0.8
Φ1.0CB	1.40±0.2	0.13±0.05	≤0.65	0.20±0.10	200	400	0.7~1.0
Φ1.5CB	1.90±0.2	0.13±0.05	≤0.85	0.20±0.10	200	400	0.9~1.4
Φ2.0CB	2.40±0.2	0.13±0.05	≤1.00	0.22±0.10	200	400	1.1~1.8
Φ2.5CB	2.90±0.2	0.13±0.05	≤1.30	0.25±0.10	200	400	1.4~2.3
Φ3.0CB	3.40±0.2	0.13±0.05	≤1.50	0.28±0.10	200	400	1.6~2.7
Φ3.5CB	3.90±0.2	0.13±0.05	≤1.80	0.28±0.10	200	400	1.9~3.2
Φ4.0CB	4.40±0.2	0.15±0.05	≤2.00	0.30±0.10	200	400	2.1~3.6
Φ4.5CB	4.90±0.2	0.15±0.05	≤2.30	0.30±0.10	100	200	2.4~4.0
Φ5.0CB	5.50±0.2	0.15±0.05	≤2.5	0.32±0.10	100	200	2.6~4.5
Φ6.0CB	6.50±0.2	0.15±0.05	≤3.0	0.32±0.10	100	200	3.1~5.4
Φ7CB	7.50±0.3	0.15±0.05	≤3.5	0.32±0.10	200	200	3.7~6.3
Φ8CB	8.50±0.3	0.15±0.05	≤4.0	0.32±0.10	200	200	4.2~7.2
Φ9CB	9.50±0.3	0.15±0.05	≤4.5	0.35±0.10	200	200	4.7~8.0
Φ10CB	10.5±0.3	0.15±0.05	≤5.0	0.35±0.10	200	200	5.2~9.0

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Φ11CB	11.5±0.3	0.18±0.05	≤5.5	0.40±0.10	200	200	5.7~10.0
Φ12CB	12.5±0.3	0.20±0.05	≤6.0	0.40±0.10	200	200	6.2~11.0
Φ13CB	13.5±0.3	0.20±0.05	≤6.5	0.40±0.10	200	200	6.7~12.0
Φ14CB	14.5±0.3	0.20±0.05	≤7.0	0.40±0.10	200	200	7.3~13.0
Φ15CB	15.5±0.4	0.20±0.05	≤7.5	0.40±0.10	200	200	7.8~14.0
Φ16CB	16.5±0.4	0.22±0.05	≤8.0	0.40±0.10	200	200	8.3~15.8
Φ17CB	17.5±0.4	0.22±0.05	≤8.5	0.40±0.10	200	200	8.8~16.0
Φ18CB	18.5±0.4	0.22±0.05	≤9.0	0.42±0.10	200	200	9.3~17.0
Φ20CB	20.5±0.5	0.25±0.05	≤10.0	0.45±0.10	200	200	10.5~19.0
Φ22CB	22.5±0.5	0.25±0.05	≤11.0	0.45±0.10	200	200	11.5~20.5
Φ25CB	25.5±0.5	0.25±0.05	≤12.5	0.45±0.10	100	100	13.0~24.0

E203950   (W) WOER RSFR(CB) TUBE 125℃ VW-1 H (Φ9CB)

表3 H管（无卤阻燃型热收缩套管）的产品尺寸要求

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围 (mm)
	内径	壁厚	最大内径	壁厚	米/盘	米/盘	(mm)
Φ0.6	0.9±0.2	0.18±0.05	≤0.40	0.33±0.10	200	400	0.4~0.7
Φ0.8	1.1±0.2	0.18±0.05	≤0.50	0.33±0.10	200	400	0.6~0.8
Φ1.0	1.5±0.2	0.20±0.05	≤0.65	0.36±0.10	200	400	0.75~0.9
Φ1.5	2.0±0.2	0.20±0.05	≤0.85	0.36±0.10	200	400	0.95~1.4
Φ2.0	2.5±0.2	0.20±0.05	≤1.00	0.45±0.10	200	400	1.1~1.8
Φ2.5	3.0±0.2	0.20±0.05	≤1.30	0.45±0.10	200	400	1.35~2.3
Φ3.0	3.5±0.2	0.23±0.05	≤1.50	0.45±0.10	200	400	1.6~2.7
Φ3.5	4.0±0.2	0.23±0.05	≤1.80	0.45±0.10	200	400	1.85~3.2
Φ4.0	4.5±0.2	0.25±0.05	≤2.00	0.45±0.10	200	400	2.1~3.6
Φ4.5	5.0±0.2	0.28±0.05	≤2.30	0.56±0.10	100	200	2.35~4.0
Φ5.0	5.5±0.2	0.28±0.05	≤2.50	0.56±0.10	100	200	2.6~4.5
Φ6.0	6.5±0.2	0.28±0.05	≤3.00	0.56±0.10	100	200	3.1~5.4
Φ7.0	7.5±0.3	0.30±0.05	≤3.50	0.56±0.10	100	100	3.7~6.3
Φ8.0	8.5±0.3	0.30±0.08	≤4.00	0.56±0.10	100	100	4.2~7.2
Φ9.0	9.5±0.3	0.30±0.08	≤4.50	0.56±0.10	100	100	4.7~8.0
Φ10	10.5±0.3	0.30±0.08	≤5.00	0.56±0.10	100	100	5.2~9.0
Φ11	11.5±0.3	0.30±0.08	≤5.50	0.56±0.10	100	100	5.7~10
Φ12	12.5±0.3	0.30±0.08	≤6.00	0.56±0.10	100	100	6.2~11
Φ13	13.5±0.3	0.35±0.08	≤6.50	0.56±0.10	100	100	6.7~12
Φ14	14.5±0.3	0.35±0.10	≤7.00	0.70±0.10	100	100	7.3~13
Φ15	15.5±0.4	0.35±0.10	≤7.50	0.70±0.10	100	100	7.8~14

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规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围 (mm)
Φ16	16.5±0.4	0.35±0.10	≤8.00	0.70±0.10	100	100	8.3~15
Φ17	17.5±0.4	0.35±0.10	≤8.50	0.70±0.10	100	100	8.8~16
Φ18	19.0±0.5	0.35±0.10	≤9.00	0.70±0.10	100	100	9.3~17
Φ20	22.0±0.5	0.40±0.10	≤10.00	0.83±0.10	100	100	10.4~19
Φ22	24.0±0.5	0.40±0.12	≤11.00	0.83±0.15	100	100	11.4~21
Φ25	26.0±0.5	0.45±0.12	≤12.50	0.90±0.15	50	50	12.8~24
Φ28	29.0±0.5	0.45±0.12	≤14.00	0.90±0.15	50	50	14.4~29
Φ30	31.5±1.0	0.45±0.12	≤15.00	1.00±0.15	50	50	16~29
Φ35	36.5±1.0	0.45±0.12	≤17.50	1.00±0.15	50	50	18~34
Φ40	41.5±1.0	0.50±0.12	≤20.00	1.00±0.15	50	50	21~39
Φ45	46.5±1.0	0.50±0.15	≤22.50	1.00±0.20	25	25	23.5~44
Φ50	≥50	0.50±0.15	≤25.00	1.10±0.20	25	25	26~49

E203950   WOER RSFR-H TUBE 125°C VW-1 H (Φ9)

注: Φ30 及以上规格产品默认为 G 管 (环保性能符合欧盟 RoHS 2002/95/EC 标准)。如果客户需 H 无卤热缩套管, 须在订单上注明。

4.8 环境物质

本承认书承诺不使用以下物质, 四大重金属、多溴联苯 (PBB)、多溴联苯醚 (PBDE)、卤素等通过 SGS 检测。无卤阻燃型热收缩套管的环保特性列于表 4。

1. 多氯化联苯 (PCB) 类
2. 多氯化萘 (PCN) 类
3. 氯化石蜡
4. 灭蚁灵 (Mirex)
5. 其它有机氯化物
6. 有机溴化合物-多溴联苯 (PBB)
7. 有机溴化合物-多溴联苯醚 (PBDE)
8. 有机锡化合物 (三丁基锡化合物和三苯基锡化合物)
9. 石棉
10. 偶氮化合物
11. 甲醛

表 4 无卤阻燃型热收缩套管的环保特性

环境物质	含量	测试方法
氟 (F)	≤200PPM	EN 14582 Method B
氯 (Cl)	≤900ppm	EN 14582 Method B
溴 (Br)	≤900ppm	EN 14582 Method B
碘 (I)	≤200PPM	EN 14582 Method B

弘源碩電子材料有限公司

镉 (Cd)	≤5ppm	IEC 62321
铅 (Pb)	≤90ppm	IEC 62321
铬 (Cr ⁶⁺)	≤5ppm	IEC 62321
汞 (Hg)	≤5ppm	IEC 62321
砷 (As)	≤50ppm	EPA 3052
钡 (Ba)	≤1000ppm	EPA 3052
锑 (Sb)	≤60ppm	EPA 3052
硒 (Se)	≤25ppm	EPA 3052

备注：氯 (Cl) + 溴 (Br) <1500ppm

5. 材质证明书

材 质 证 明 书

沃尔核材股份有限公司无卤环保型 RSFR-H 热缩套管是一种阻燃型的热收缩套管，组成材料为聚烯烃加适量阻燃剂和助剂。产品中铅 (Pb)、镉 (Cd)、汞 (Hg)、六价铬 (Cr⁶⁺)、多溴联苯 (PBB)、多溴联苯醚 (PBDE) 等环境物质含量符合日本 SONY-SS-00259 和欧盟 RoHS 2002/95/EC 指令环保要求。其主要成份如下：

原料名称			使用目的	含量	供应商	CAS. NO.
中文	英文	分子式				
聚烯烃	Polyolefin	(CH ₂ CH ₂) _n	主剂	50%	北京有机	9002-88-4
氢氧化镁	Magnesium Hydroxide	Mg(OH) ₂	阻燃剂	35%	锦昊辉	1309-42-8
磷系阻燃剂	Phosphorus	(NH ₄ PO ₃) _n	阻燃剂	10%	上海海以	7723-14-0
色母粒	Pigment	色母+填充剂	着色剂	5%	华万彩	——
油墨	Printing Ink	——	印字	——	上海捷信	——

6. 技术资料

- (1) UL/cUL 证书
- (2) ISO9001 证书
- (3) ISO14001 证书
- (4) ISO/TS16949 证书
- (5) SGS/ITS/CTI 检测报告

弘源碩電子材料有限公司

二零一二年一月十五日



YDPU2.E203950 Tubing, Extruded Insulating - Component

[Page Bottom](#)

Tubing, Extruded Insulating - Component

[See General Information for Tubing, Extruded Insulating - Component](#)

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD

E203950

XINWEI INDUSTRIAL PARK, WOER MANSION

NANSHAN DISTRICT, XILI

SHENZHEN, GUANGDONG 518052 CHINA

Cat. No.	Max V	Max Temp C	Col Recognized	Max Temp Rated Oil Resistance C	VW-1 Rated #
Flexible Heat-Shrinkable Polyolefin Tubing					
RSFR	600	125	All except Clear	None	\$
WKZM-x-yz	600	125	White	None	No
RSFR-H	600	125	All except Clear	None	Yes
RSFR(CB)	300	125	All except Clear	None	Yes
Not Heat-Shrinkable PTFE Tubing					
WF	600	200	Natural	None	Yes
Heat-Shrinkable Polyolefin Tubing with Meltable Liner					
SBRS	600	125	All except Clear	None	Yes
Not Heat-Shrinkable Standard Wall Silicone Tubing					
WST-600	600	150	White	None	@

x-yz - x represents tubing expanded ID, yz represents any alpha and/or numeric combination - for internal client code.

- Tubing is considered to comply with the optional VW-1 flammability requirements only if it is so marked for tubing authorized below.

@ - VW-1 rated for internal diameter sizes 6.50 - 15.00 mm only.

\$ - VW-1 rated for Black color only.

Marking: Company name or file number "E203950", catalog number, voltage rating, temperature rating in degrees C, inside diameter (before and after recovery), and date of manufacture shall be marked on tags attached to both ends of the tubing, on the shipping spool label or on the smallest unit container.

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Test Report (SVHC)

No. CANEC1822723201

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SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.
WOER MANSION,LANJING NORTH ROAD,PINGSHAN INDUSTRIAL ZONE, LONGGANG
DISTRICT,SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PLEASE SEE REMARK

SGS Job No. : CP18-059386 - SZ

Date of Sample Received : 02 Nov 2018

Testing Period : 02 Nov 2018 - 08 Nov 2018

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety one (191) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Six (6) substances in the Public Consultation List of potential Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on Sep 4, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-227232.001	Black tube w/whtie printing

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Consultation List of potential SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in consultation list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
 - ** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. / = Substances in the Consultation List of SVHC.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
/	192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
/	193	Benzo[k]fluoranthene	207-08-9	0.050
/	194	Fluoranthene	206-44-0	0.050
/	195	Phenanthrene	85-01-8	0.050
/	196	Pyrene	129-00-0	0.050
/	197	Undecafluorohexanoic acid and its ammonium salt	307-24-4, 21615-47-4	0.050



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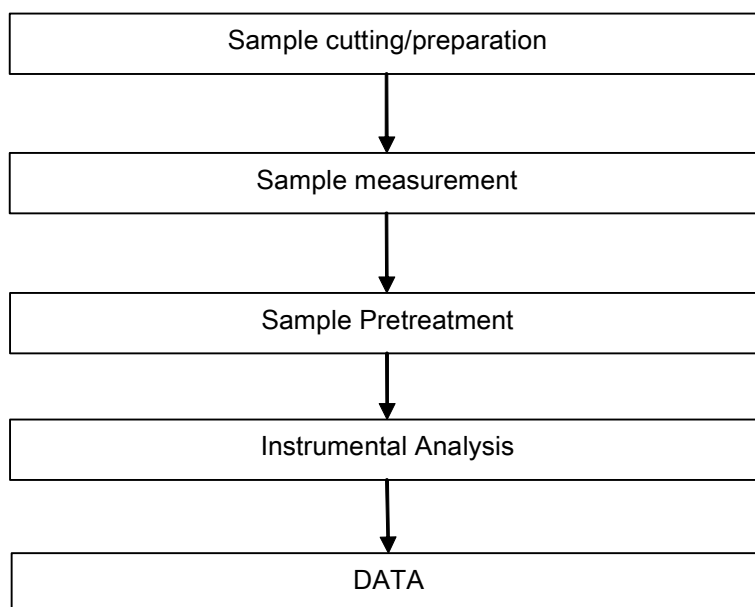
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ATTACHMENTS

SVHC Testing Flow Chart




Test Report (SVHC)

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REMARK:

RSFR-H HEAT SHRINKABLE TUBINGS (E203950 
WOER RSFR-H TUBE 125°C VW-1 H)



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Test Report (SVHC)

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Sample photo:



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Test Report



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Report No. A2190096126101003R1

Applicant SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

Address WOER INDUSTRIAL PARK, LANJING NORTH ROAD, LONGTIAN STREET, PINGSHAN DISTRICT, SHENZHEN, GUANGDONG.

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name PE masterbatch- Black
Sample Received Date Apr. 26, 2019
Testing Period Apr. 26, 2019 to Apr. 29, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Crit Qin

Approved by

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

May 17, 2019

No. R179757340

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190096126101003R1

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

Test Report

Report No. A2190096126101003R1

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	36 mg/kg	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

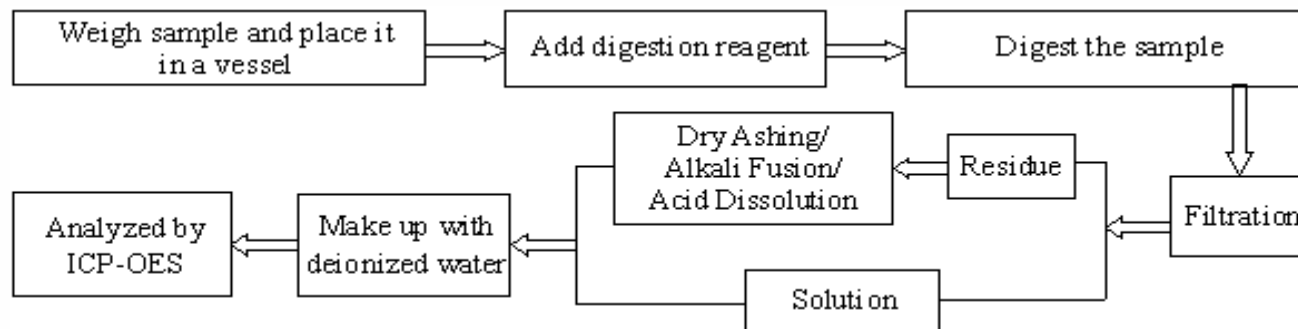
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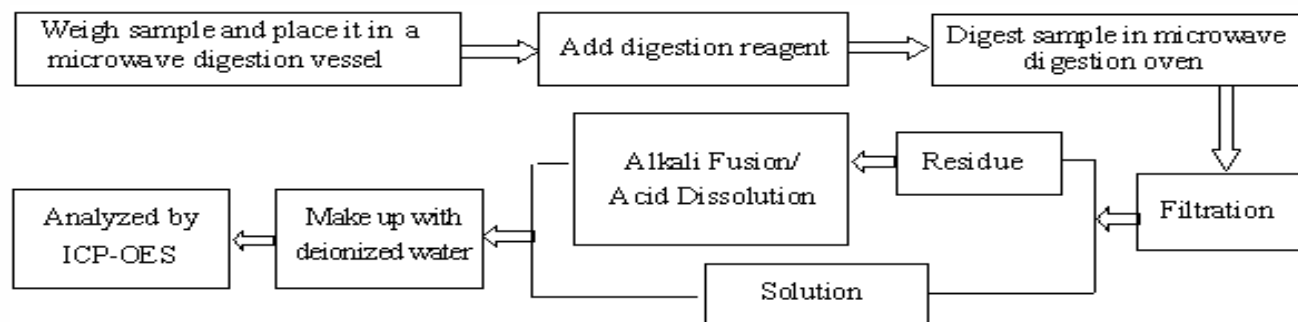
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Test Process

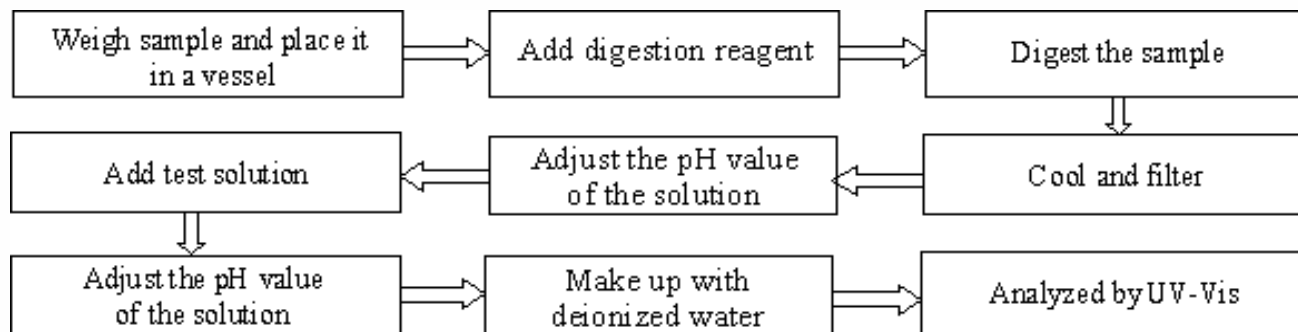
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



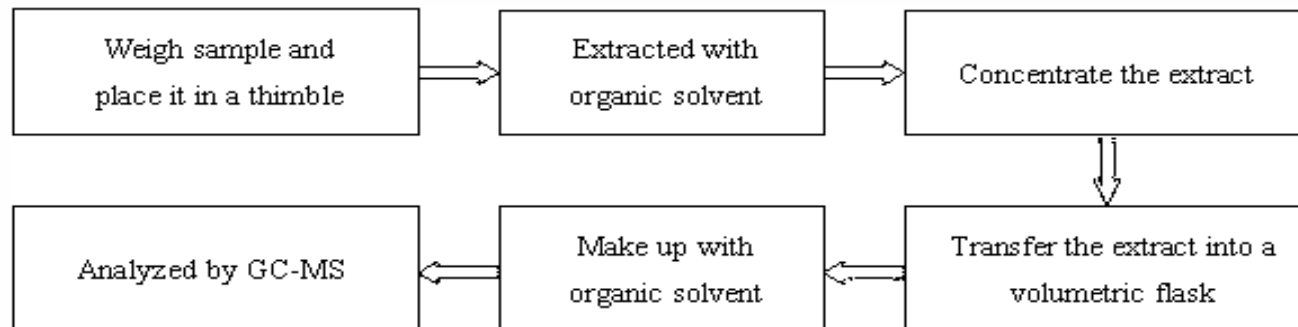
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

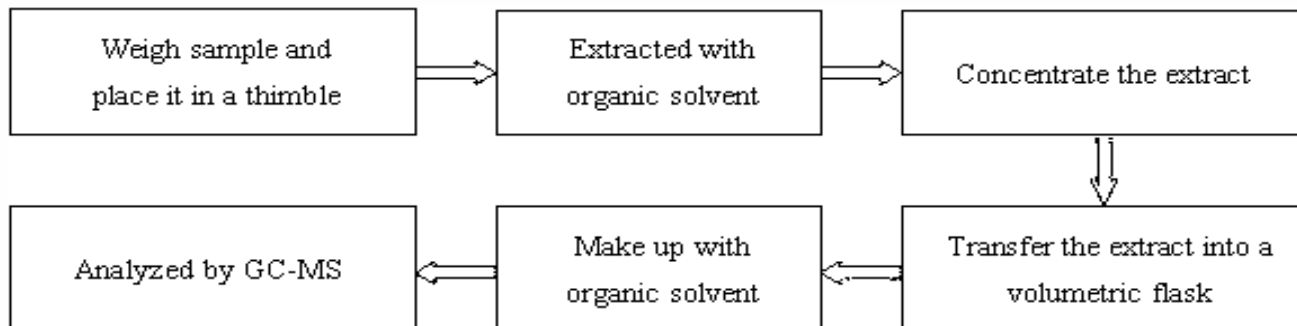


Test Report

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5. Phthalates (DBP, BBP, DEHP, DIBP)



Test Report

Report No. A2190096126101003R1

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : HALOGEN FREE WHITE INK

SGS Job No. : CP19-032627 - SZ

Model No. : I-TPE-01

Client Ref. Info. : I-PE-01; I-TPE-01;I-TPR-01;I-PE-01; I-PPE-01;I-PP-01;I-TPU-01;I-RU-01

Date of Sample Received : 19 Jun 2019

Testing Period : 19 Jun 2019 - 26 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-117806.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Remark: The result(s) shown is/are of the total weight of dried sample.



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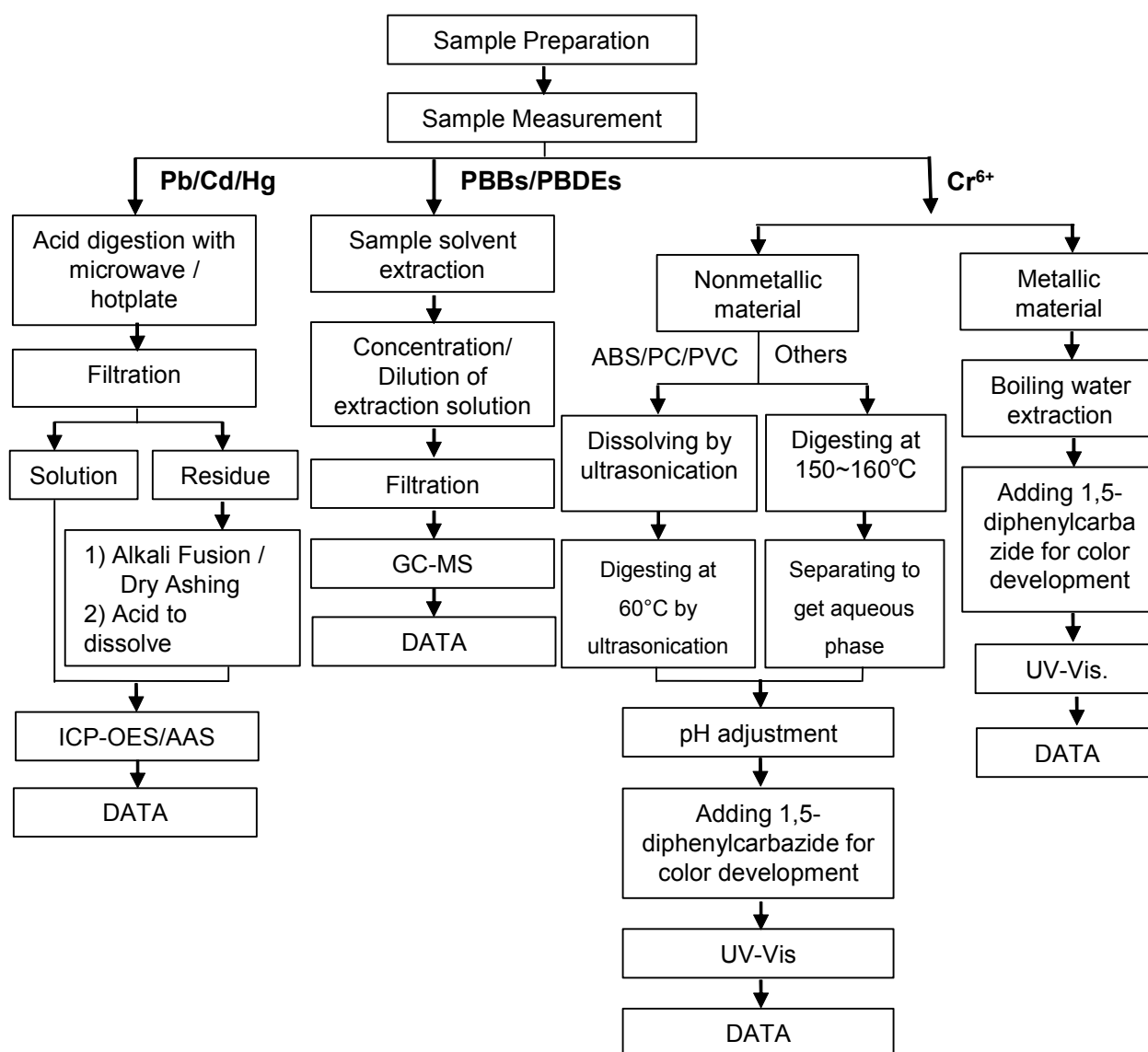
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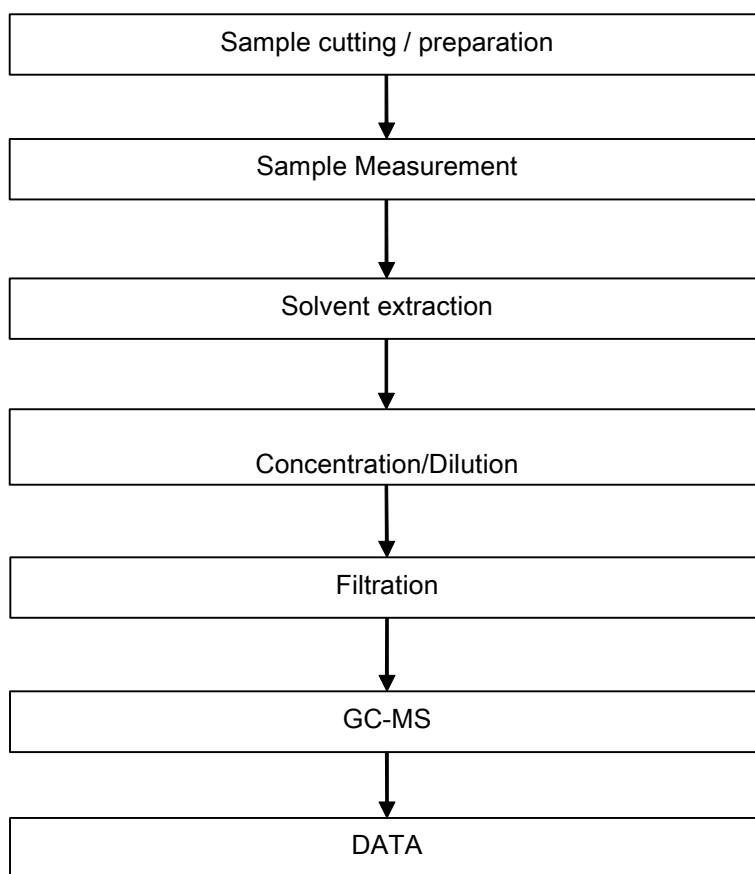
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Sample photo:



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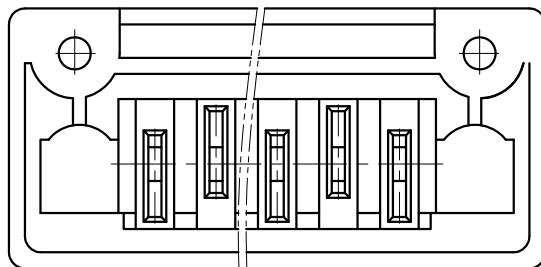


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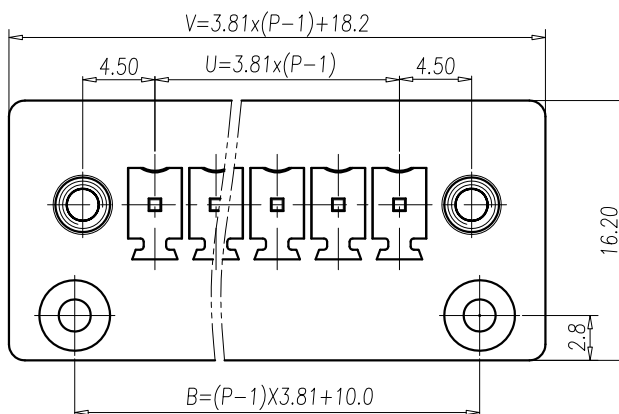
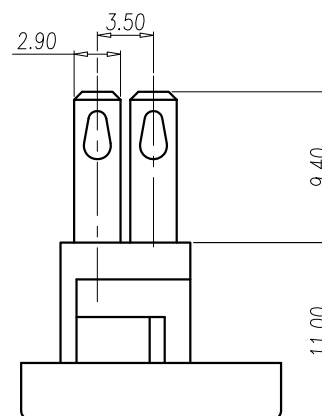
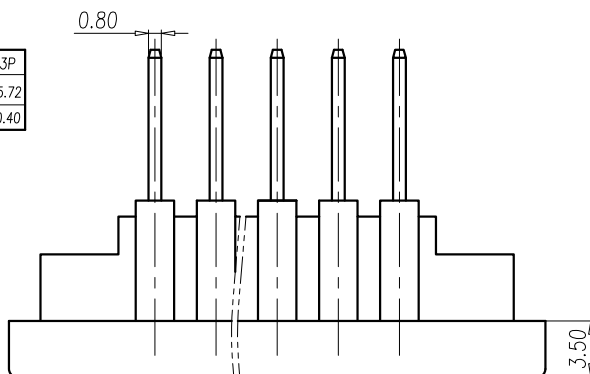
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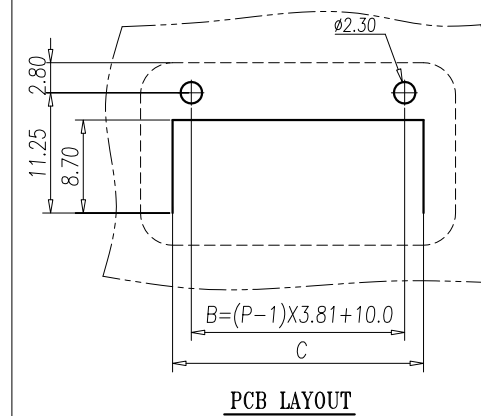
P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12P	13P
B	13.81	17.62	21.43	25.24	29.05	32.86	36.67	40.48	44.29	48.10	51.91	55.72
C	18.50	22.30	26.10	29.90	33.80	37.60	41.40	45.10	49.00	52.80	56.60	60.40
P	14P	15P	16P	17P	18P	19P	20P	21P	22P	23P	24P	
B	59.53	63.34	67.15	70.96	74.77	78.58	82.39	86.20	90.01	93.82	97.63	
C	64.20	68.00	71.90	75.72	79.52	83.22	87.12	90.92	94.72	98.52	102.42	



Total Pitch Tolerances		Normal Dimension Tolerances	
0~30	±0.20	0~30	±0.25
over 30~53	±0.25	over 30~53	±0.30
over 53~70	±0.30	over 53~70	±0.35
over 70~90	±0.35	over 70~90	±0.44
over 90~115	±0.44	over 90~115	±0.55
over 115~150	±0.55	over 115~150	±0.70
over 150~200	±0.70	over 150~200	±0.85
over 200~250	±0.85	over 200~250	±1.00
over 250~320	±1.00	over 250~320	±1.20

REV.	CONTENT	NAME	DATE
6			

DWG.	ZHH	DATE	2017.01.20	UNITS	MM	SHEET/OF	1 / 1
CHK.		DATE		SCALE	3:1 (:)		
APP.		DATE		NAME	ECHP381V-XXP		
 DINKLE				DDWG NO.	SP-03-ECHP381V		
DINKLE ENTERPRISE CO., LTD							



NOTES 1:

UL Standard :

- 1.Rating: 300V 8A
- 2.Insulation Withstands Voltage:
AC 1600V at 1 minute
- 3.Using Temperature Range:
-40°C~+115°C
- 4.Suitable Electric Wire:AWG 28~16



IEC Standard:

- 1.Rating: 320V 14A
2. Rate Impulse Voltage: 2500V
- 3.Insulation Resistance:
500MΩ or more at DC500V
4. Material Group : I
5. Pollution Degree : 2
6. Overvoltage Category: II
7. Using Temperature Range:
-40°C~+120°C

NOTES 2:

1. RoHS Compliance

3	NUT	COPPER ALLOY	M2.5x0.45
2	SOLDER PIN	COPPER ALLOY	Tin Plated
1	HOUSING	PA66	UL94-V0 GREEN
ITEM	NAME OF PART	MATERIAL	NOTES

DWG.	ZHH	DATE	2017.01.20	UNITS	MM	SHEET/OF	1 / 1
CHK.		DATE		SCALE	3:1 (:)		
APP.		DATE		NAME	ECHP381V-XXP		
 DINKLE				DDWG NO.	SP-03-ECHP381V		
DINKLE ENTERPRISE CO., LTD							

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DINKLE ELECTRIC MACHINERY (CHINA) CO.,LTD

NO.258, XINGPU MID ROAD, SHIPU BUSINESS ADMINISTRATION ESTATE, QIANDENG TOWN,
KUNSHAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : PA66 DP
A30SFN30+DUS025 (GREEN)

SGS Job No. : SP19-030244 - SH

Supplier : LANXESS

Date of Sample Received : 03 Sep 2019

Testing Period : 03 Sep 2019 - 05 Sep 2019

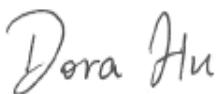
Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Dora Hu
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA19-196849.002	Green plastic grains

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Red Phosphorus

Test Method : SGS in house method(SHTC- CHEM- SOP -342-T), Analysis was performed by ICP-OES and Pyrolysis-GC/MS

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Red Phosphorus	mg/kg	500	ND

Notes :

For Positive result, the testing result is based on the worst-case scenario, and confirmed by Pyrolysis-GC-MS.

Hexabromocyclododecane (HBCDD)



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Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND



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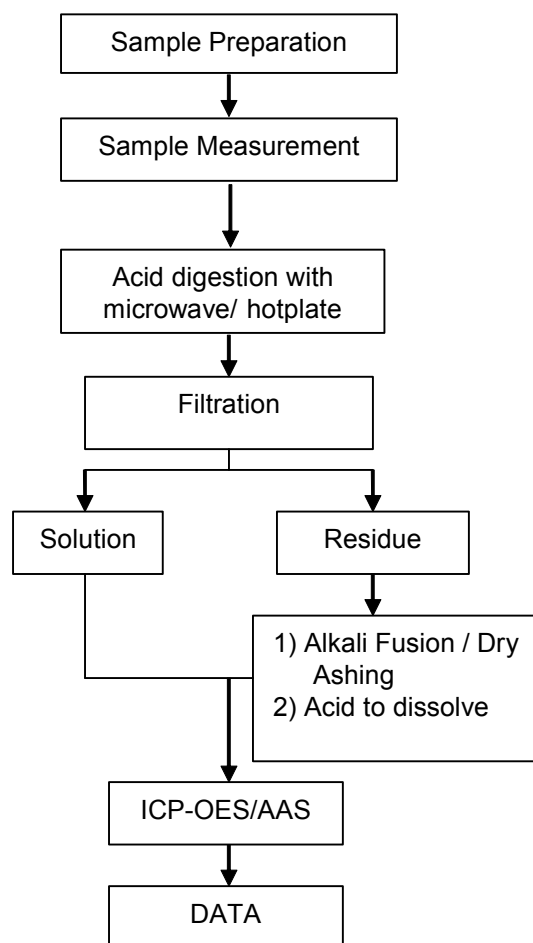
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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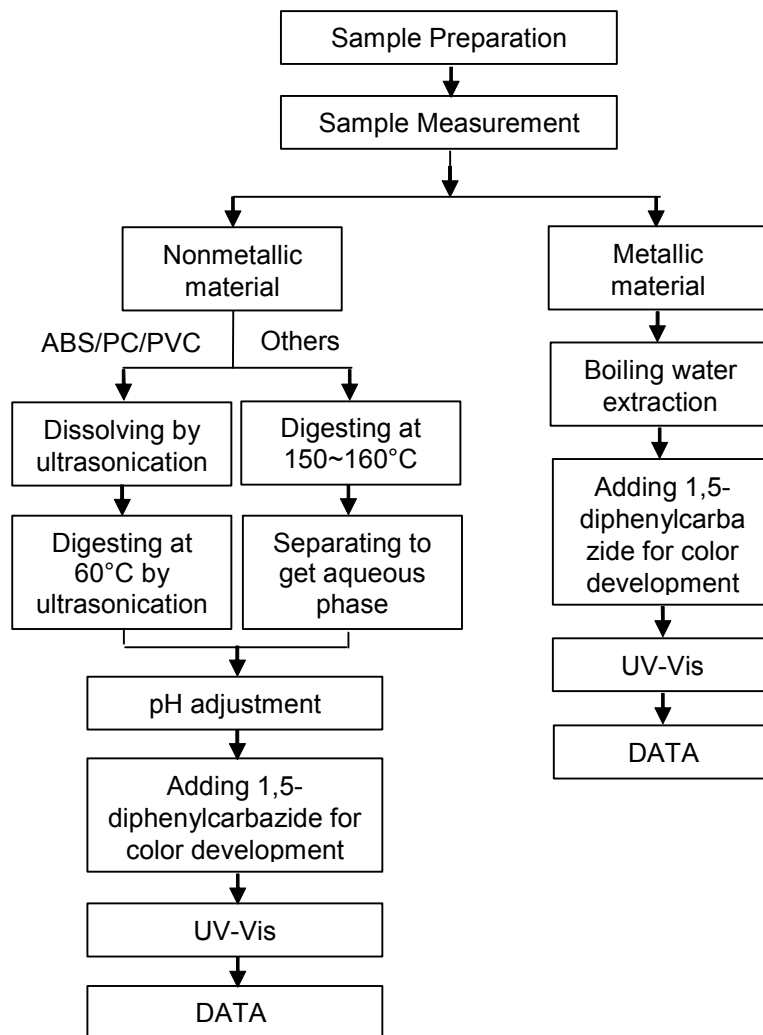
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



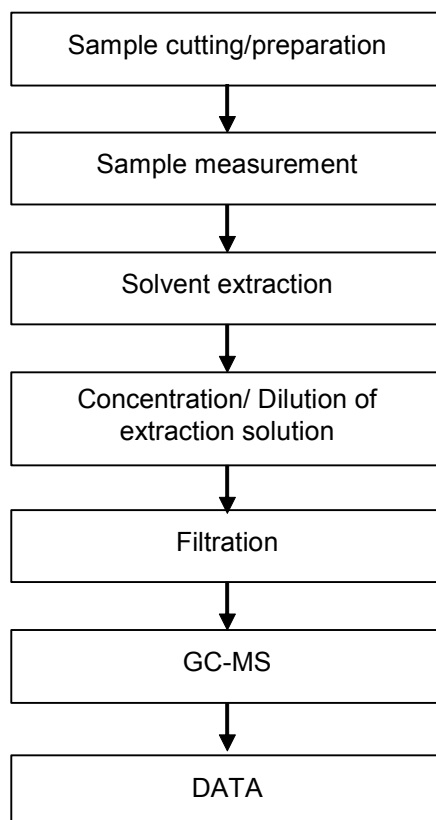
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PBBs/PBDEs Testing Flow Chart



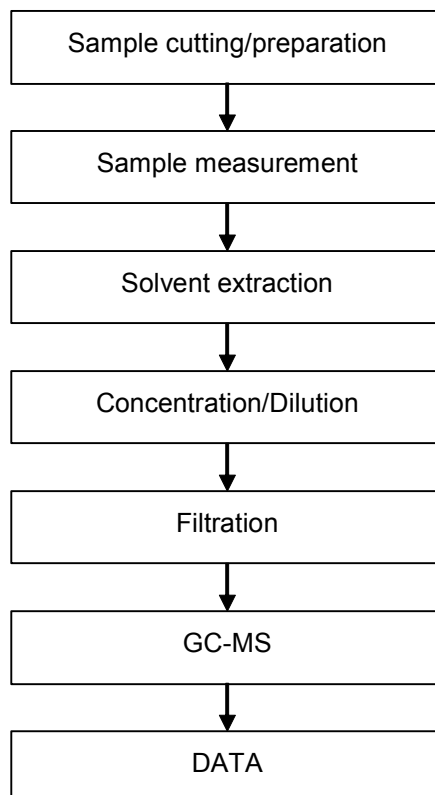
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Phthalates Testing Flow Chart



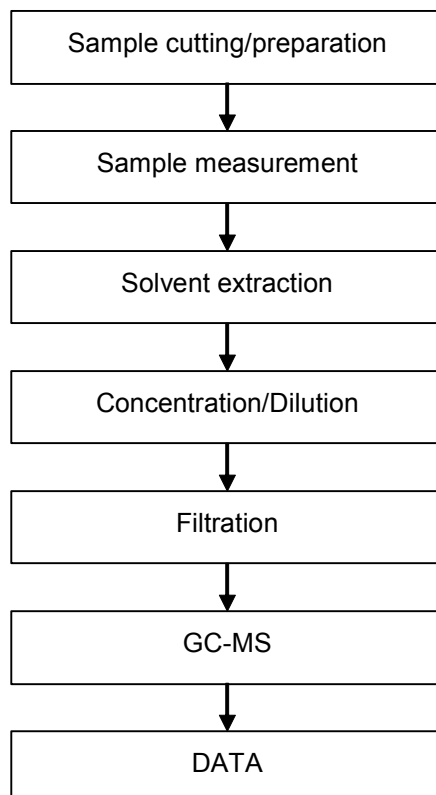
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HBCDD Testing Flow Chart



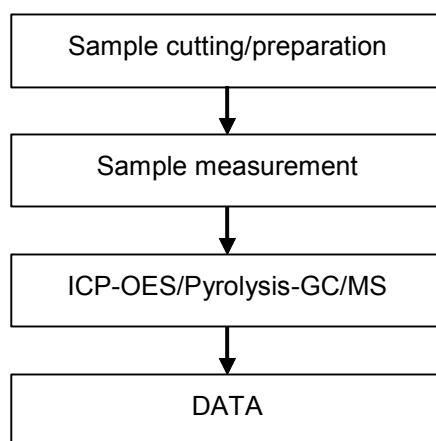
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Red Phosphorus Testing Flow Chart



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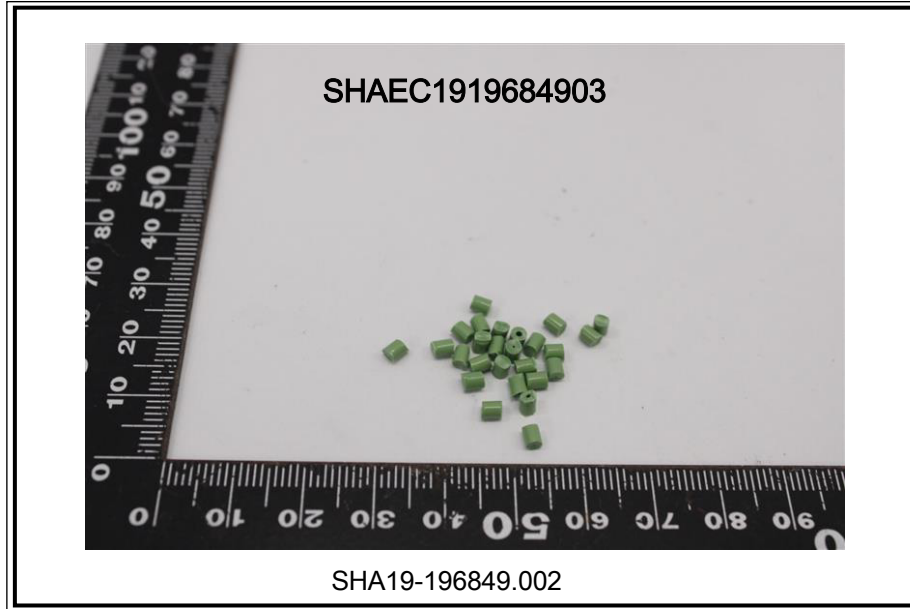
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Test Report



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Report No. A2180247928101002

Applicant DONGGUAN CITY NOIMIA INDUSTRIAL CO., LTD

Address DONGGUAN CHANGAN TOWN MANSION HILLOCK FORTUNA'S UNIVERSAL
INDUSTRIAL CITY ROAD F BUILDING

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name C3604
Part No. C3604
Sample Received Date Dec. 14, 2018
Testing Period Dec. 14, 2018 to Dec. 18, 2018

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Lily Li

Approved by

Hill Zheng

Hill Zheng

Technical Manager

Reviewed by

Iori Xia

Date

Dec. 18, 2018

No. R158921180

Centre Testing International Group Co., Ltd.

CTI Building, No.4, Liuxian 3rd road, Xin'an Street, Bao'an District, Shenzhen, P.R.China

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	32984 mg/kg	2 mg/kg
Cadmium(Cd)	33 mg/kg	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D. ▼	0.10 µg/cm ² (LOQ)
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Sample/Part Description Golden metal

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL or LOQ)
- mg/kg = ppm = parts per million
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm²
- ▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 µg/cm². The coating is considered a non-Cr(VI) based coating.

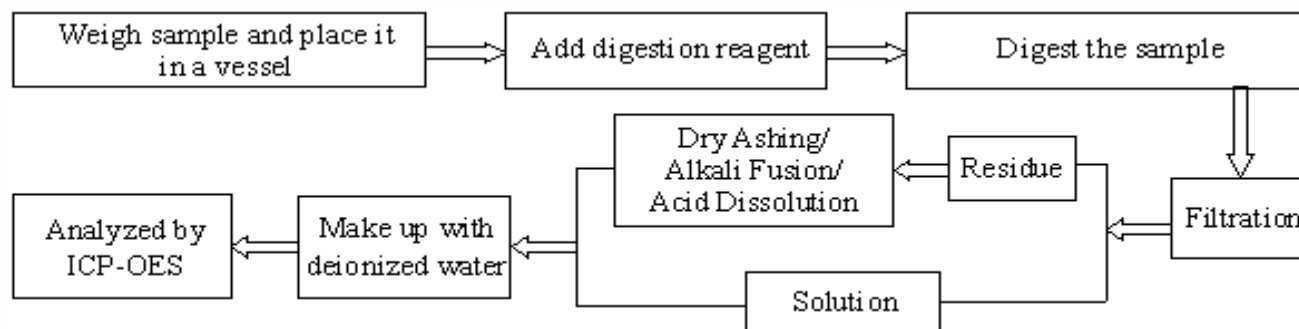
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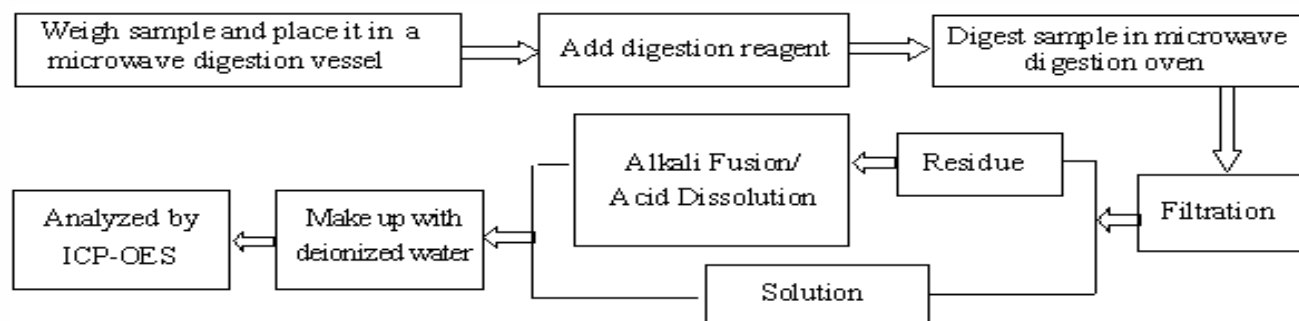
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Test Process

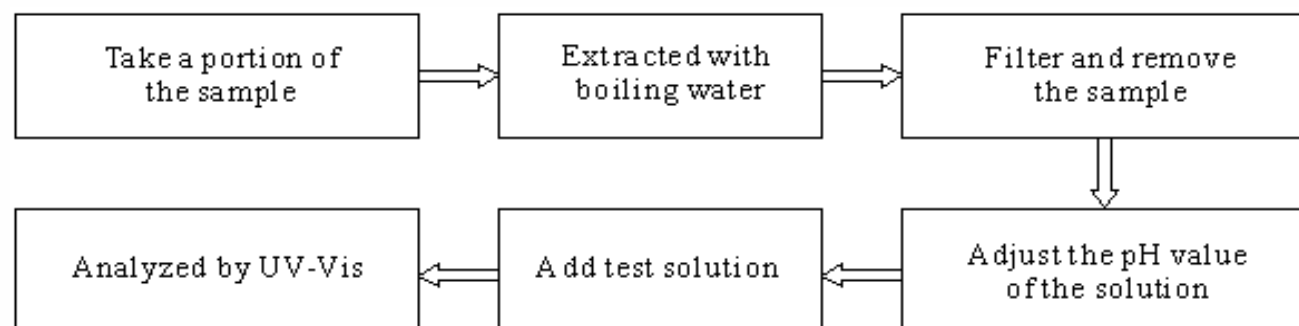
1. Lead(Pb), Cadmium(Cd)



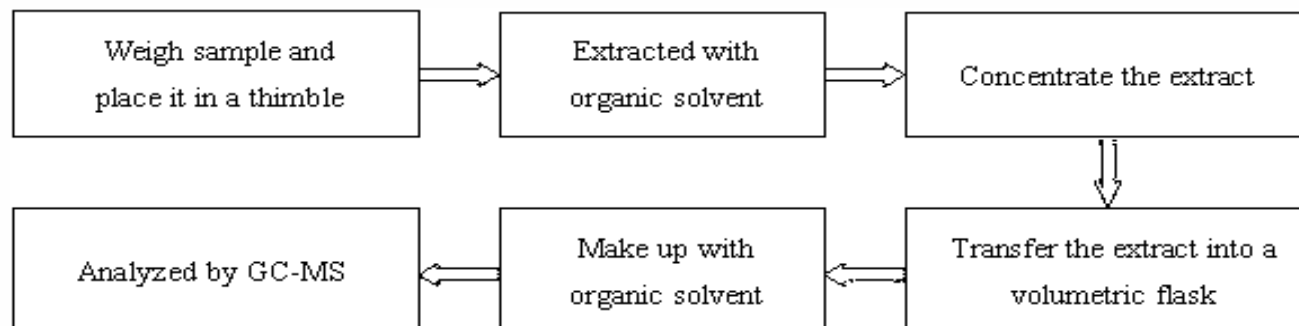
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

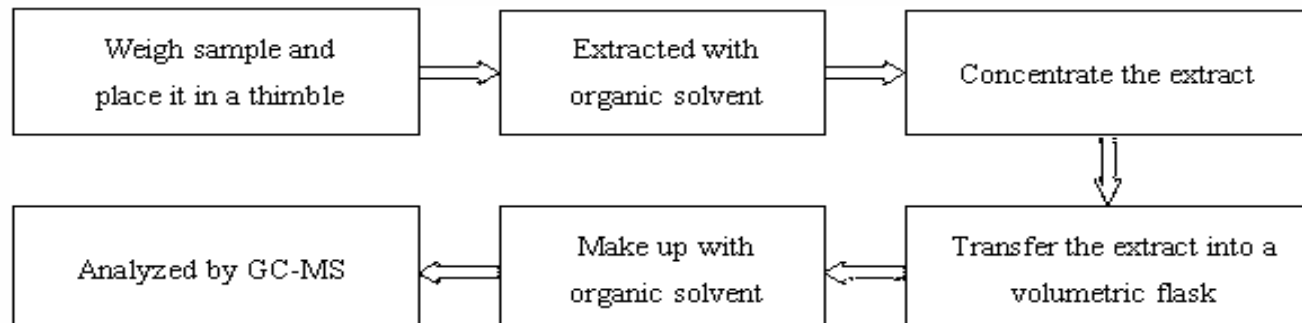


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5. Phthalates (DBP, BBP, DEHP, DIBP)



Test Report

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report

No. CANML1906064029

Date: 23 Apr 2019

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DONG GUAN SHU PENG METALLIC PRODUCTS CO., LTD

BUILDING A NO.6 DAJIN ROAD,XIXI DAJIN INDUSTRIAL PARK,LIAOBU TOWN,DONGGUAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : C1100

SGS Job No. : GZIN1904016655PC - GZ

Internal Reference No. : GZIN1904016380ML

Date of Sample Received : 11 Apr 2019

Testing Period : 11 Apr 2019 - 17 Apr 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Annie Ren

Annie Ren
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-060640.002	Copper-colored metal sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	3
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.



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<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Beryllium (Be)	mg/kg	5	ND

Hexabromocyclododecane (HBCDD)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND

Notes :

- (1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:
- i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
- ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material. In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.
- iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised



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material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	10	ND
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.

Remark: Results & photo(s) of this report refer to test report CANML1906064021.



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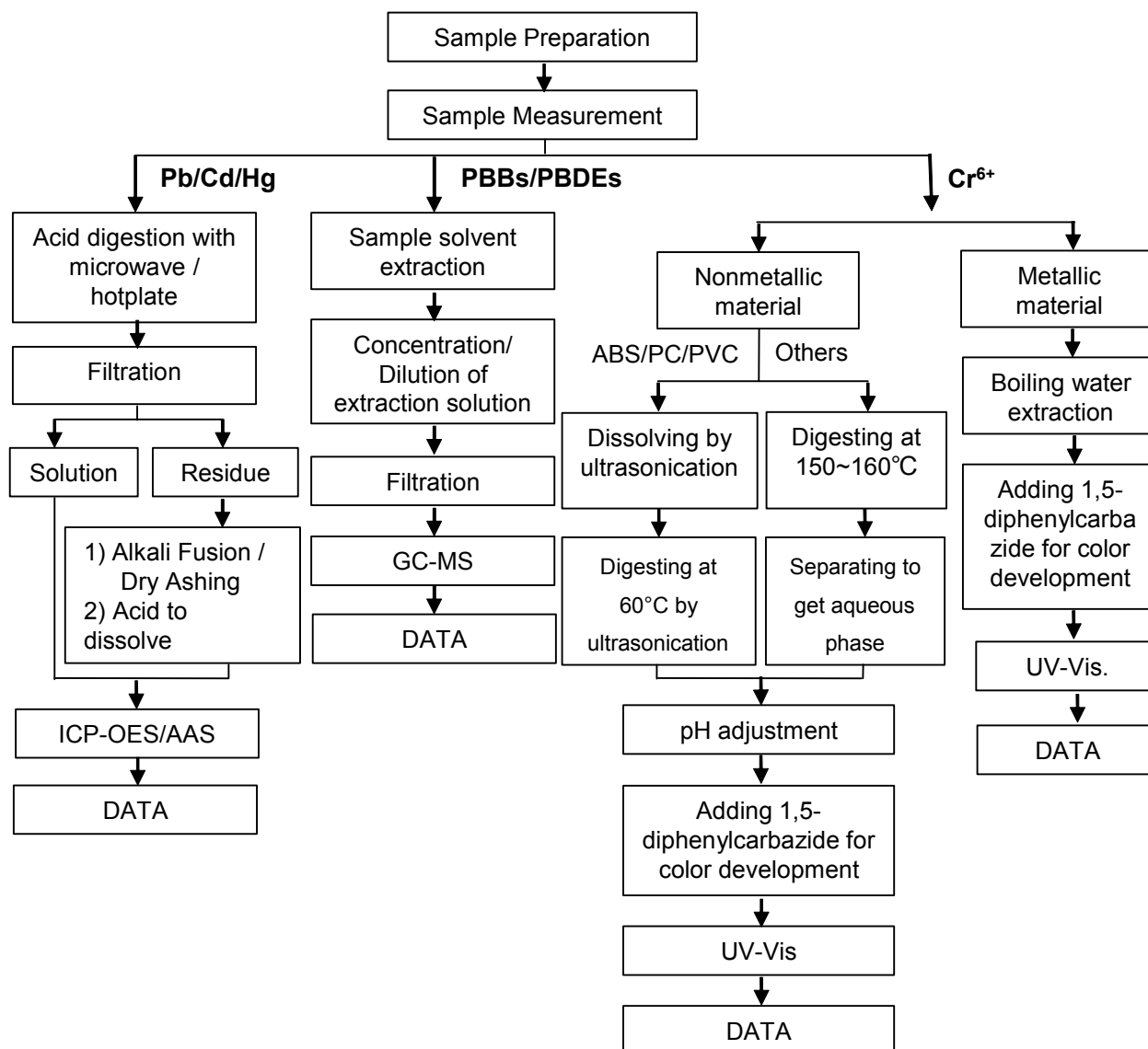
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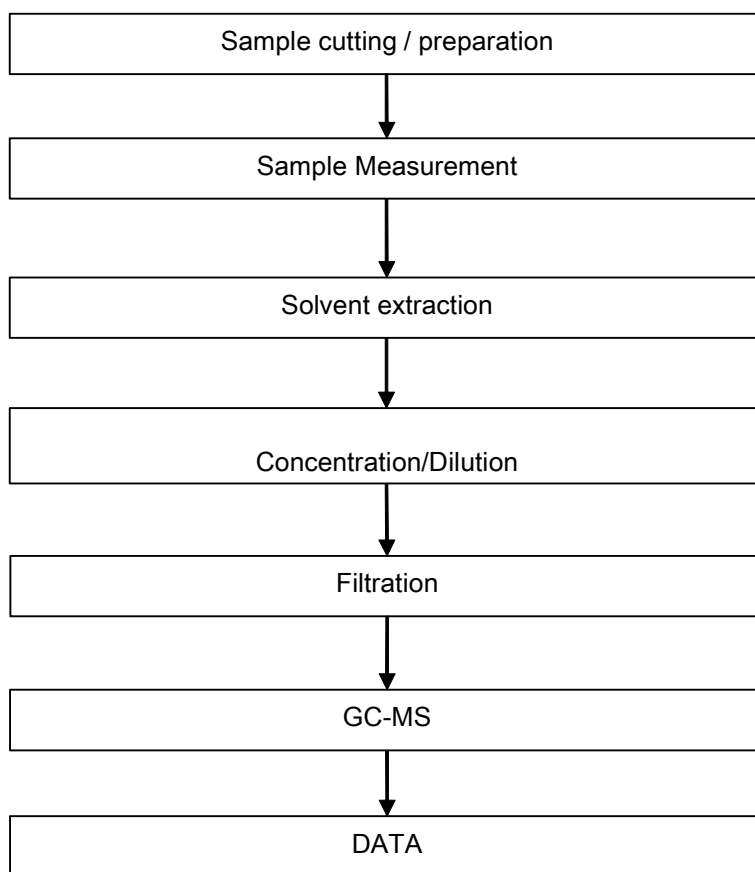
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



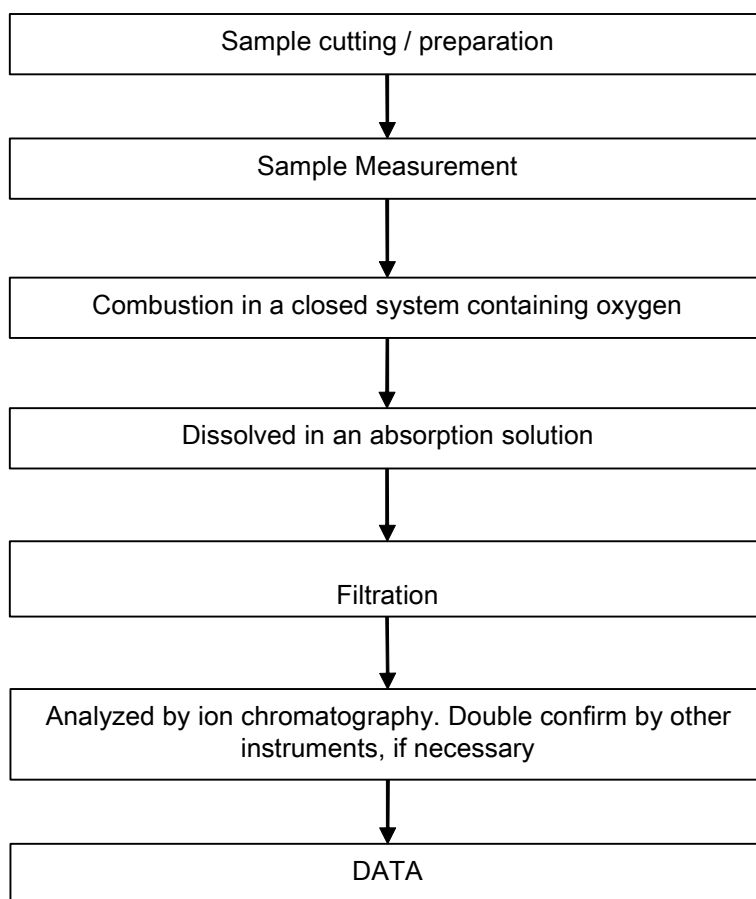
ATTACHMENTS

Phthalates Testing Flow Chart



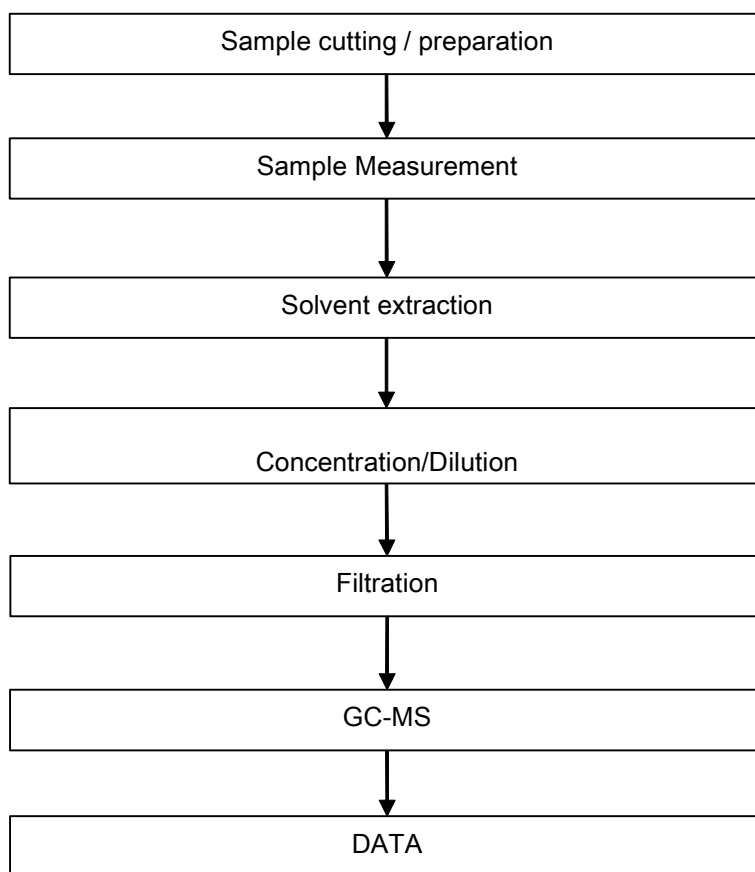
ATTACHMENTS

Halogen Testing Flow Chart



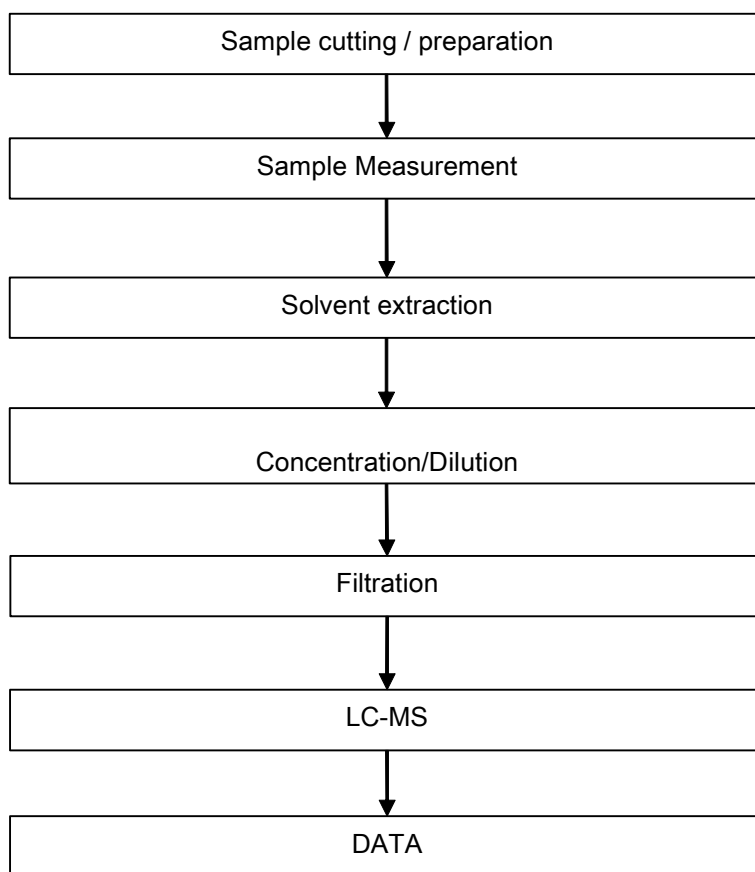
ATTACHMENTS

HBCDD Testing Flow Chart



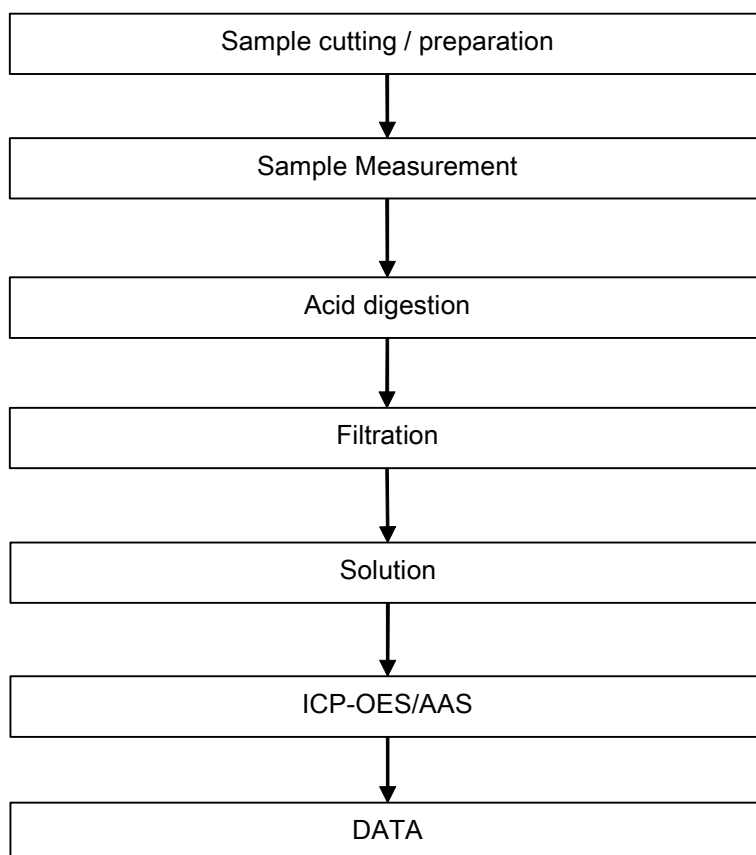
ATTACHMENTS

PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



Test Report

No. CANML1906064029

Date: 23 Apr 2019

Page 12 of 12

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANML1903212301

Date: 08 Mar 2019

Page 1 of 6

DONGGUAN SHENGJI HARDWARE PRODUCTS CO., LTD

DONGGUAN HUMEN TOWN SHAJIAO COMMUNITY PHOENIX MOUNTAIN INDUSTRIAL ZONE NO. 1

The following sample(s) was/were submitted and identified on behalf of the clients as : Tin PLating

SGS Job No. : SZIN1903002431PC - SZ

Date of Sample Received : 05 Mar 2019

Testing Period : 05 Mar 2019 - 08 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Annie Ren

Annie Ren
Approved Signatory



CANML1903212301



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Test Report

No. CANML1903212301

Date: 08 Mar 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-032123.001	Silvery metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANML1903212301

Date: 08 Mar 2019

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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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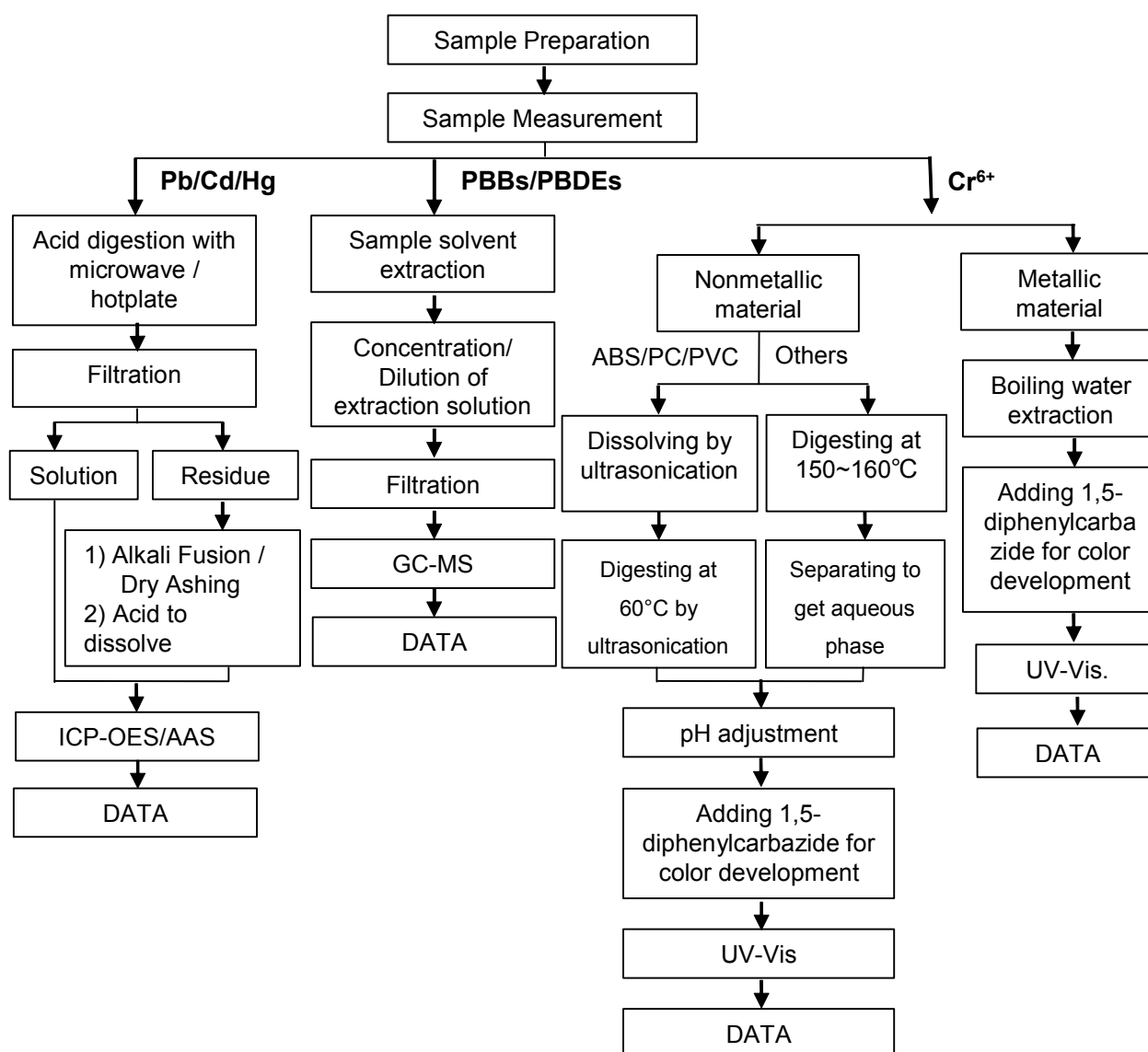
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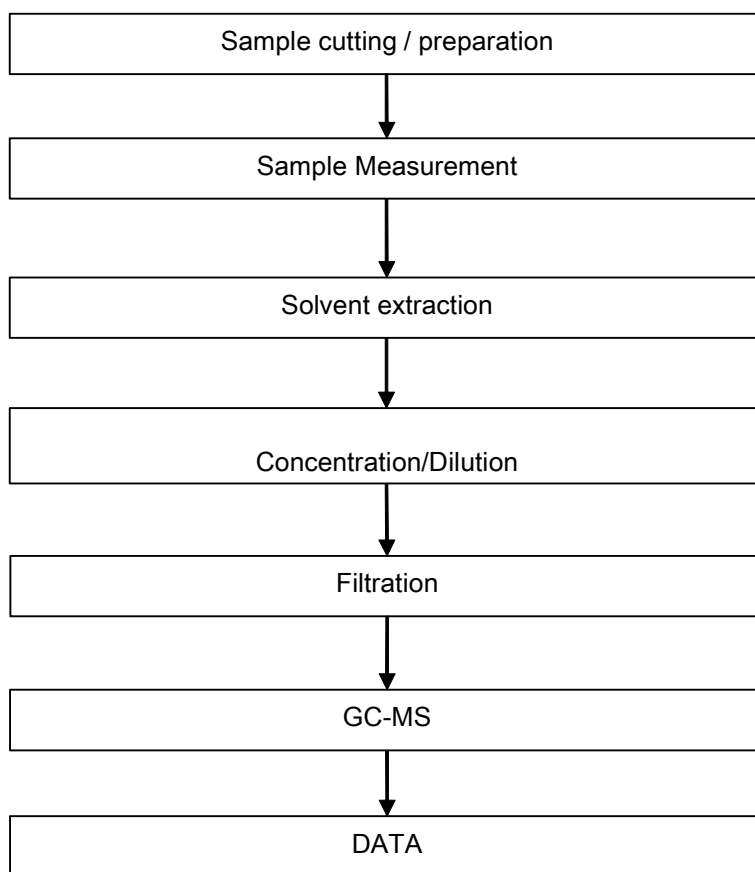
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANML1903212301

Date: 08 Mar 2019

Page 6 of 6

Sample photo:



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Dist, New Taipei City, 231, Taiwan, R.O.C.**

Non-use of restricted substances statement

QD4-089 Rev.B2

- ii. 當作為包材類的材料，也須符合歐盟包裝指令(94/62/EC) 與修訂指令(2013/2/EU)

When used as package material, it also needs to comply with EU package directive (94/62/EC) and amendment (2013/2/EU)

Note: Pb+Cd+Hg+Cr⁶⁺ <100 ppm

- iii. 若為電池零件，也須符合電池指令 2006/66/EC 與修訂指令 2013/56/EU

For battery components, it also needs to comply with EU battery directive (2006/66/EC) and amendment (2013/56/EU)

Note: Cd<20ppm; Hg <5ppm

二、產品符合衝突金屬(Conflict Metal)規範，並確認銷售產品若有含錫、鉭、鎢、金這四種礦產，來源並非來自剛果民主共和國及其周邊國家剛果、烏干達、蘇丹、坦桑尼亞、盧旺達、安哥拉、贊比亞、布隆迪。

The product complies with the conflict metal norms, and confirm that your company selling products contain tin、tantalum、tungsten、gold four mineral, those sources are not come from Democratic Republic of the Congo and its neighboring countries of Congo、Uganda、San、Tanzania、Rwanda、Angola, Zambia, Burundi.

三、產品符合歐盟最新REACH (EC 1907/2006) 規範，

高關注物質(SVHC)，不超過 0.1%上限，以重量計算。

備註：請參照歐盟化學總署(ECHA)網站，最新的高關注物質清單。

This product complies with latest EU REACH (EC 1907/2006) norms.

The SVHC, are not over 0.1% threshold by weight.

Note: Please check ECHA website for latest SVHC list: <https://echa.europa.eu/candidate-list-table>

立書人提供給研揚的所有文件（含測試報告、聲明書、調查表等文件），均正確屬實並且完整。

All documents (including test reports, declarations, survey forms, etc.) provided by Declarant to AAEON shall be correct, true and complete.

如有違背此保證聲明書的規定，飛偉科技有限公司 (填寫公司名稱) 將承擔相關法律責任並賠償研揚所受損害。

If violates any provision of this Declaration, _____ (Fill in Company name) shall take legal responsibilities and compensate AAEON for damages and losses caused by this violation.

承認書

APPROVAL SHEET

客戶名稱
Customer: 研揚科技股份有限公司

飛偉料號
FW P/N: FWAA-1218

客戶料號
Cus. P/N: 1703401301

規格敘述
DESCRIPTION: 3.81mm 端子台 CABLE 160mm

審 核 Approved By	業 務 Sales Dept	品 保 QA Dept	工 程 Engineering Dept
王俊偉	張全生	劉江華	楊仁貴

客戶簽章

Customer Signature:

審 核 Approved By	核 對 Checked By	檢 驗 Tested By

飛偉科技有限公司

FLYINGWAY TECH CO., LTD

Address: 新北市永和區中和路345號7F-4

TEL: 02-22311313

FAX: 02-22311020

CONTACT: Chino Wang

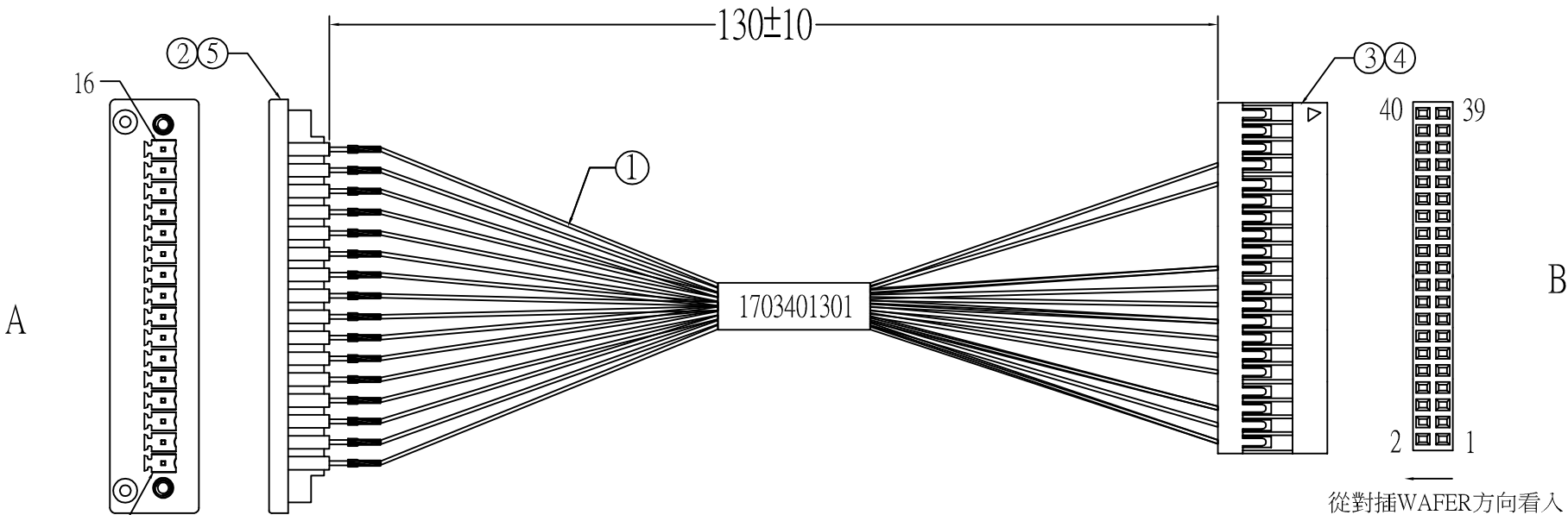
E-Mail: chino@flyingwaytech.com.tw

Cellphone: 0983588528

DATE: 2019/10/29

Pin對照表

A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B	2	1	4	6	5	10	11	14	16	15	17	20	22	21	31	34
顏色	紅	黃	橙	綠	黑	黑	藍	棕	白	灰	橙	綠	藍	棕	白	灰



5	套管: 厚 黑	16	pcs	WORE或同級品
4	TER:12541T2B-OA-51	16	pcs	JCTC或同級品
3	HSG:12541H00-2*20P	1	pcs	JCTC或同級品
2	端子台:ECHP381-16P	1	pcs	DINKLE或同級品
1	線材:UL1007#26 紅;黃;各1 / 黑;橙;綠;藍;棕;白;灰 各2 L=140*3.0T*3.5	共16	pcs	瑞興或同級品
NO	品 名 規 格	數量	單位	生產廠商

客戶工程師	Jimmy	
版次	變更內容	變更日期
A	新發行	2019/04/19
飛 偉 科 技 有 限 公 司 FLYINGWAY TECH CO., LTD		
TEL:02-2231-1313 FAX:02-2231-1020 E-MAIL:chino@flyingwaytech.com.tw		
TITLE: 3.81mm 端子台 CABLE 130mm		
FW P/N: FWAA-1218		
CUS. P/N: 1703401301		
REV: A	DWG BY: Silvia	CHECKED BY: Chino
		DATE: 2019/04/19



瑞興電線電纜製品廠

REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.

承 認 書
SPECIFICATION

品 名

STYLE NAME UL1007 PVC 環保電線

規 格

SIZE 80°C 300V

地址：東莞市長安鎮街口增田工業區

ADDRESS : TSENG TEN INDUSTRIAL PARK, CHEN KOU, CHANG AN TOWN,
DONG GUANG CITY, GUANG DONG, CHINA

TEL: 0769-85315656-9

FAX: 0769-85315655, 85330656

核 准 APPROVED	審 核 CHECK	制 定 PREPARED
		蒲國榮

客戶名稱 CUSTOMER	客 戶 確 認 CUSTOMER APPROVED



UL 1007 HOOK-UP WIRE

80°C 300V PVC 環保電子線

UL Subject 758

CSA Standard

說明:

- 導體使用單條或絞線 32-16AWG 裸銅或鍍錫銅
- 環保 PVC 絕緣
- 額定溫度:80°C, 額定電壓:300Volts
- 可通過 UL VW-1 及 CSA FT1, 垂直型耐燃測試

UL FILE NO:E108485

CSA FILE NO:LL84687

應用:

- 一般電子, 電器設備內部配線

Applications:

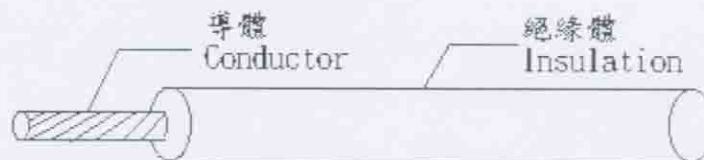
- For general purpose internal wiring of electrical and electrical equipment

Product Description:

- Tinned annealed stranded or solid copper conductor. 32-16AWG.
- Lead Free PVC insulation.
- Rated temperature:80°C.Rated Voltage:300 volts.
- Passes UL VW-1 & CSA FT1 vertical flame test.

構造及電氣性能


structure & electric properties



UL 1007 CSA TR-64	額 定 Range		導 體 Conductor		絕 緣 體 Insulation		公差值 Tolerance mm	最大導體	最小絕緣	絕緣耐電
	溫 度 Temp ℃	電 壓 Voltage V	線號 AWG	構 成 NO./mm	厚 度 Thickness mm	外徑 O.D mm		阻抗 Maximum Conductor Resistance Ω/km	阻抗 Minimum Insulation Resistance MΩ/km	壓(VAC/min) Insulation Potential Strength
STRANDED 多 芯 線	UL 80℃	300V	32	7/0.080	0.38	1.00	±0.10	703	15	2000
			30	7/0.100	0.38	1.10	±0.10	397		
			28	7/0.127	0.38	1.20	±0.10	248		
			26	7/0.160	0.38	1.30	±0.10	152		
			24	11/0.160	0.38	1.45	±0.10	88.6		
			22	17/0.160	0.38	1.60	±0.10	62.5		
			20	21/0.180	0.38	1.85	±0.10	39.5		
			18	34/0.180	0.38	2.10	±0.10	24.4		
			16	26/0.254	0.38	2.40	±0.10	15.6		
			30	7/0.100	0.38	1.10	±0.10	397		
Top-Coated (ATC) 先 絞 后 鍍	28		7/0.127	0.38	1.20	±0.10	248.0			
	26		7/0.160	0.38	1.30	±0.10	152.0			
	24		7/0.200	0.38	1.45	±0.10	88.6			
	22		7/0.254	0.38	1.60	±0.10	62.5			
	20		7/0.320	0.38	1.85	±0.10	39.5			
	28		1/0.320	0.38	1.15	±0.10	326.9			
	26		1/0.404	0.38	1.25	±0.10	155			
	24		1/0.511	0.38	1.40	±0.10	92.4			
	22		1/0.643	0.38	1.55	±0.10	60.1			
	20		1/0.813	0.38	1.70	±0.10	37.0			
Solid(TA) 單 芯 線	18	1/1.020	0.38	1.96	±0.10	23.6				

瑞興電線電纜製品廠
REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.
承 認 書
SPECIFICATION

型號 STYLE			UL 1007								CSA TR-64	
額定溫度/電壓 RATING TEMP./VOLT.			80℃/300V								90℃/	
導體 CONDUCTOR	線號 SIZE		AWG	30	28	26	24	22	20	18	16	SAME AS UL
	芯數 NUMBER		NO.	7	7	7	11	17	21	34	26	
	銅線直徑 DIAMETER		MM	0.100	0.127	0.160	0.160	0.160	0.180	0.180	0.254	
	最小銅線直徑 MIN.DIAMETER		MM	0.090	0.116	0.150	0.150	0.150	0.170	0.170	0.240	
	導體截面積 CROSS SEC AREA OF COND	AVG	CM	100	159	253	404	640	1020	1620	2580	
		MIN		98	156	248	392	621	989	1571	2503	
	絞距 LAY OF BUNCH		INCH	0.50	0.50	0.60	0.70	0.80	1.25	2.00	2.00	
最大電阻 MAX.RESISTANCE		Ω/KM	397	248	152	88.6	62.5	39.5	24.4	15.6		
絕緣體 INSULATION	完成外徑 O.D. (±0.10)		MM	1.10	1.20	1.30	1.45	1.60	1.85	2.10	2.40	
	絕緣體厚度 INSULATION THICKNESS	AVG	MIL	15							15	
		MIN		13							13	
		外被厚度 JACKET THICKNESS	AVG	MIL	/							/
MIN			/							/		
最小絕緣電阻 INSULATION RESISTANCE			MΩ/KM	15							15	
火花試驗 SPARK TEST			KV	3							5	
最小伸長率 ELONGATION			%	100							100	
最小抗張強度 TENSIL STRENGTH			PSI	1500							1500	
最小老化後伸長率 LO.(AFTER AGING)			%	OF UNAGED 65							65	
最小老化後抗張強度 TEN.ST.(AFTER AGING)			%	OF UNAGED 70							75	
老化試驗溫度/條件 AGING TEMP./TIME				113℃/168HRS							121℃/48HRS	
耐油試驗 OIL IMMERSION TEST				100℃/96HRS 50%							/	
耐燃燒試驗 FIAME TEST				VW-1							FT1	
高溫纏繞試驗 HEAT SHOCK TEST				121℃/1HR 1.60MM MANDREL							121℃/1HRS	
加熱變形試驗 DEFORMATION TEST				121℃/1HR 250G 50%							113℃/1HR 150G 50%	
低溫纏繞試驗 COLD BEND TEST				-10℃/1HR 3.2MM MANDREL							-15℃/1HR	
耐電壓試驗 INSULATION POTENTIALST				2KVAC/min							2KVAC/min	


MARK:  AWM 1007 VW-1 80°C 300V E108485-S ()AWG REI HSING
CSA TR-64 90°C LL84687 ()AWG FT1-F-LF

ISSUED	2000-01-28	APPROVED	CHECKED	PREPARED
REVISION	2006-12-25			蒲國榮

瑞興電線電纜製品廠
REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.

承 認 書
SPECIFICATION

型號 STYLE			UL 1007						CSA TR-64	
額定溫度/電壓 RATING TEMP./VOLT.			80℃/300V						90℃/	
導體 CONDUCTOR	線號 SIZE		AWG	28	26	24	22	20	18	SAME AS UL
	芯數 NUMBER		NO.	1	1	1	1	1	1	
	銅線直徑 DIAMETER		MM	0.320	0.404	0.511	0.643	0.813	1.020	
	最小銅線直徑 MIN.DIAMETER		MM	0.300	0.380	0.490	0.610	0.780	0.980	
	最大電阻 MAX.RESISTANCE		Ω/KM	232.1	155	92.4	60.1	37.0	23.6	
絕緣體 INSULATION	完成外徑 O.D. (±0.10)		MM	1.15	1.25	1.40	1.55	1.70	1.96	
	絕緣體厚度 INSULATION THICKNESS	AVG	MIL	15						15
		MIN		13						13
	外被厚度 JACKET THICKNESS	AVG	MIL	/						/
		MIN		/						/
最小絕緣電阻 INSULATION ESISTANCE			MΩ/KM	15						15
火花試驗 SPARK TEST			KV	3						5
最小伸長率 ELONGATION			%	100						100
最小抗張強度 TENSIL STRENGTH			PSI	1500						1500
最小老化後伸長率 L.O.(AFTER AGING)			%	OF UNAGED 65						65
最小老化後抗張強度 TEN.ST.(AFTER AGING)			%	OF UNAGED 70						75
老化試驗溫度/條件 AGING TEMP./TIME				113℃/168HRS						121℃/48HRS
耐油試驗 OIL LMMERSION TEST				100℃/96HRS 50%						/
耐燃燒試驗 FIAME TEST				VW-1						FT1
高溫纏繞試驗 HEAT SHOCK TEST				121℃/1HR 1.60MM MANDREL						121℃/1HRS
加熱變形試驗 DEFORMATION TEST				121℃/1HR 250G 50%						113℃/1HR 150G 50%
低溫纏繞試驗 COLD BEND TEST				-10℃/1HR 3.2MM MANDREL						-15℃/1HR
耐電壓試驗 INSULATION POTENTIALST				2KVAC/min						2KVAC/min

MARK:  AWM 1007 VW-1 80°C 300V E108485-S ()AWG REI HSING
CSA TR-64 90°C LL84687 ()AWG FT1 -F- LF

ISSUED	2000-01-28	APPROVED	CHECKED	PREPARED
REVISION	2006-12-25			蒲國榮



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File E108485

Vol. 2

Issued: 01-17-97

Revised: 5-9-01

FOLLOW-UP SERVICE PROCEDURE
(TYPE L)

COMPONENT - APPLIANCE WIRING MATERIAL (AVLV2, AVLV8)

Manufacturer: REI HSING WIRE & CABLE CO LTD
(342072-001) TSENG TEN INDUSTRIAL PARK
CHEN KOU
CHANG AN TOWN
DONGGUAN GUANGDONG CHINA

* Applicant: REI HSING WIRE CO LTD
(559504-001) 56-5 JIUN-ING ST
SHUH-LIN CITY
TAIPEI HSIEN TAIWAN

* Recognized SAME AS APPLICANT
Company:
(559504-001):

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The Prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and the representatives of Underwriters Laboratories Inc. and is not used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

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J. J. Ritchie
Vice President

Laboratory Management and Operations

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*

TABLE OF AUTHORIZED STYLES
SINGLE-CONDUCTOR THERMOPLASTIC-INSULATED WIRE

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Date: 30 Jan 2019

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ

Model No. : I-PVC-01

Client Ref. Info. : I-PE-01;I-TPE-01; I-PP-01; I-PU-01; I-RU-01; I-TPR-01;I-PPE-01

Date of Sample Received : 22 Jan 2019

Testing Period : 22 Jan 2019 - 30 Jan 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



Test Report (SVHC)

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.002	White liquid	6
SN2	CAN19-014883.005	White liquid	181
SN3	CAN19-014883.008	White liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	002 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	005 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	008 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum
RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



SGS-CSTC Shanghai Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	005
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	005
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	005
I	4	Anthracene	120-12-7	0.050	005
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	005
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	005
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	005
I	8	Cobalt dichloride*	7646-79-9	0.005	005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	005
I	10	Diarsenic trioxide*	1327-53-3	0.005	005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	005
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4,319 4- 55-6	0.050	005
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	005
I	15	Triethyl arsenate*	15606-95-8	0.005	005
II	16	2,4-Dinitrotoluene	121-14-2	0.050	005
II	17	Acrylamide	79-06-1	0.050	005
II	18	Anthracene oil**	90640-80-5	0.050	005
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	005



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Guangzhou Branch Testing Center Chemical Laboratory

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	005
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	005
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	005
II	23	Diisobutyl phthalate	84-69-5	0.050	005
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	005
II	25	Lead chromate*	7758-97-6	0.005	005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	005
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	005
III	29	Ammonium dichromate*	7789-09-5	0.005	005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	005
III	32	Potassium chromate*	7789-00-6	0.005	005
III	33	Potassium dichromate*	7778-50-9	0.005	005
III	34	Sodium chromate*	7775-11-3	0.005	005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	005
III	36	Trichloroethylene	79-01-6	0.050	005
IV	37	2-Ethoxyethanol	110-80-5	0.050	005
IV	38	2-Methoxyethanol	109-86-4	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	005
IV	40	Chromium trioxide*	1333-82-0	0.005	005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	005
V	45	1,2,3-trichloropropane	96-18-4	0.050	005
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	005
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	005
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	005
V	49	2-ethoxyethyl acetate	111-15-9	0.050	005
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	005
V	51	Strontium chromate*	7789-06-2	0.005	005
VI	52	1,2-Dichloroethane	107-06-2	0.050	005
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	005
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	005
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	005
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	005
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	005
VI	60	Calcium arsenate*	7778-44-1	0.005	005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	005
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	005
VI	64	Lead dipicrate*	6477-64-1	0.005	005
VI	65	Lead styphnate*	15245-44-0	0.005	005
VI	66	N,N-dimethylacetamide	127-19-5	0.050	005
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	005
VI	68	Phenolphthalein	77-09-8	0.050	005
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	005
VI	70	Trilead diarsenate*	3687-31-8	0.005	005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	005
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	005
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	005
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	005
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	005
VII	78	Diboron trioxide*	1303-86-2	0.005	005
VII	79	Formamide	75-12-7	0.050	005
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	005
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	005
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	005
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	005
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	005
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	005
VIII	88	1-Bromopropane	106-94-5	0.050	005
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	005
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	005
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	005
VIII	93	4-Aminoazobenzene	60-09-3	0.050	005
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	005
VIII	95	4-Nonylphenol, branched and linear	-	0.050	005
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	005
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	005
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	005
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	005
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	005
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	005
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	005
VIII	103	Diethyl sulphate	64-67-5	0.050	005
VIII	104	Diisopentylphthalate	605-50-5	0.050	005
VIII	105	Dimethyl sulphate	77-78-1	0.050	005
VIII	106	Dinoseb	88-85-7	0.050	005
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	005
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	005
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	005
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	005
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	005
VIII	114	Lead cyanamidate*	20837-86-9	0.005	005
VIII	115	Lead dinitrate*	10099-74-8	0.005	005
VIII	116	Lead monoxide*	1317-36-8	0.005	005
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	005
VIII	121	Methoxyacetic acid	625-45-6	0.050	005
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	005
VIII	123	N,N-dimethylformamide	68-12-2	0.050	005
VIII	124	N-Methylacetamide	79-16-3	0.050	005
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	005
VIII	126	o-Aminoazotoluene	97-56-3	0.050	005
VIII	127	o-Toluidine	95-53-4	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	005
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	005
VIII	134	Tetraethyllead*	78-00-2	0.005	005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	005
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	005
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	005
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	005
IX	141	Cadmium oxide*	1306-19-0	0.005	005
IX	142	Cadmium*	7440-43-9	0.005	005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	005
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	005
X	145	Cadmium sulphide*	1306-23-6	0.005	005
X	146	Dihexyl phthalate	84-75-3	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	005
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	005
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	005
X	150	Lead di(acetate)*	301-04-2	0.005	005
X	151	Trixylyl phosphate	25155-23-1	0.050	005
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	005
XI	153	Cadmium chloride*	10108-64-2	0.005	005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	005
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	005
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	005
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	005
XII	159	Cadmium fluoride*	7790-79-6	0.005	005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	005
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	005
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	005
XIV	164	1,3-propanesultone	1120-71-4	0.050	005
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	005
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	005
XIV	167	Nitrobenzene	98-95-3	0.050	005
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	005
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	005
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	005
XVI	171	4-Heptylphenol, branched and linear	-	0.050	005



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	005
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	005
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	005
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	005
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	005
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	005
XVIII	178	Cadmium carbonate*	513-78-0	0.005	005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	005
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	005
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	008
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	008
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	008
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	008
XIX	186	Disodium octaborate*	12008-41-2	0.005	008



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	008
XIX	188	Ethylenediamine	107-15-3	0.050	008
XIX	189	Lead*	7439-92-1	0.005	008
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	008
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	008
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	002
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	002
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	002
XX	195	Fluoranthene	206-44-0	0.050	002
XX	196	Phenanthrene	85-01-8	0.050	002
XX	197	Pyrene	129-00-0	0.050	002



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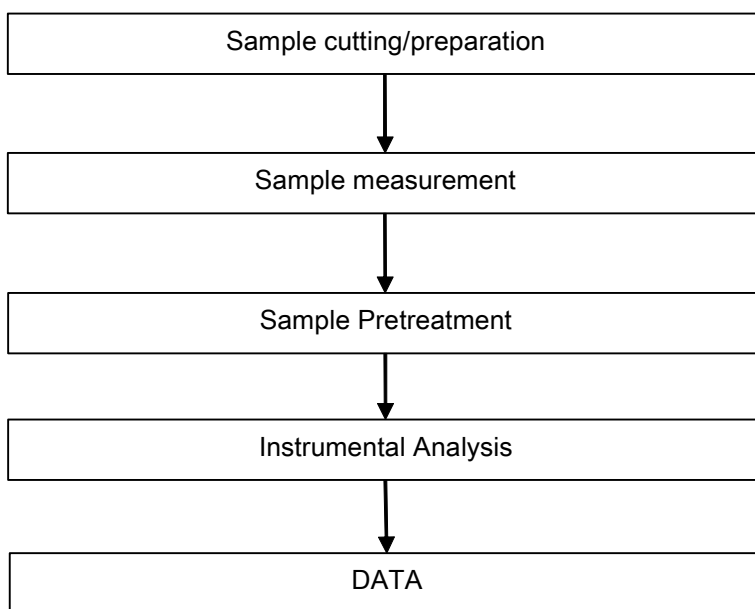
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SVHC Testing Flow Chart



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Sample photo:



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Test Report

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Date: 21 Jun 2019

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SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

This report is to supersede test report CANEC1910676513

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-02

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



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Test Report

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.003	Black liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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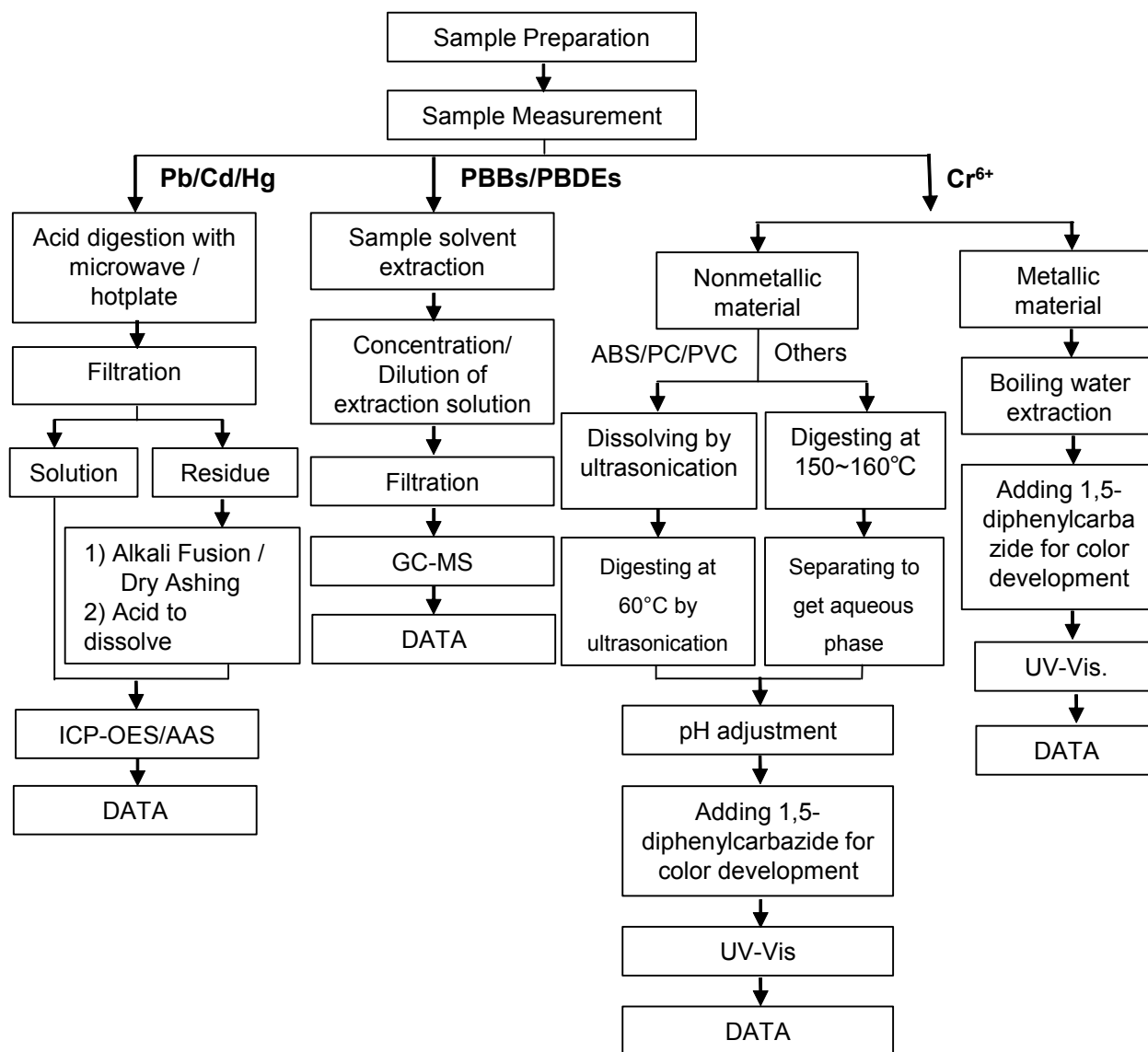
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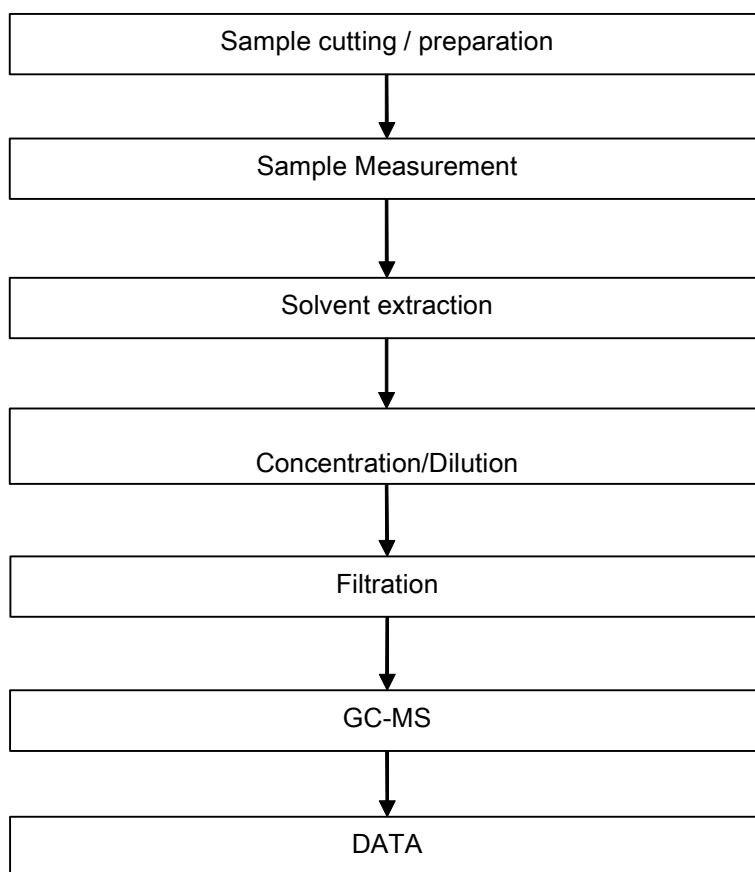
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



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Sample photo:



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Test Report



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Report No. A2190175998101034

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BROWN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	96 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Brown wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

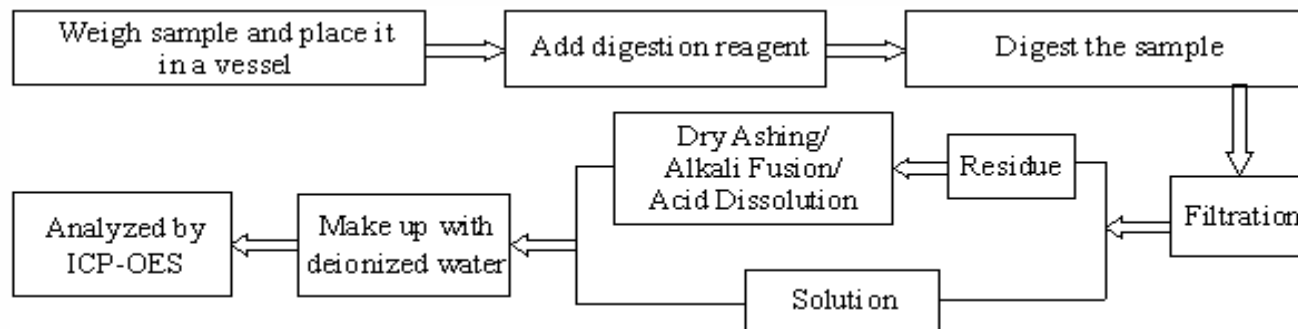
Test Report

Report No. A2190175998101034

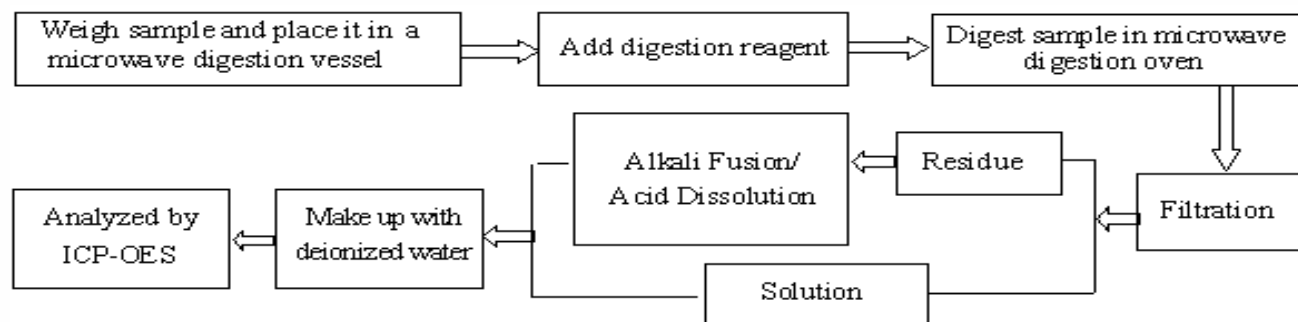
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Test Process

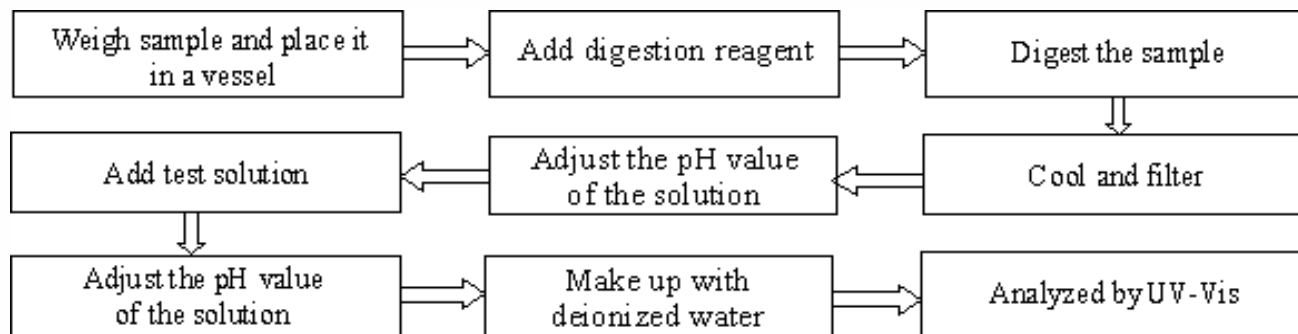
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



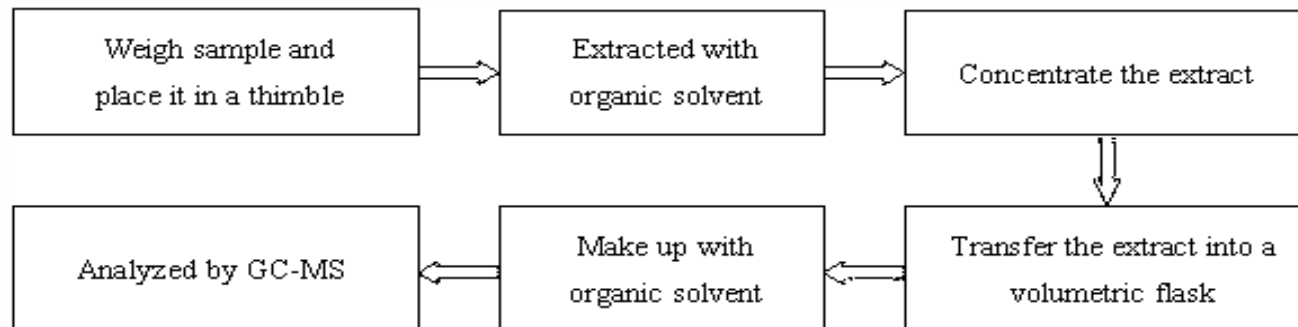
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

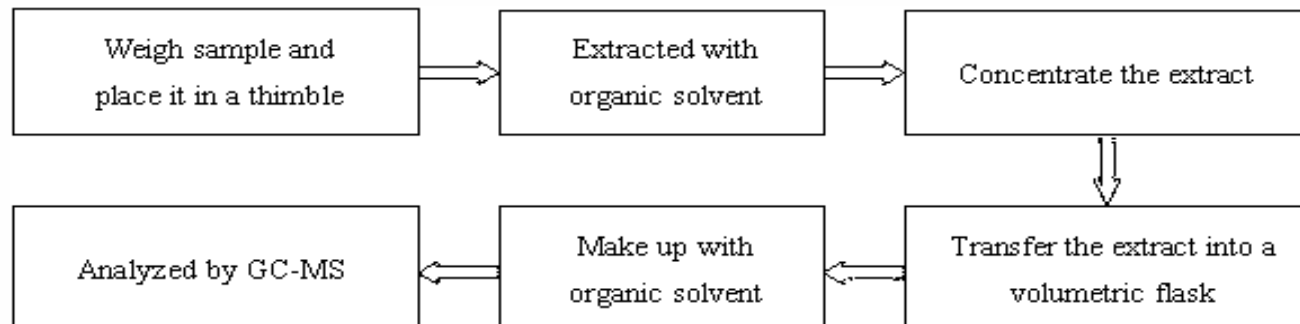


Test Report

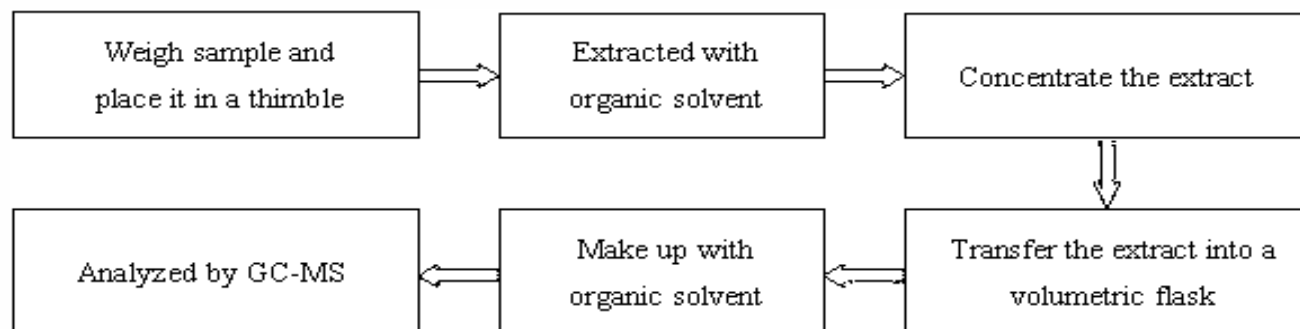
Report No. A2190175998101034

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101034

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

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2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101028

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name GREEN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101028

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101028

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101028

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	350 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Green wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

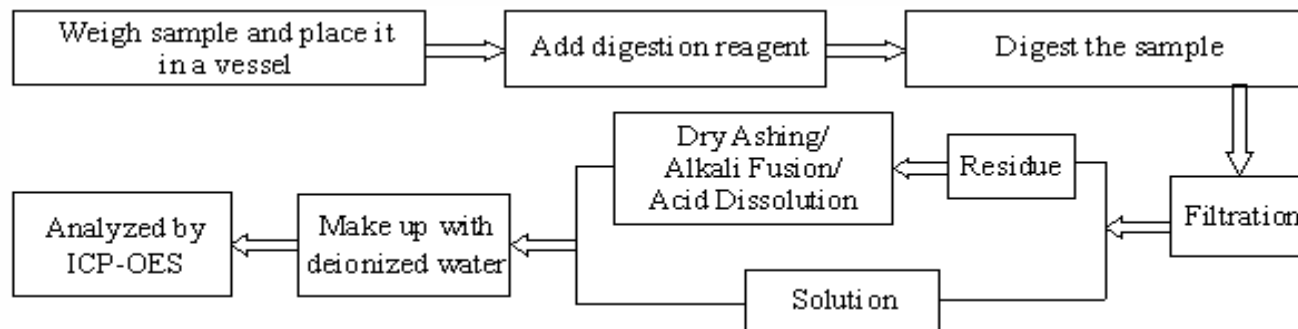
Test Report

Report No. A2190175998101028

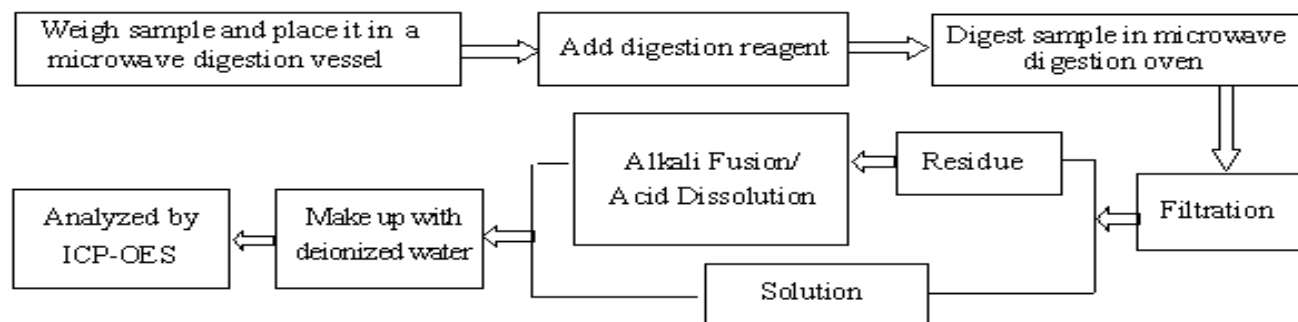
Page 5 of 7

Test Process

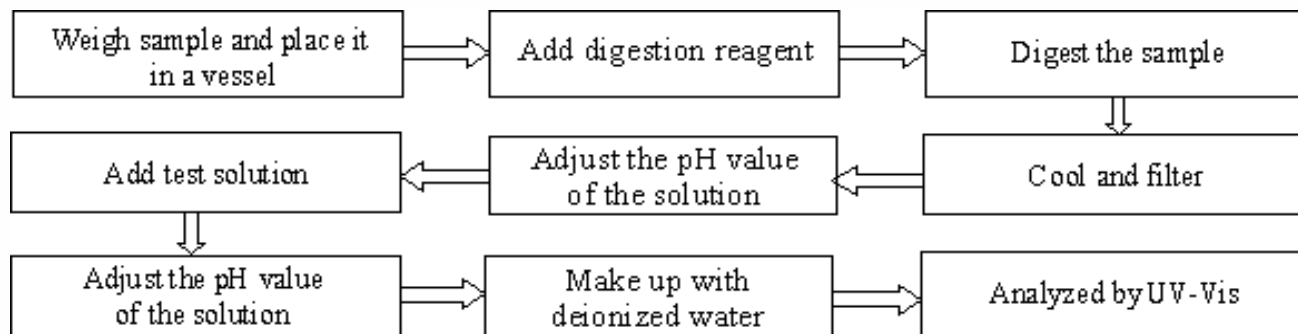
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



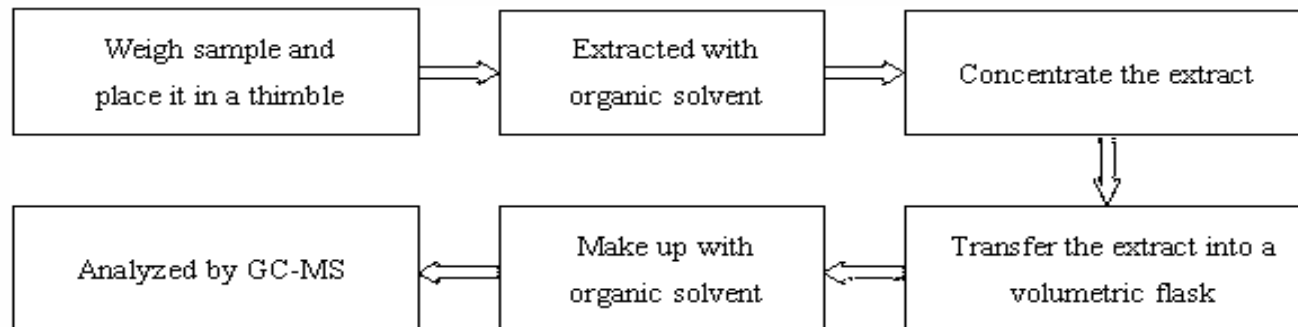
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

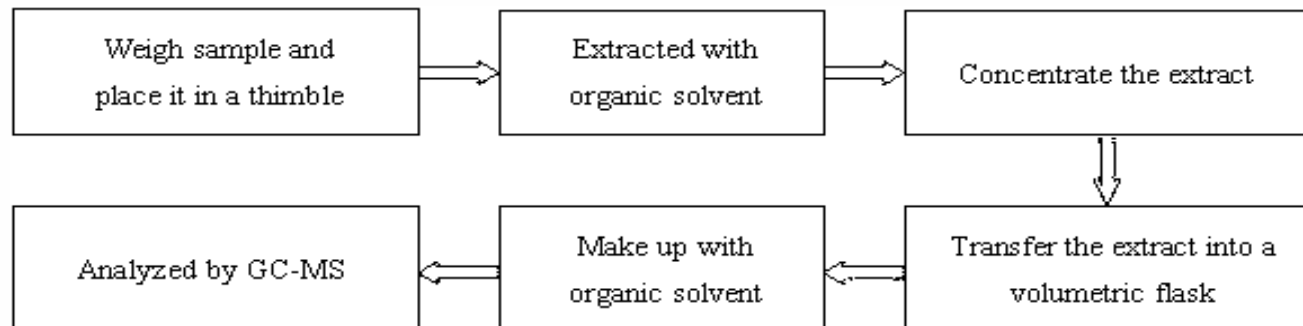


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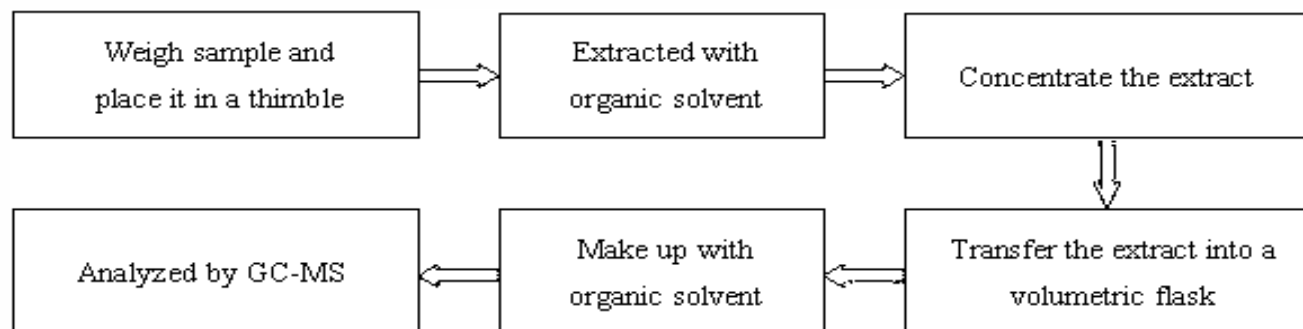
Report No. A2190175998101028

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101028

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



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Report No. A2190175998101025

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLUE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101025

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101025

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101025

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	102 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Blue wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

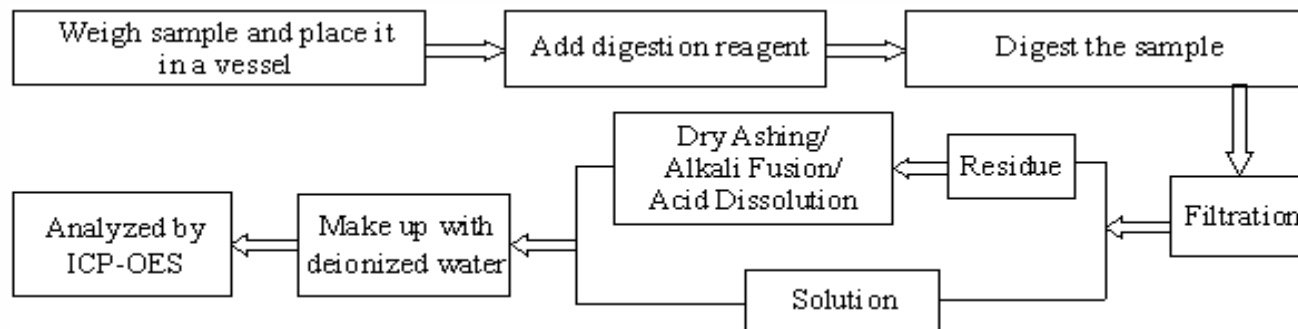
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Report No. A2190175998101025

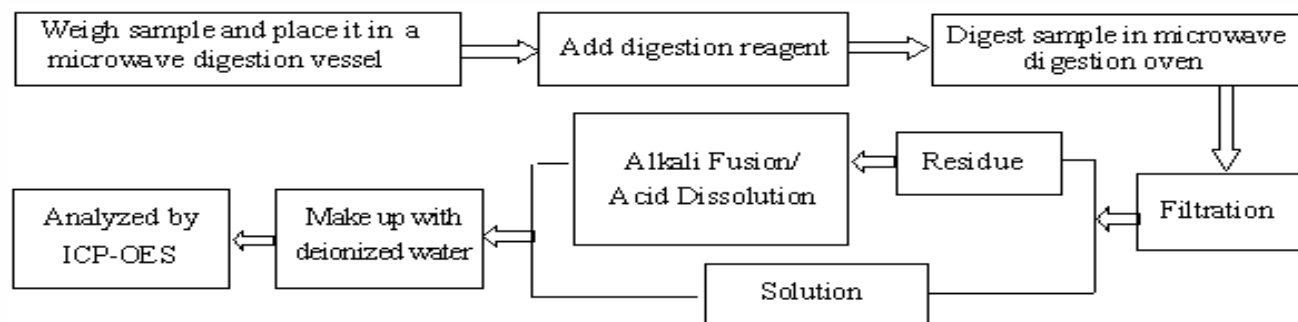
Page 5 of 7

Test Process

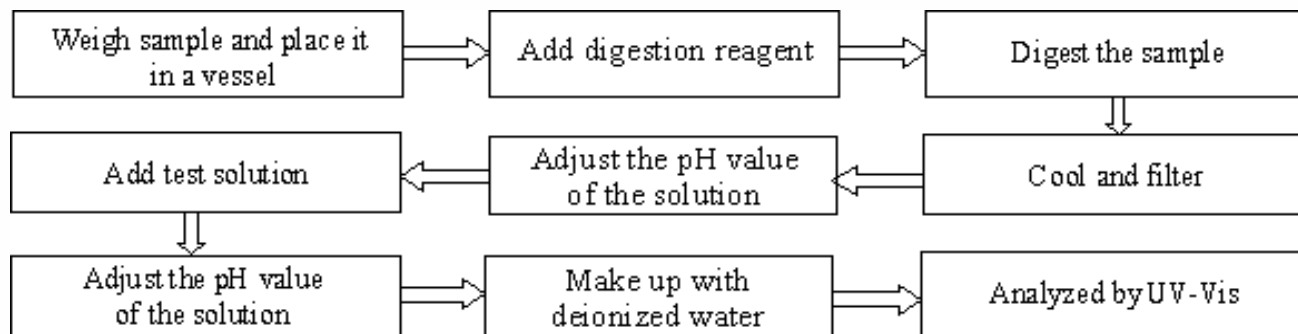
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



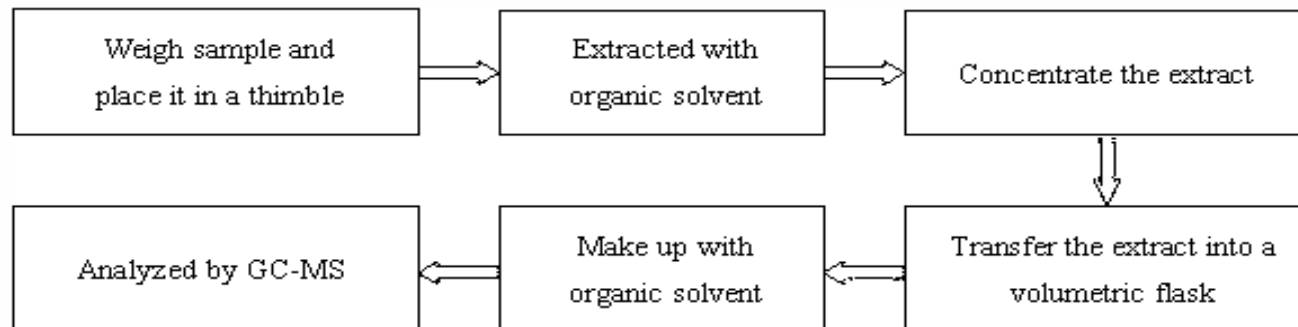
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

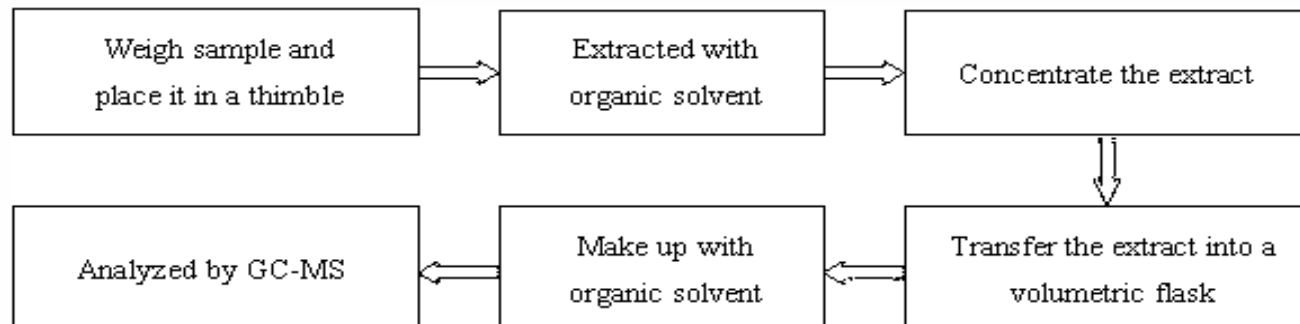


Test Report

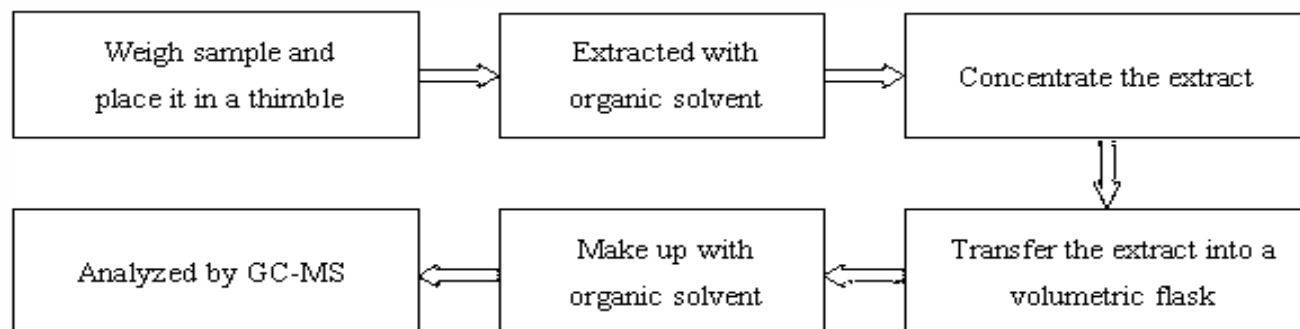
Report No. A2190175998101025

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

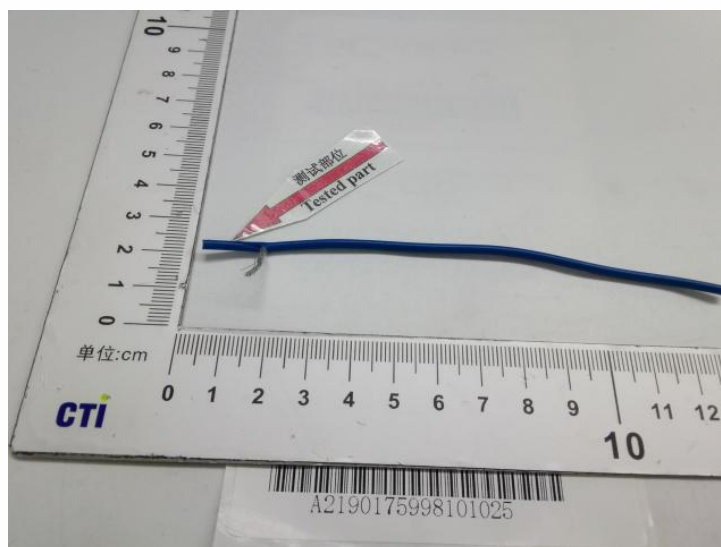


Test Report

Report No. A2190175998101025

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Photo(s) of the sample(s)



*** End of report ***

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Test Report



Page 1 of 7

Report No. A2190175998101022

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name GREY PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101022

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101022

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101022

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	113 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Grey wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

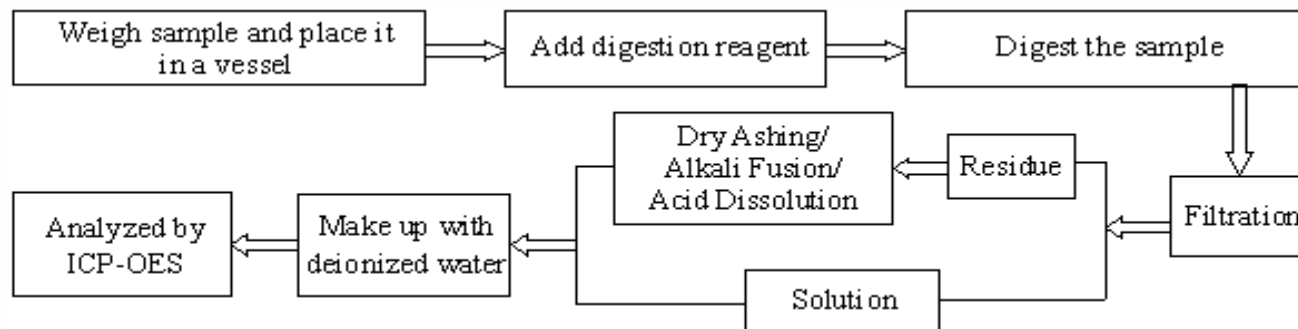
Test Report

Report No. A2190175998101022

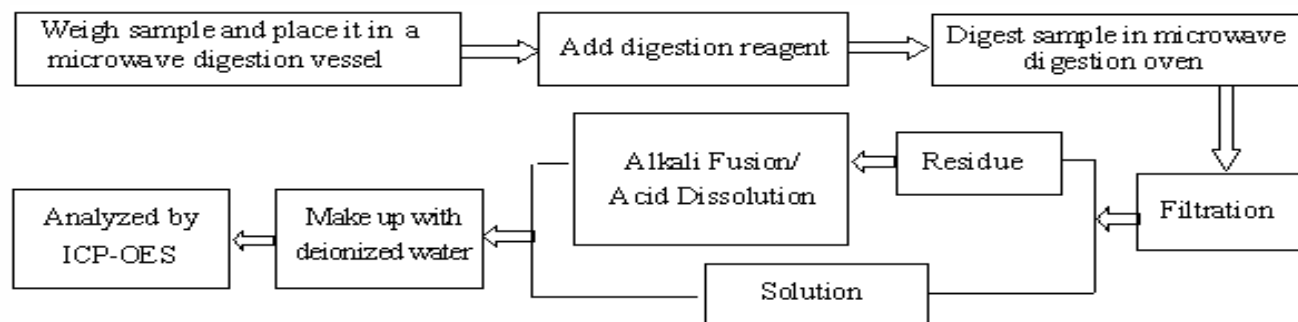
Page 5 of 7

Test Process

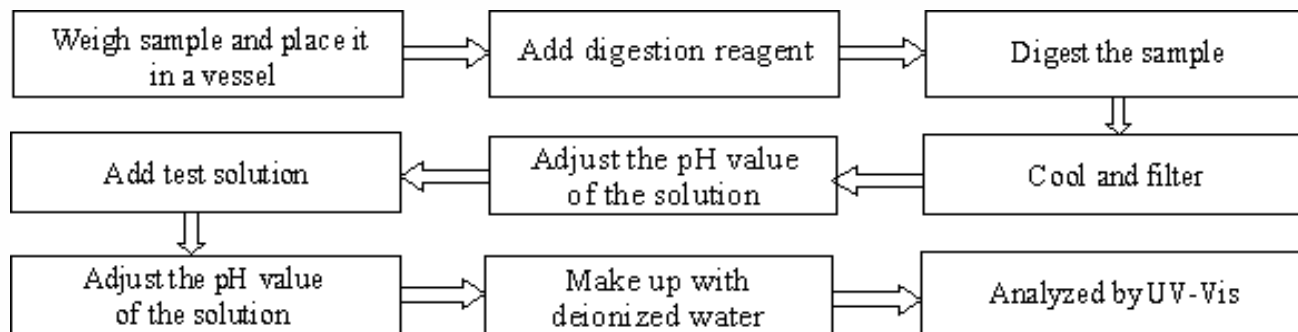
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



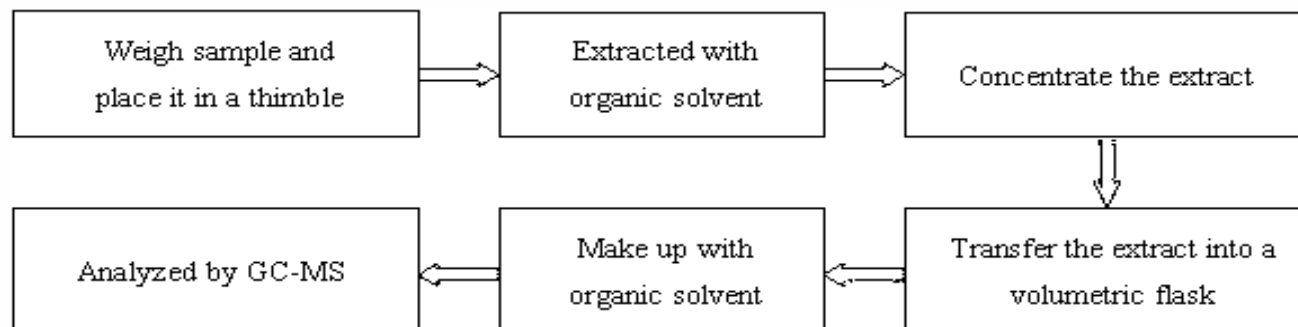
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

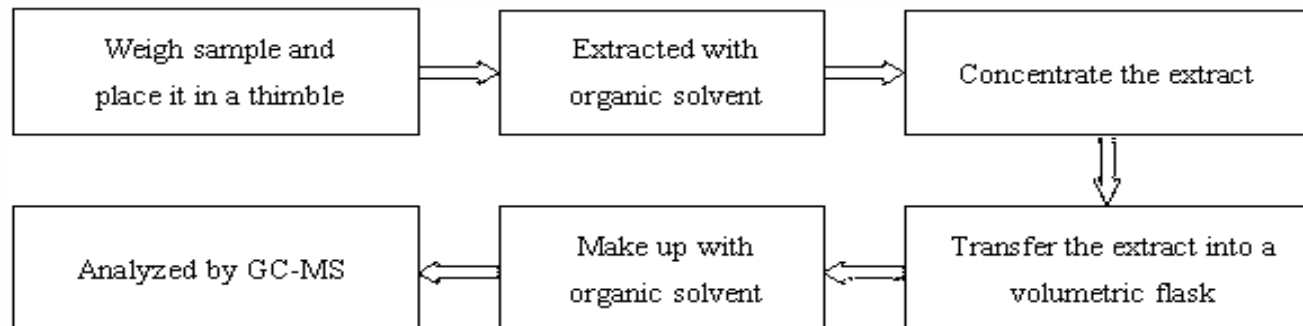


Test Report

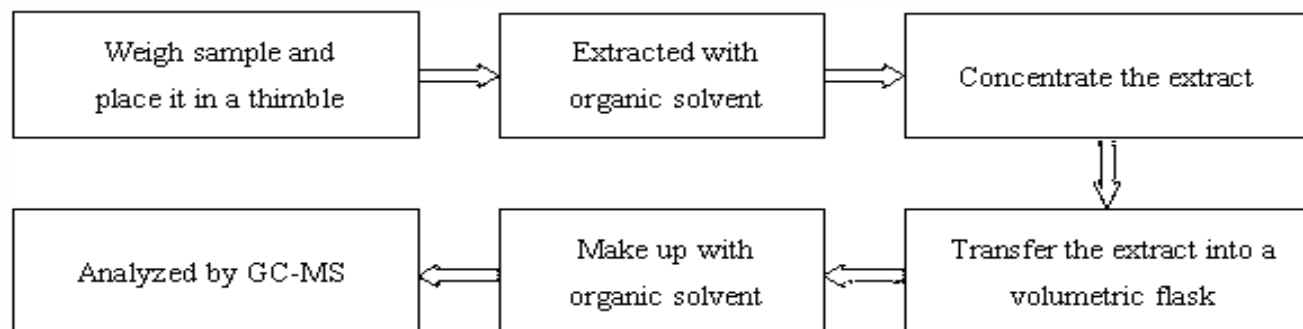
Report No. A2190175998101022

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101022

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101019

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name YELLOW PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101019

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101019

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101019

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)		
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Yellow wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

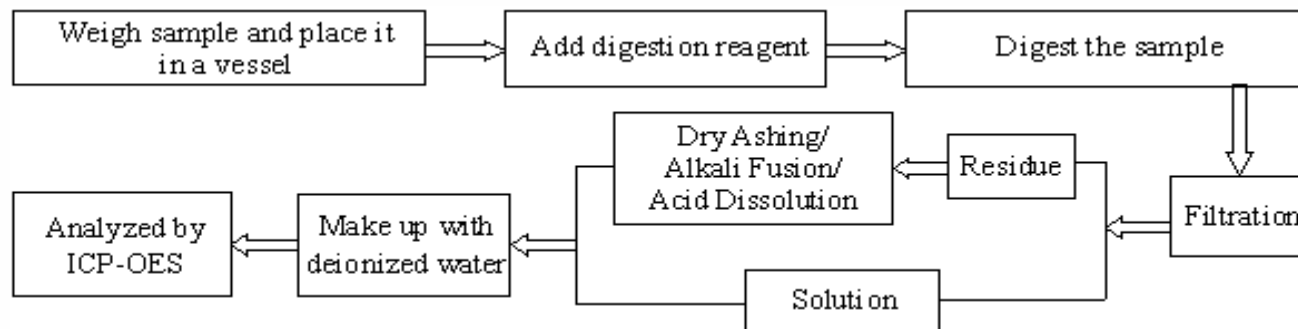
Test Report

Report No. A2190175998101019

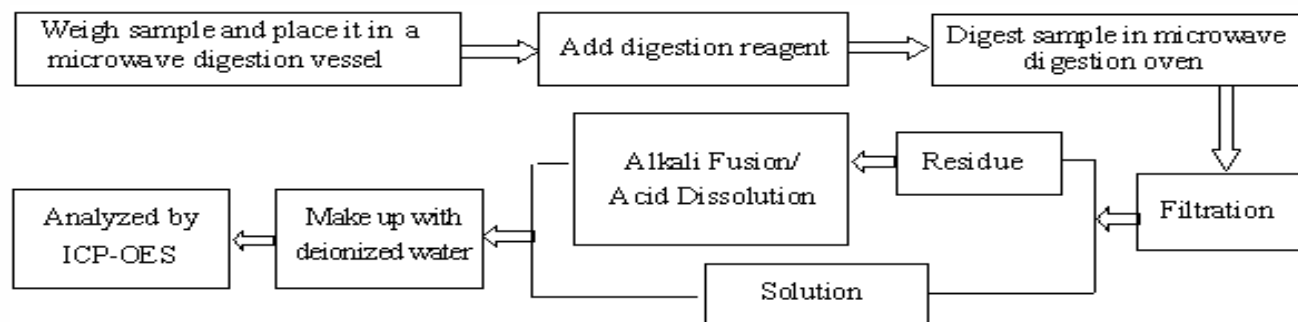
Page 5 of 7

Test Process

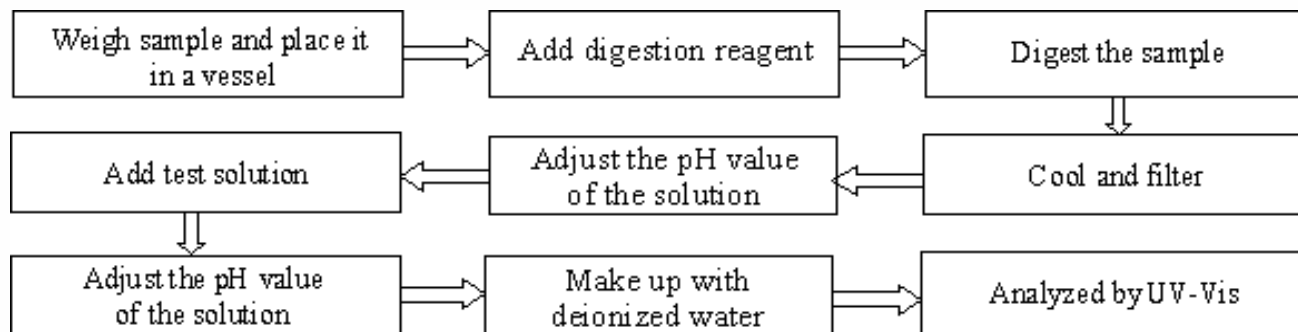
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



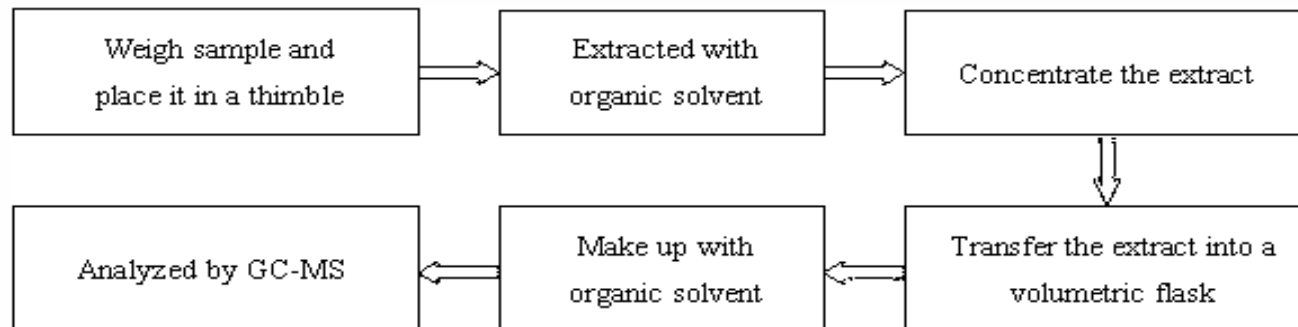
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

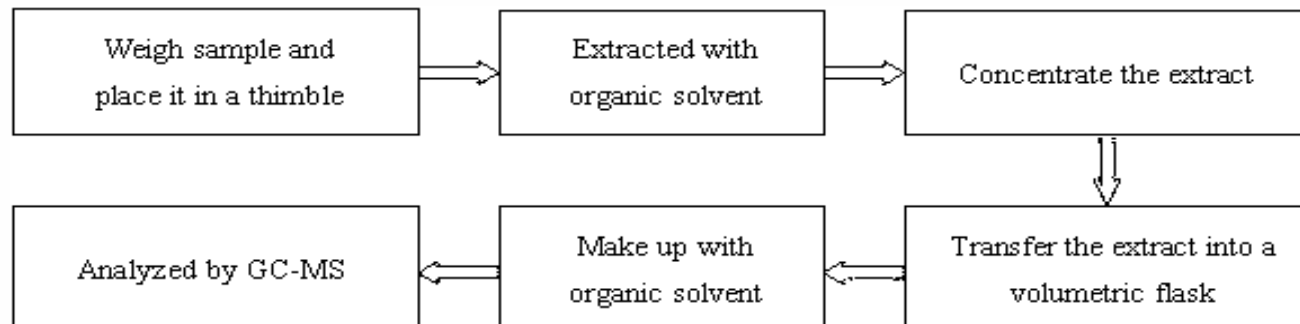


Test Report

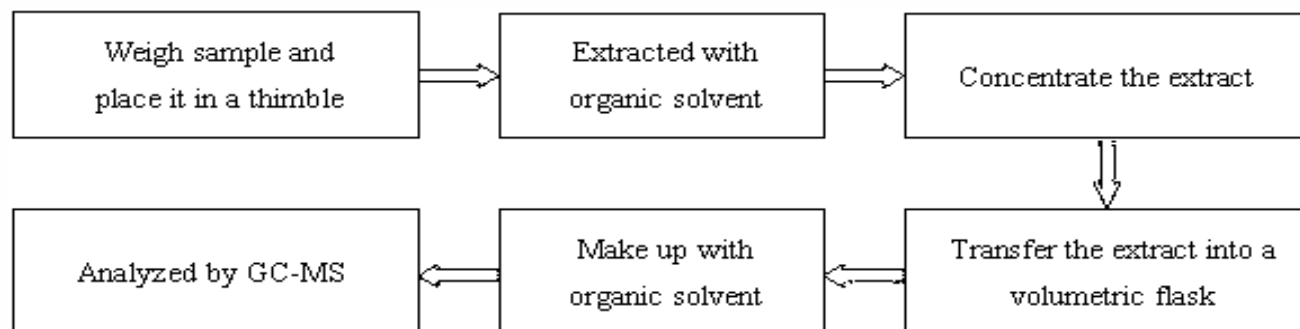
Report No. A2190175998101019

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

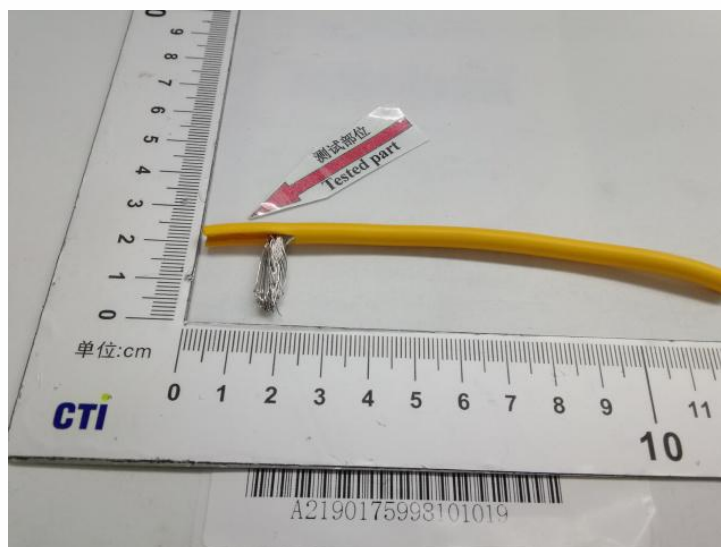


Test Report

Report No. A2190175998101019

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101013

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name RED PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101013

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101013

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101013

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Red wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

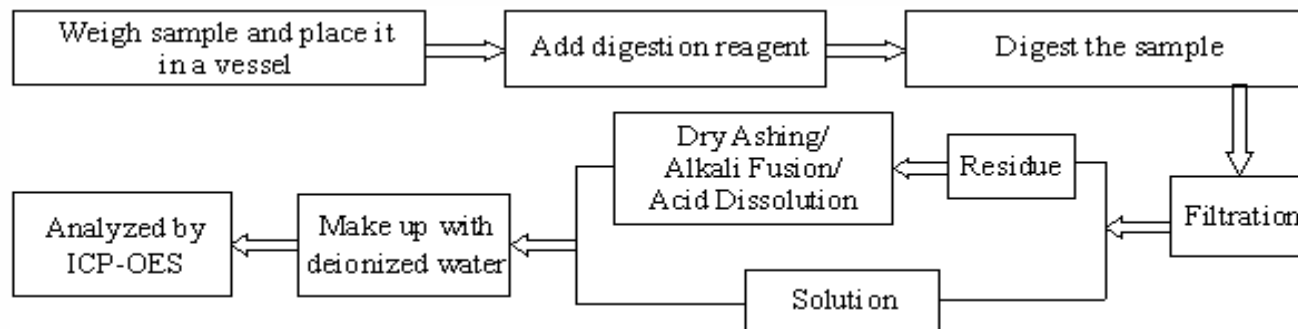
Test Report

Report No. A2190175998101013

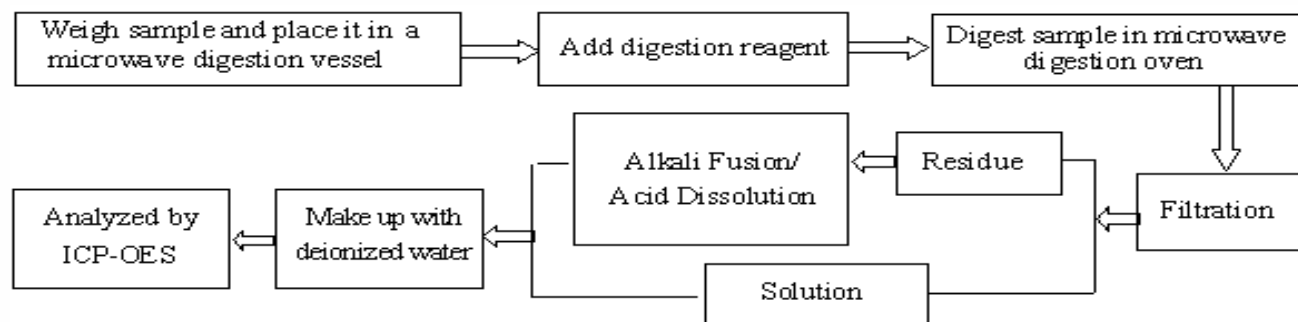
Page 5 of 7

Test Process

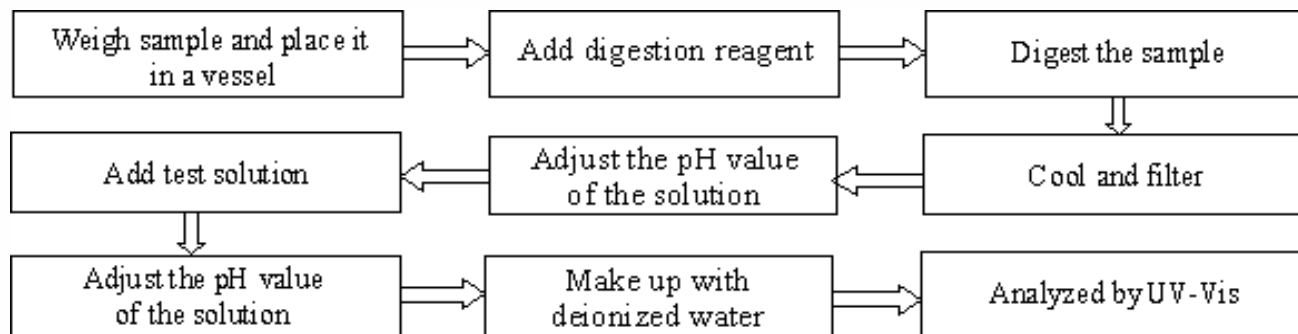
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



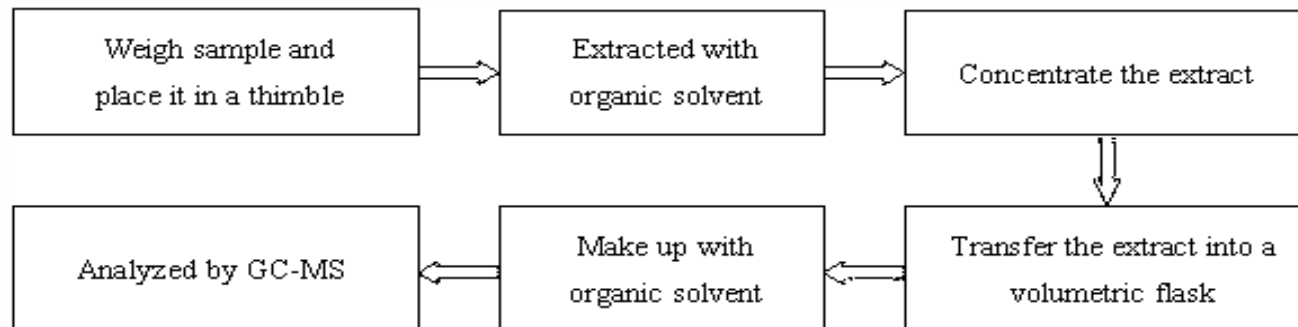
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

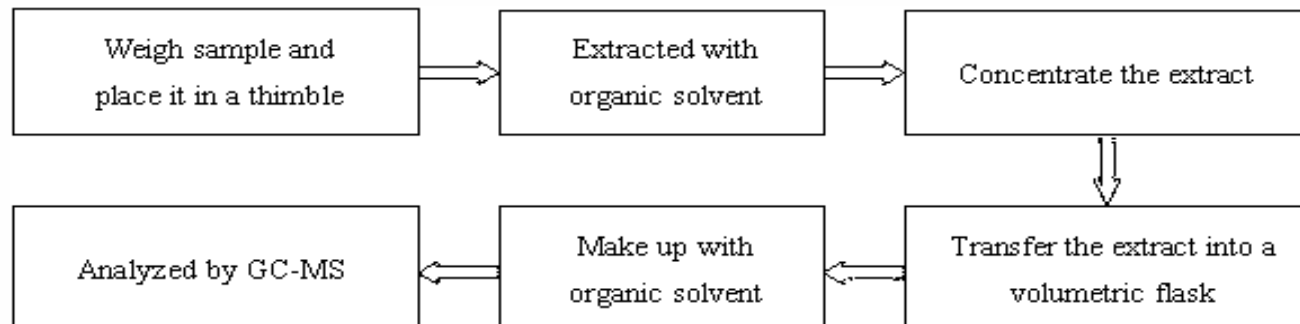


Test Report

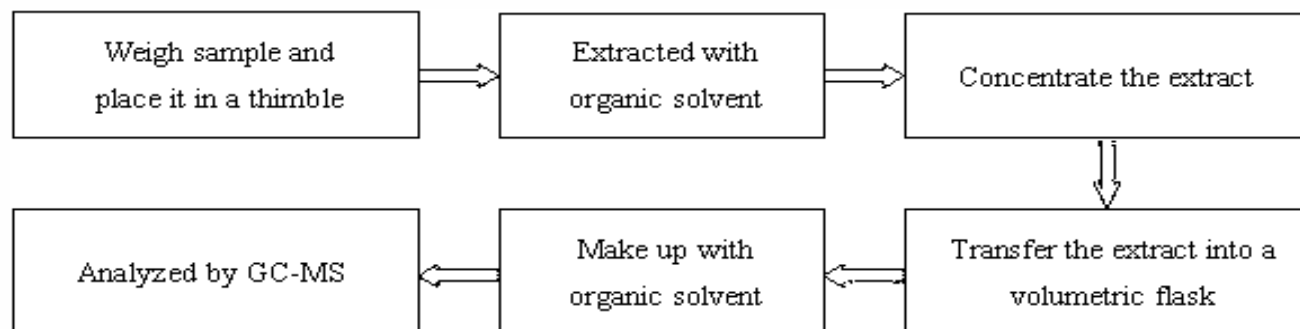
Report No. A2190175998101013

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

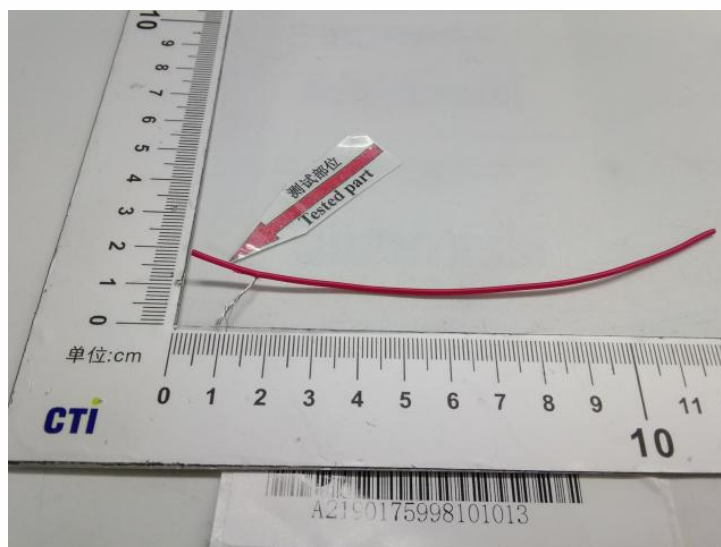


Test Report

Report No. A2190175998101013

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report



Page 1 of 7

Report No. A2190175998101010

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLACK PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101010

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101010

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101010

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	138 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Black wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

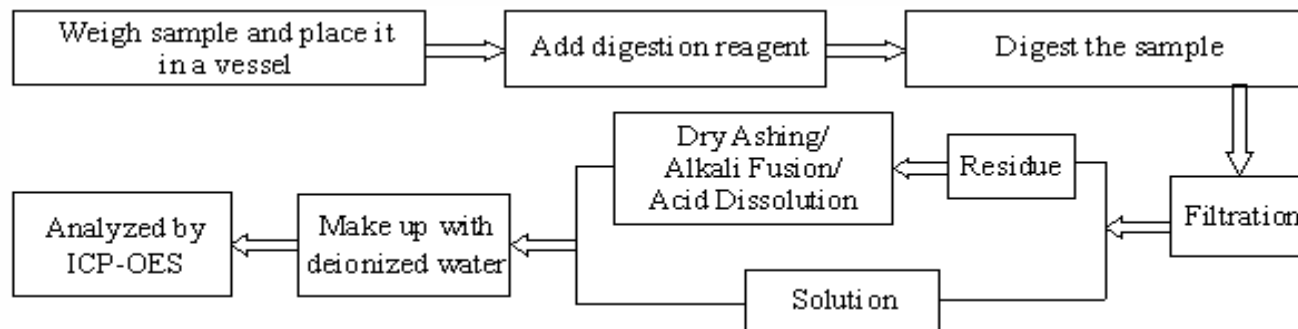
Test Report

Report No. A2190175998101010

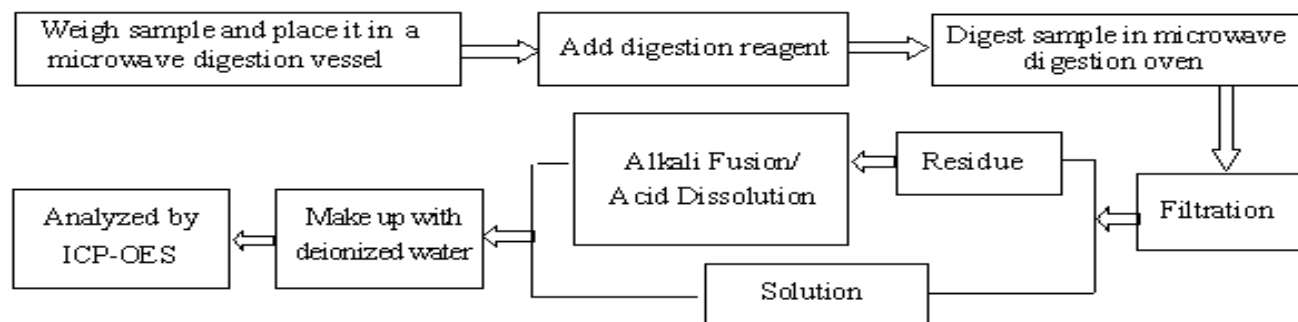
Page 5 of 7

Test Process

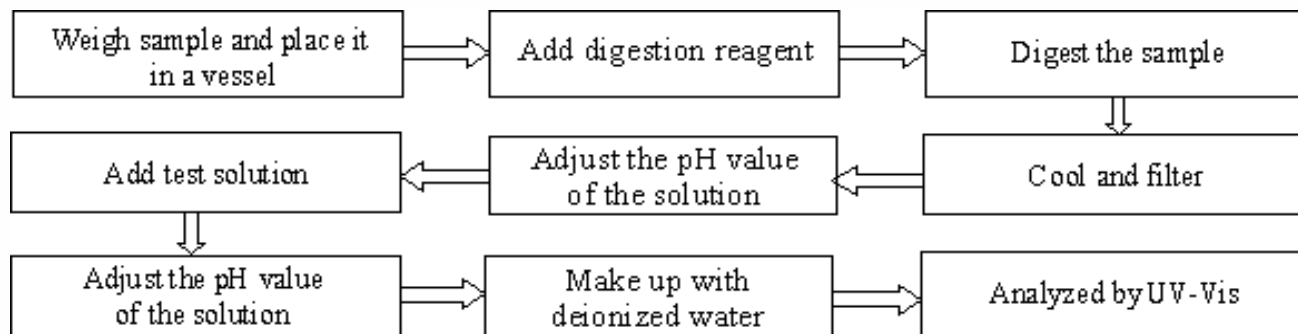
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



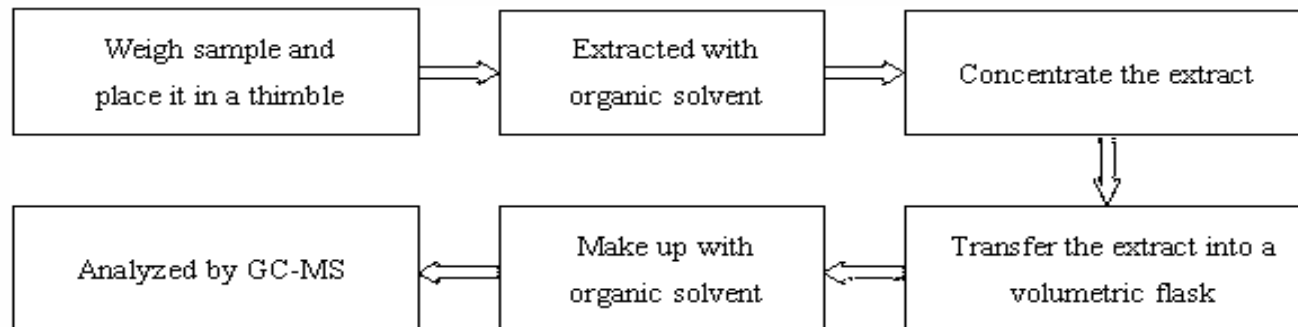
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

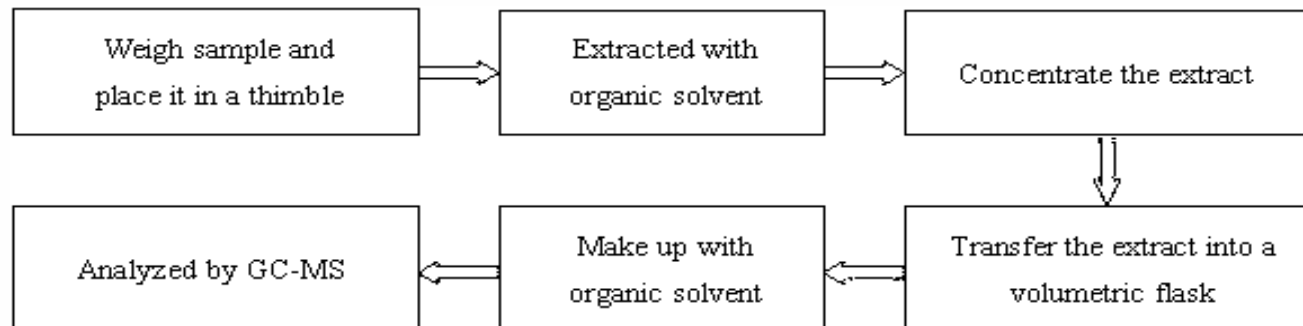


Test Report

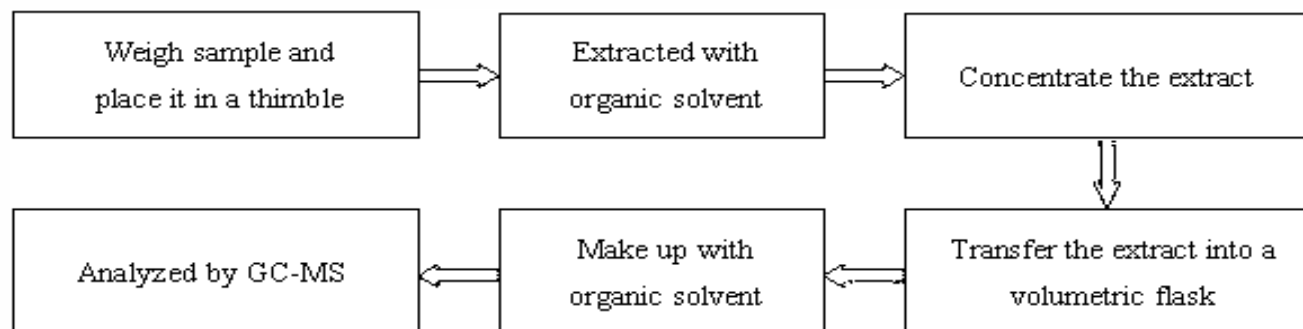
Report No. A2190175998101010

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

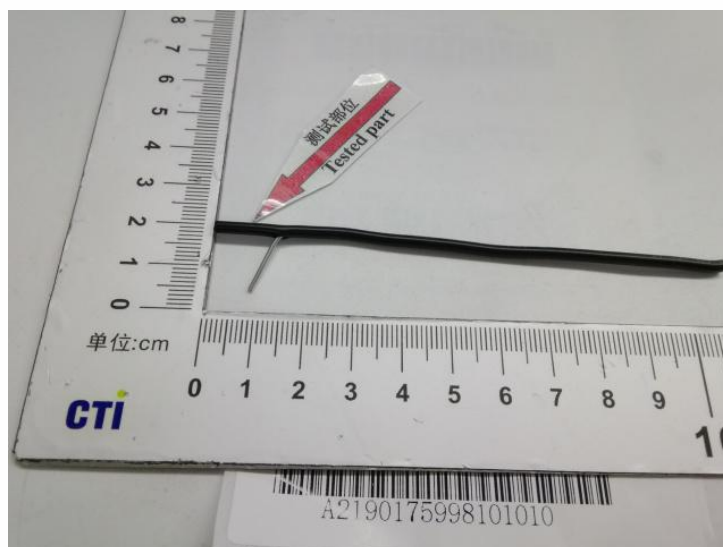


Test Report

Report No. A2190175998101010

Page 7 of 7

Photo(s) of the sample(s)



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Test Report



Page 1 of 7

Report No. A2190175998101004

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name ORANGE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101004

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101004

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101004

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	88 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)		
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Orange wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

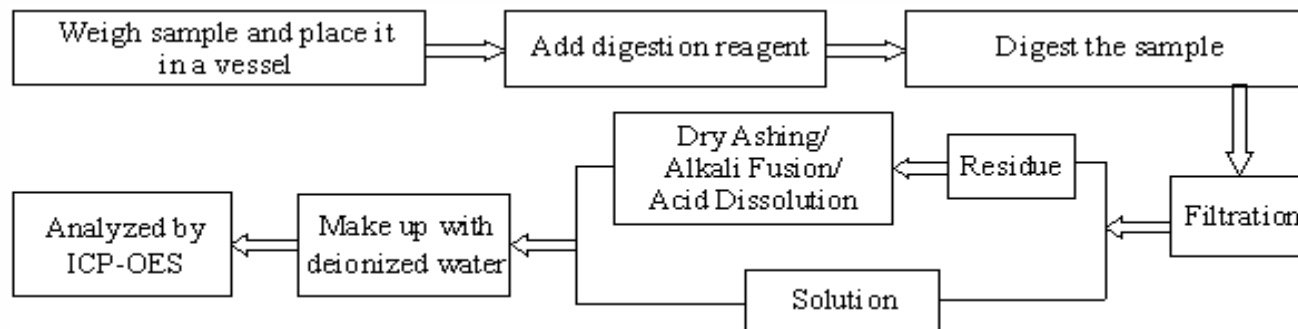
Test Report

Report No. A2190175998101004

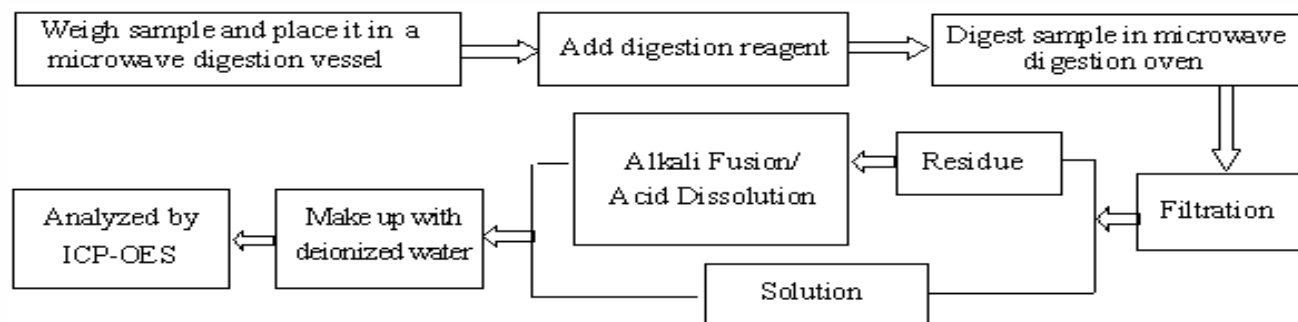
Page 5 of 7

Test Process

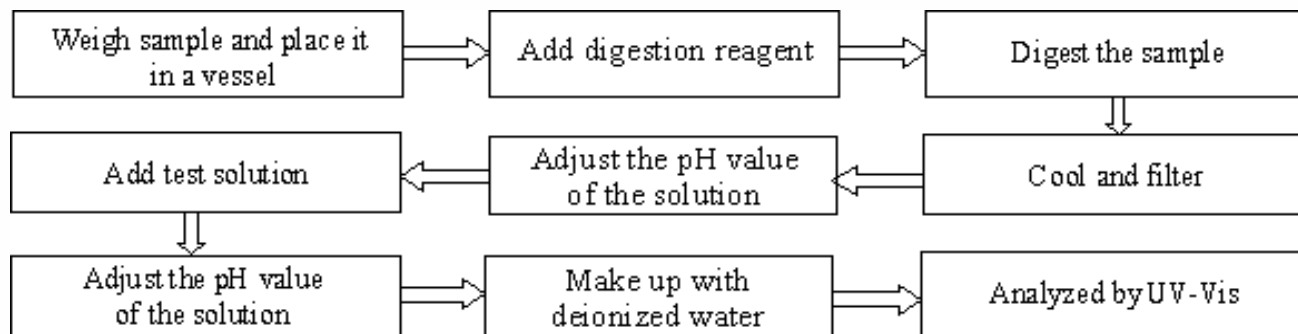
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



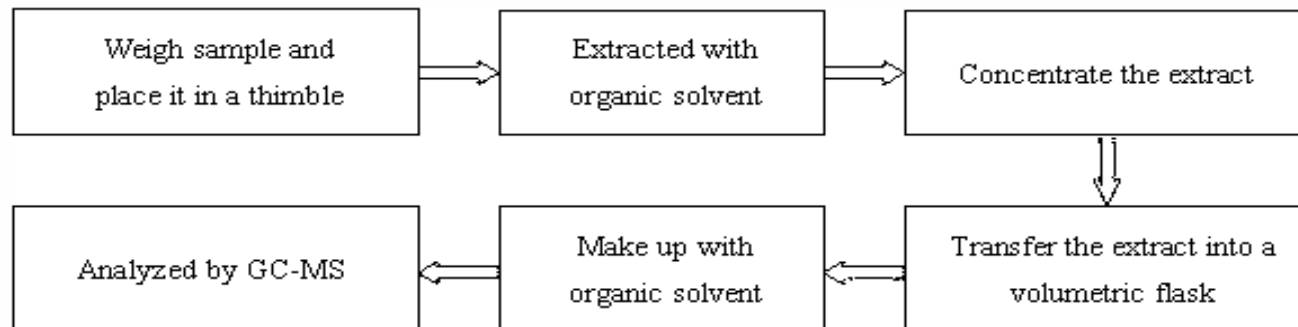
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

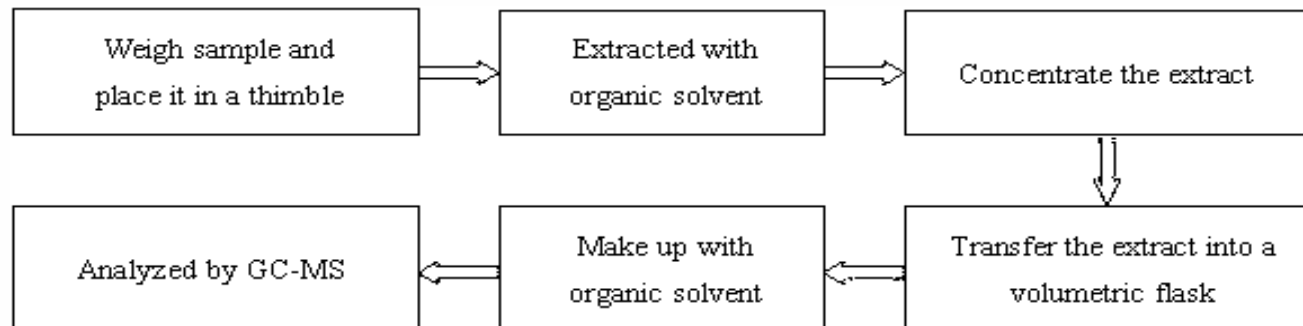


Test Report

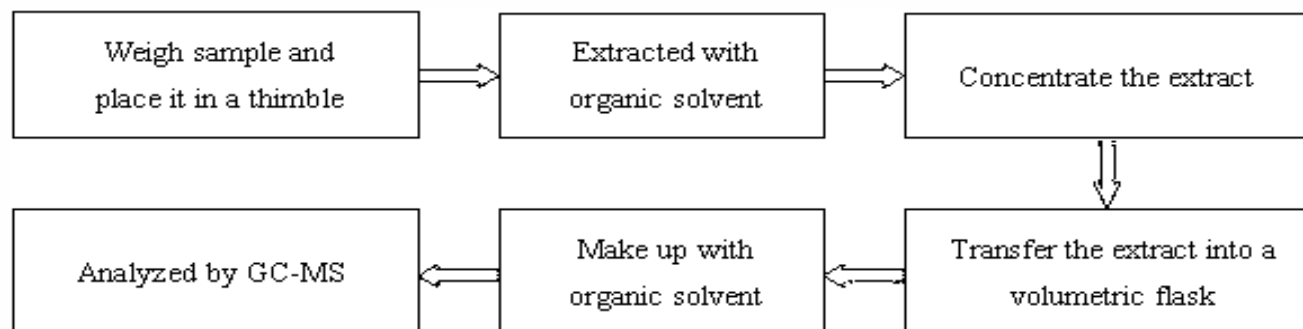
Report No. A2190175998101004

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

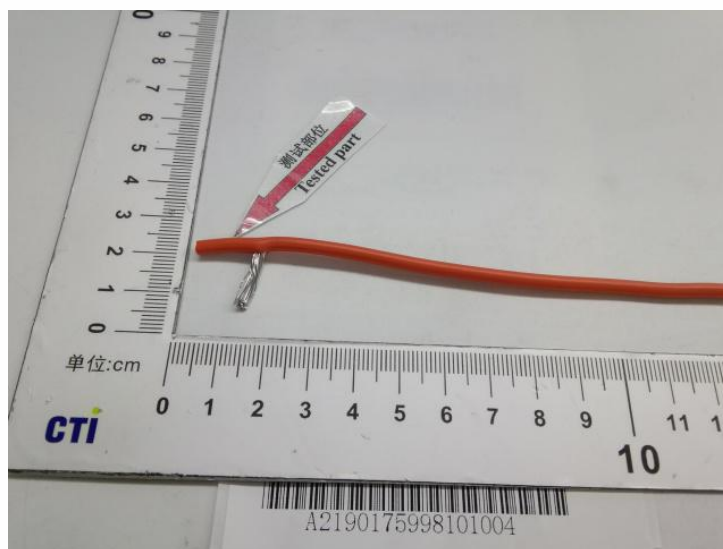


Test Report

Report No. A2190175998101004

Page 7 of 7

Photo(s) of the sample(s)



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Test Report



Page 1 of 7

Report No. A2190175998101001

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name WHITE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101001

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101001

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101001

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	92 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description White wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

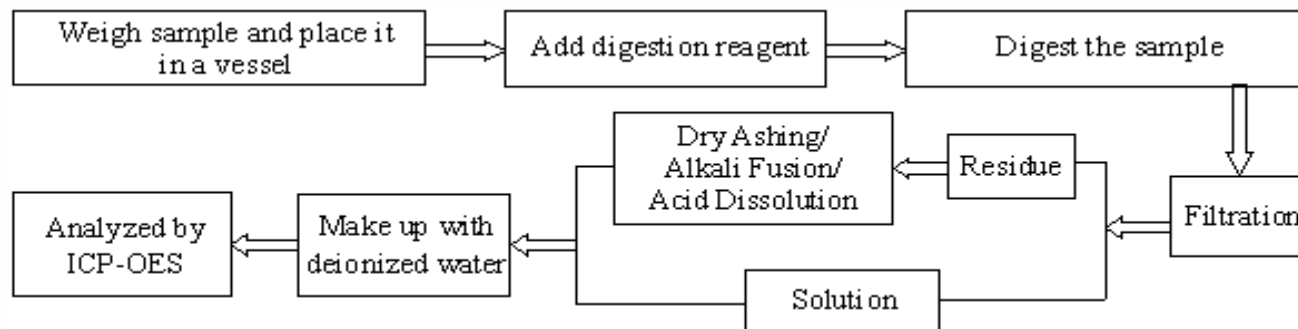
Test Report

Report No. A2190175998101001

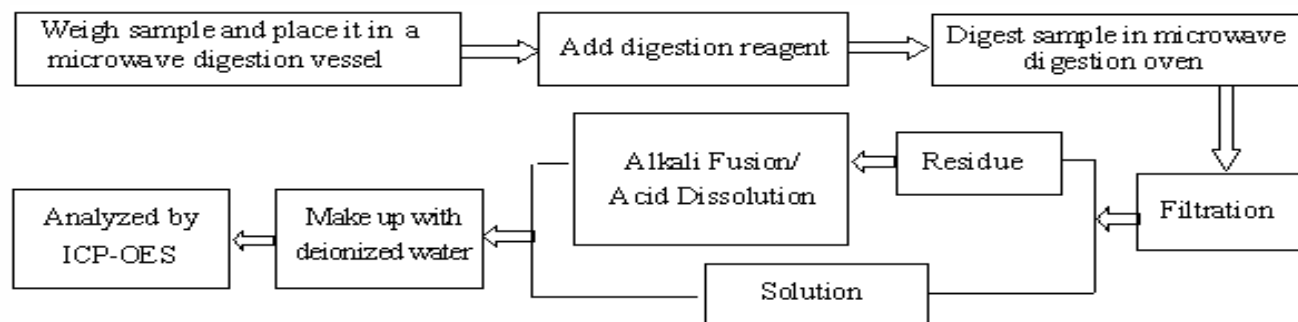
Page 5 of 7

Test Process

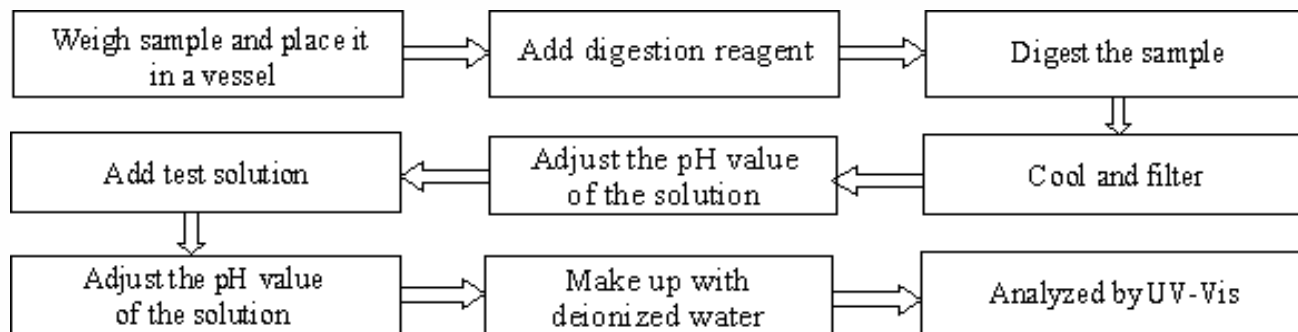
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



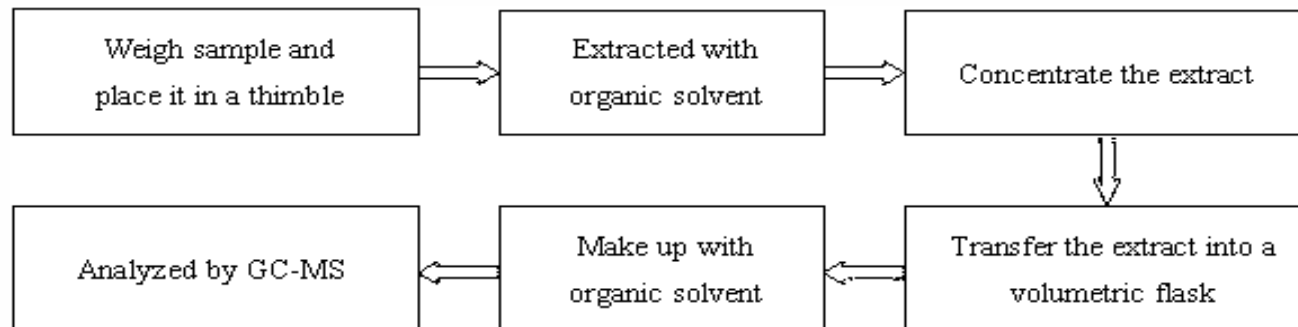
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

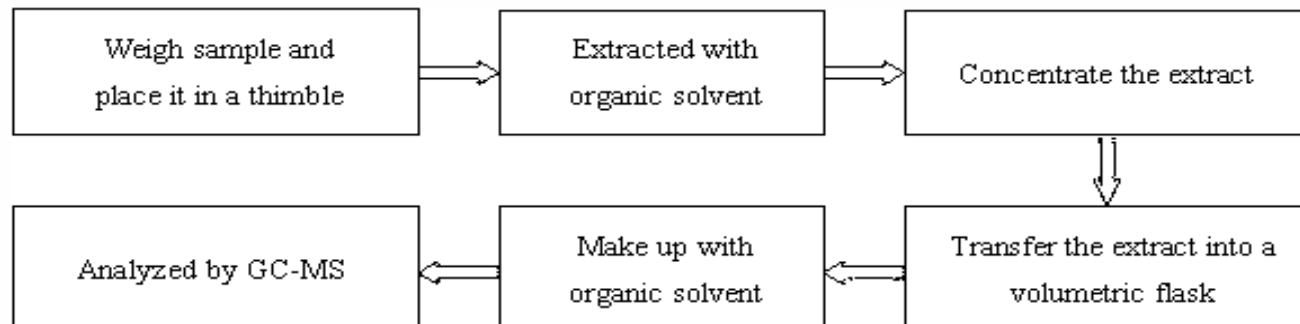


Test Report

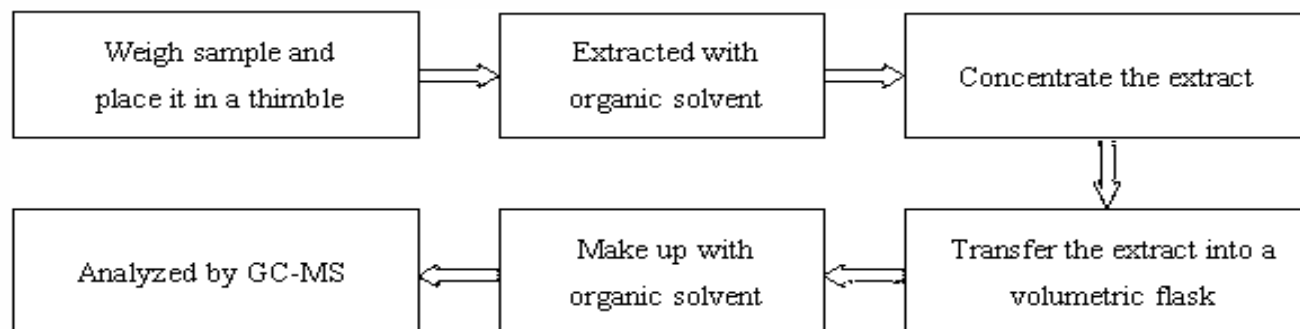
Report No. A2190175998101001

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101001

Page 7 of 7

Photo(s) of the sample(s)



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Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 1 of 7

DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 2 of 7

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.001	Copper colored metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



SGS-CSTC Science & Technology Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

No. CANEC1904032401

Date: 21 Mar 2019

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

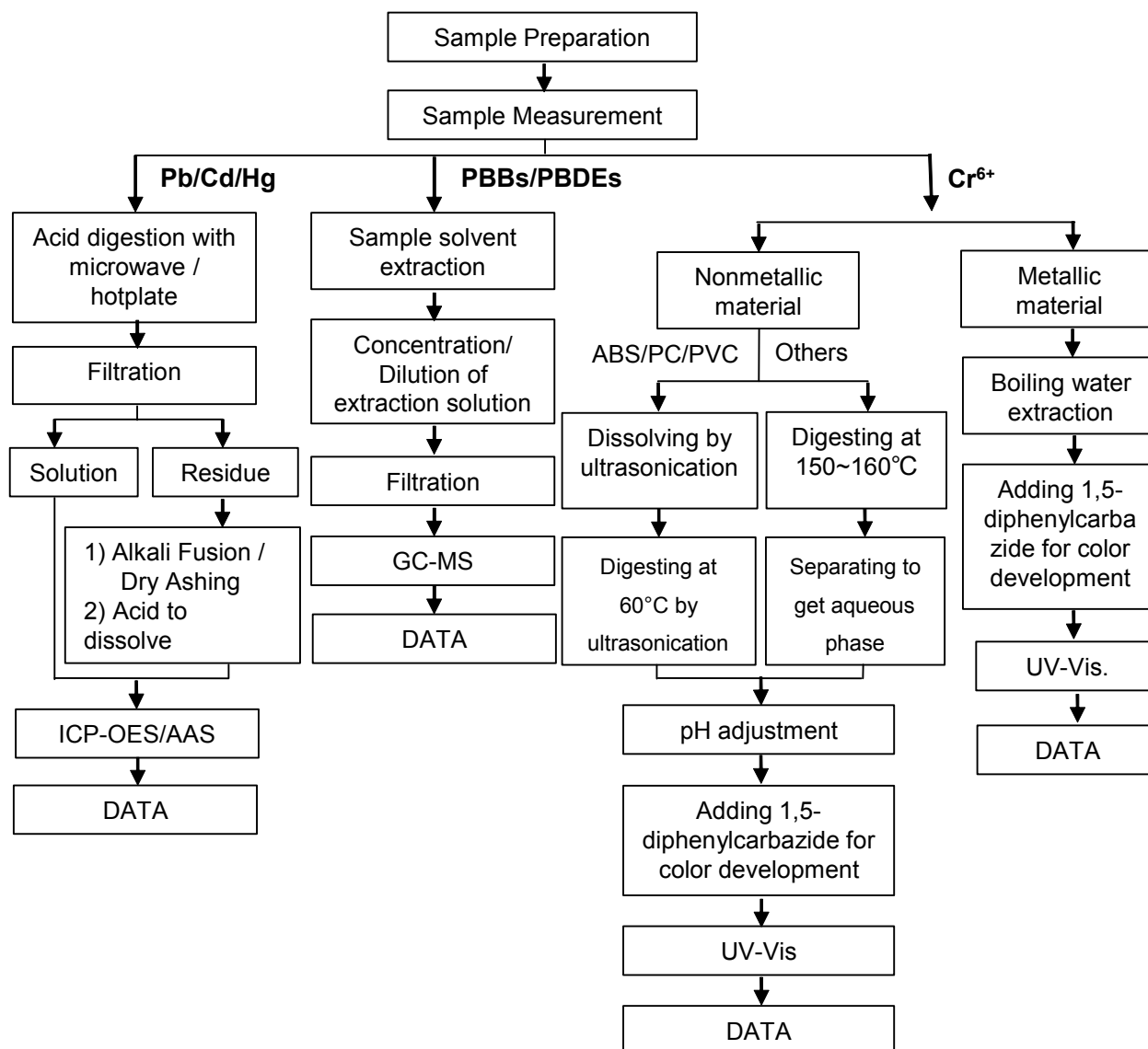
<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Beryllium (Be)	mg/kg	5	ND



ATTACHMENTS

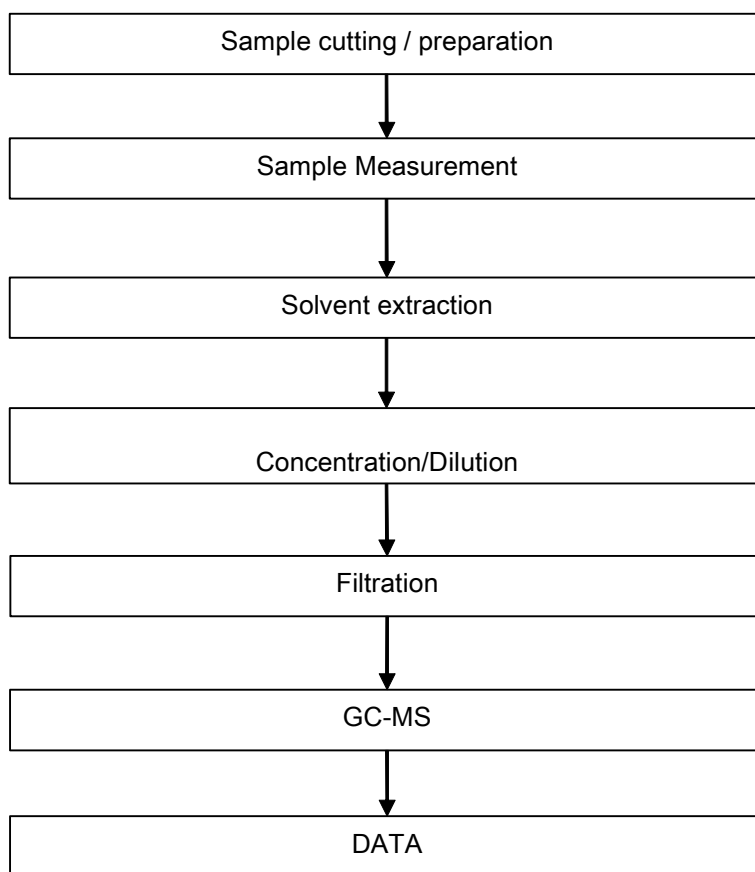
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



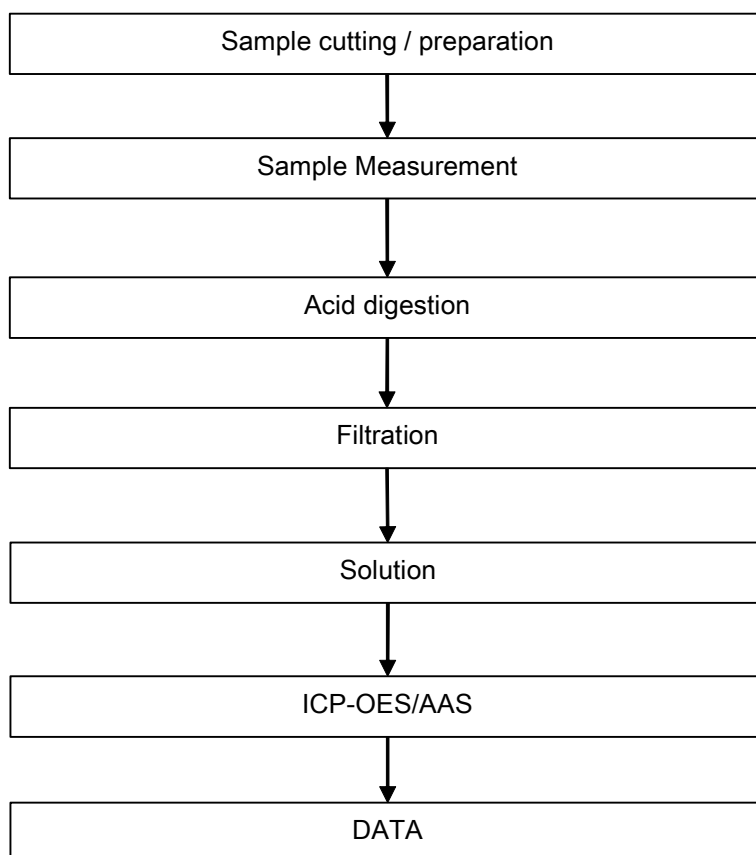
ATTACHMENTS

Phthalates Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report (SVHC)

No. CANEC1904032403

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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD
QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE,
TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety seven (197) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Additional One (1) Substances of Very High Concern (SVHC) identified by the notification of WTO on Feb 7, 2019.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Violet,Shi

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.003	Copper colored metal wire(a)+silvery plated metal wire(b)

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result:(Additional SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
 - ** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. Add. = Additional identified SVHC
 10. Composite test has been performed in equal proportion for the components/material per client requested. And the result is calculated using the minimum sample weight.



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
Add.	198	4-tert-butylphenol (PTBP)	98-54-4	0.050



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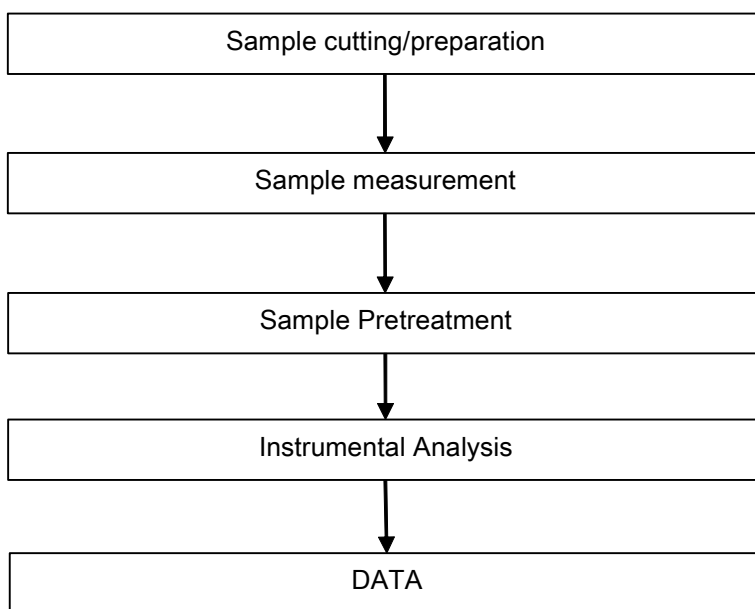
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ATTACHMENTS

SVHC Testing Flow Chart



Test Report (SVHC)

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Sample photo:



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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.002	Silvery plated metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	002
Beryllium (Be)	mg/kg	5	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

PFOS (Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	002
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide,



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N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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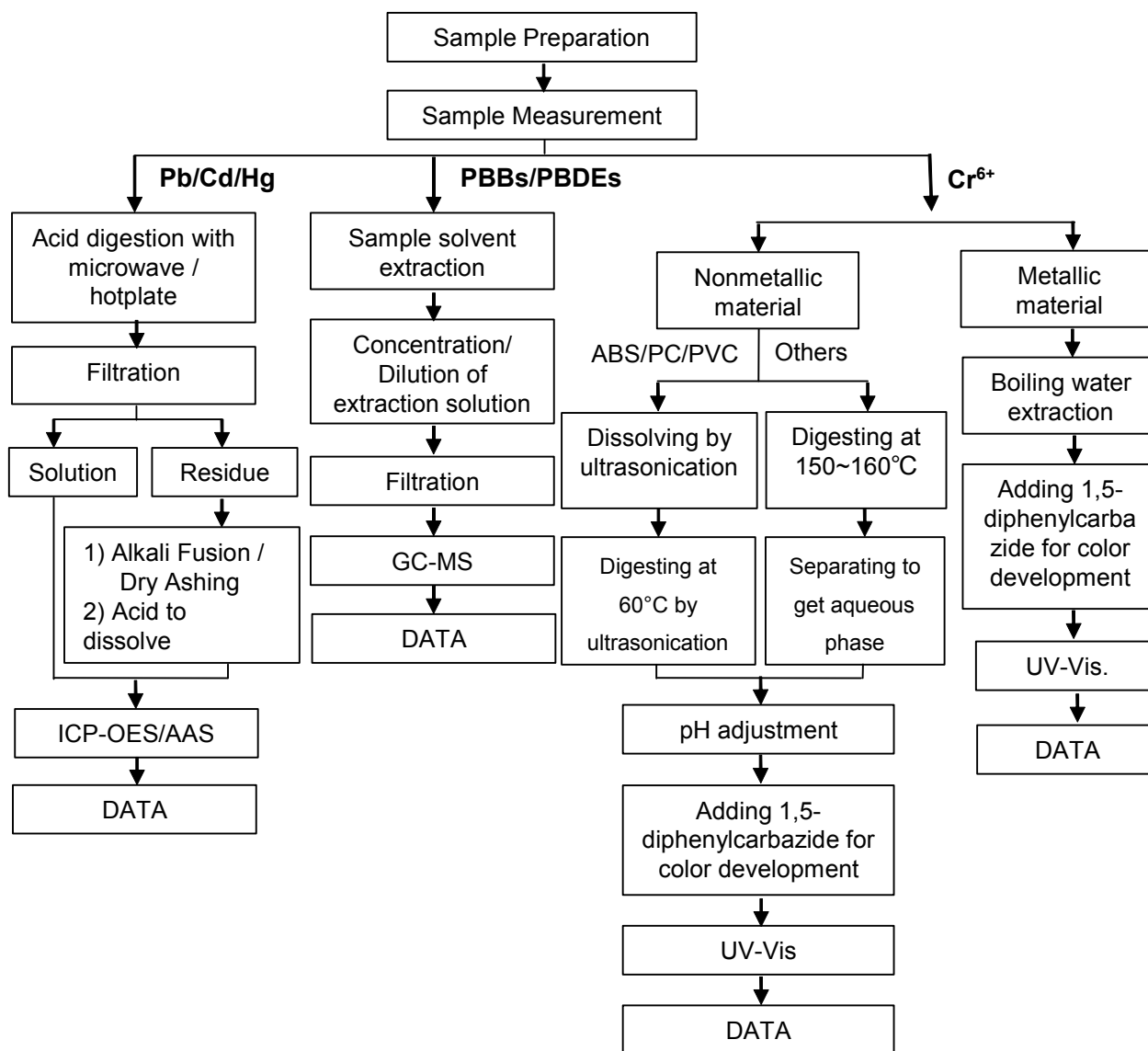
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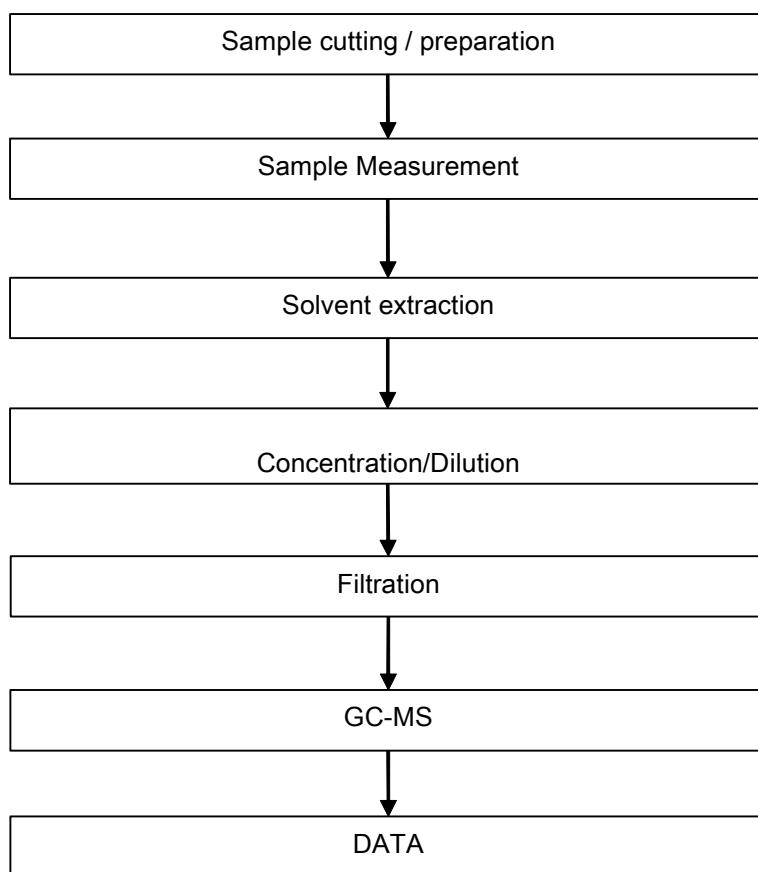
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



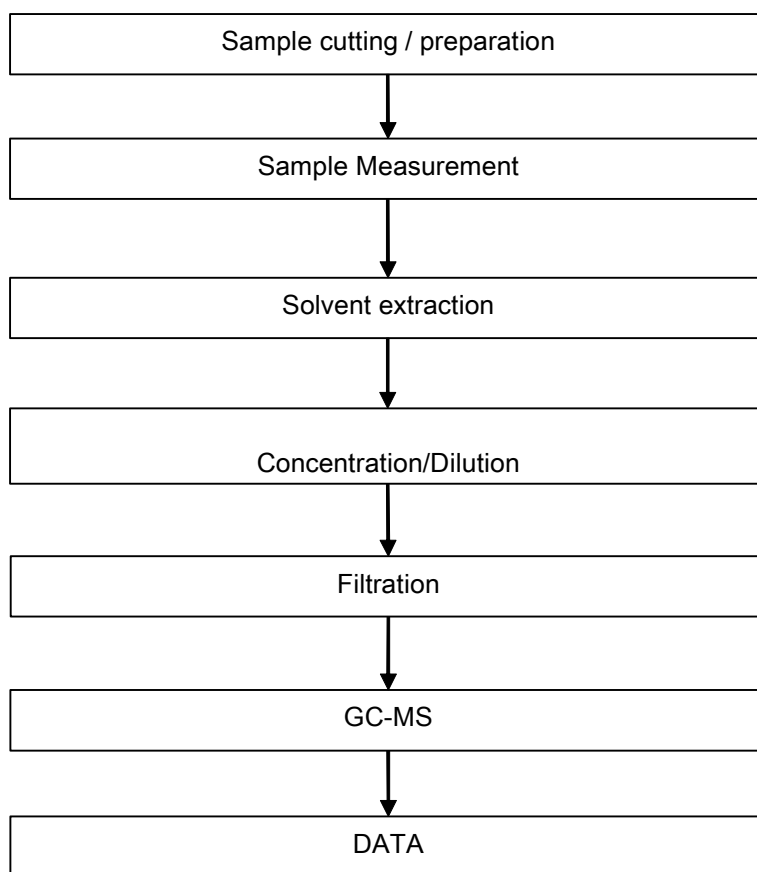
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Phthalates Testing Flow Chart



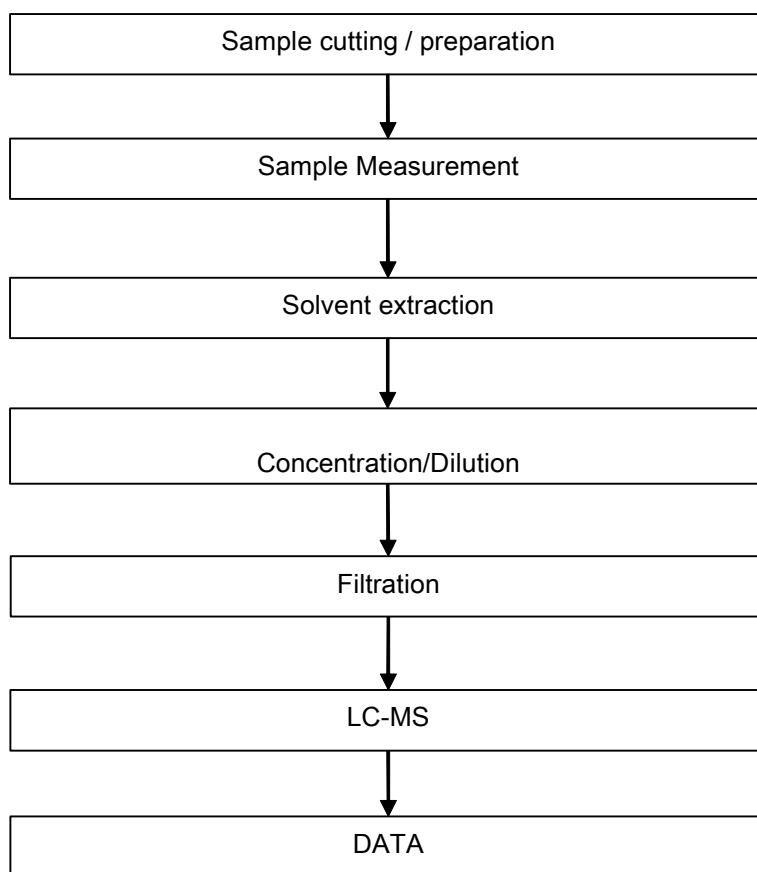
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PAHs Testing Flow Chart



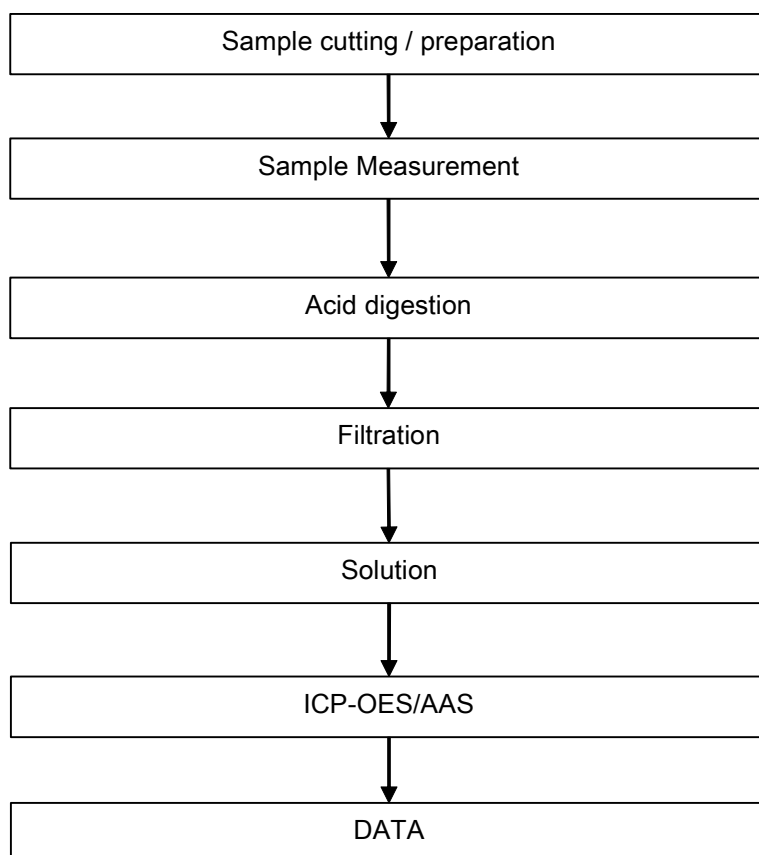
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PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



Test Report

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report (SVHC)

No. CANEC1901488301

Date: 30 Jan 2019

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-02
Client Ref. Info. : I-PE-02;I-TPE-02;I-PP-02; I-PU-02; I-RU-02; I-TPR-02;I-PPE-02
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



Test Report (SVHC)

No. CANEC1901488301

Date: 30 Jan 2019

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Test Report (SVHC)

No. CANEC1901488301

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.001	Black liquid	6
SN2	CAN19-014883.004	Black liquid	181
SN3	CAN19-014883.007	Black liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	004 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	007 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	004
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	004
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	004
I	4	Anthracene	120-12-7	0.050	004
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	004
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	004
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	004
I	8	Cobalt dichloride*	7646-79-9	0.005	004
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	004
I	10	Diarsenic trioxide*	1327-53-3	0.005	004
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	004
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4,319 4- 55-6	0.050	004
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	004
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	004
I	15	Triethyl arsenate*	15606-95-8	0.005	004
II	16	2,4-Dinitrotoluene	121-14-2	0.050	004
II	17	Acrylamide	79-06-1	0.050	004
II	18	Anthracene oil**	90640-80-5	0.050	004
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	004
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	004
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	004
II	23	Diisobutyl phthalate	84-69-5	0.050	004
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	004
II	25	Lead chromate*	7758-97-6	0.005	004
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	004
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	004
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	004
III	29	Ammonium dichromate*	7789-09-5	0.005	004
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	004
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	004
III	32	Potassium chromate*	7789-00-6	0.005	004
III	33	Potassium dichromate*	7778-50-9	0.005	004
III	34	Sodium chromate*	7775-11-3	0.005	004
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	004
III	36	Trichloroethylene	79-01-6	0.050	004
IV	37	2-Ethoxyethanol	110-80-5	0.050	004
IV	38	2-Methoxyethanol	109-86-4	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	004
IV	40	Chromium trioxide*	1333-82-0	0.005	004
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	004
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	004
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	004
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	004
V	45	1,2,3-trichloropropane	96-18-4	0.050	004
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	004
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	004
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	004
V	49	2-ethoxyethyl acetate	111-15-9	0.050	004
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	004
V	51	Strontium chromate*	7789-06-2	0.005	004
VI	52	1,2-Dichloroethane	107-06-2	0.050	004
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	004
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	004
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	004
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	004
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	004
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	004
VI	60	Calcium arsenate*	7778-44-1	0.005	004
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	004
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	004
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	004
VI	64	Lead dipicrate*	6477-64-1	0.005	004
VI	65	Lead styphnate*	15245-44-0	0.005	004
VI	66	N,N-dimethylacetamide	127-19-5	0.050	004
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	004
VI	68	Phenolphthalein	77-09-8	0.050	004
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	004
VI	70	Trilead diarsenate*	3687-31-8	0.005	004
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	004
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	004
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	004



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VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	004
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	004
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	004
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	004
VII	78	Diboron trioxide*	1303-86-2	0.005	004
VII	79	Formamide	75-12-7	0.050	004
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	004
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	004
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	004
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	004
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	004
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	004
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	004
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	004
VIII	88	1-Bromopropane	106-94-5	0.050	004
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	004
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	004



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	004
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	004
VIII	93	4-Aminoazobenzene	60-09-3	0.050	004
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	004
VIII	95	4-Nonylphenol, branched and linear	-	0.050	004
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	004
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	004
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	004
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	004
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	004
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	004
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	004
VIII	103	Diethyl sulphate	64-67-5	0.050	004
VIII	104	Diisopentylphthalate	605-50-5	0.050	004
VIII	105	Dimethyl sulphate	77-78-1	0.050	004
VIII	106	Dinoseb	88-85-7	0.050	004
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	004
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	004
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	004
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	004
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	004
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	004
VIII	114	Lead cyanamidate*	20837-86-9	0.005	004
VIII	115	Lead dinitrate*	10099-74-8	0.005	004
VIII	116	Lead monoxide*	1317-36-8	0.005	004
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	004
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	004
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	004
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	004
VIII	121	Methoxyacetic acid	625-45-6	0.050	004
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	004
VIII	123	N,N-dimethylformamide	68-12-2	0.050	004
VIII	124	N-Methylacetamide	79-16-3	0.050	004
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	004
VIII	126	o-Aminoazotoluene	97-56-3	0.050	004
VIII	127	o-Toluidine	95-53-4	0.050	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	004
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	004
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	004
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	004
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	004
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	004
VIII	134	Tetraethyllead*	78-00-2	0.005	004
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	004
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	004
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	004
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	004
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	004
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	004
IX	141	Cadmium oxide*	1306-19-0	0.005	004
IX	142	Cadmium*	7440-43-9	0.005	004
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	004
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	004
X	145	Cadmium sulphide*	1306-23-6	0.005	004
X	146	Dihexyl phthalate	84-75-3	0.050	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	004
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	004
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	004
X	150	Lead di(acetate)*	301-04-2	0.005	004
X	151	Trixylyl phosphate	25155-23-1	0.050	004
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	004
XI	153	Cadmium chloride*	10108-64-2	0.005	004
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	004
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	004
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	004
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	004
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	004
XII	159	Cadmium fluoride*	7790-79-6	0.005	004
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	004
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	004
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	004
XIV	164	1,3-propanesultone	1120-71-4	0.050	004
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	004
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	004
XIV	167	Nitrobenzene	98-95-3	0.050	004
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	004
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	004
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	004
XVI	171	4-Heptylphenol, branched and linear	-	0.050	004



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	004
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	004
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	004
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	004
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	004
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	004
XVIII	178	Cadmium carbonate*	513-78-0	0.005	004
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	004
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	004
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	004
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	007
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	007
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	007
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	007
XIX	186	Disodium octaborate*	12008-41-2	0.005	007

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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	007
XIX	188	Ethylenediamine	107-15-3	0.050	007
XIX	189	Lead*	7439-92-1	0.005	007
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	007
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	007
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	001
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	001
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	001
XX	195	Fluoranthene	206-44-0	0.050	001
XX	196	Phenanthrene	85-01-8	0.050	001
XX	197	Pyrene	129-00-0	0.050	001



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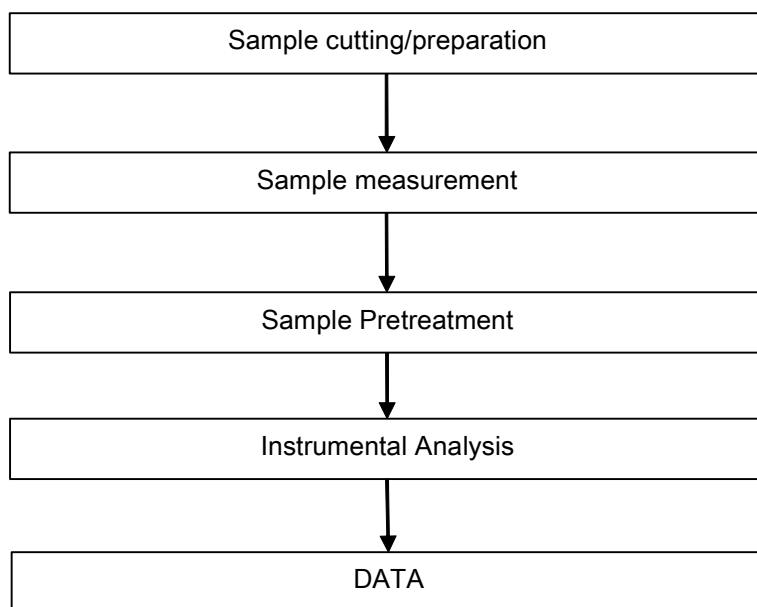
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ATTACHMENTS

SVHC Testing Flow Chart



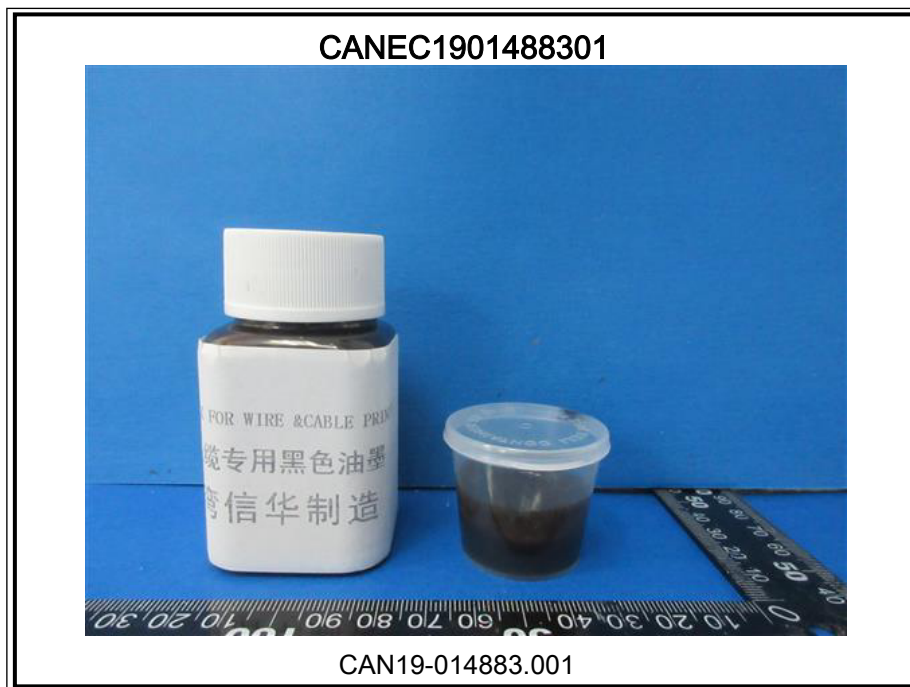
Test Report (SVHC)

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Sample photo:



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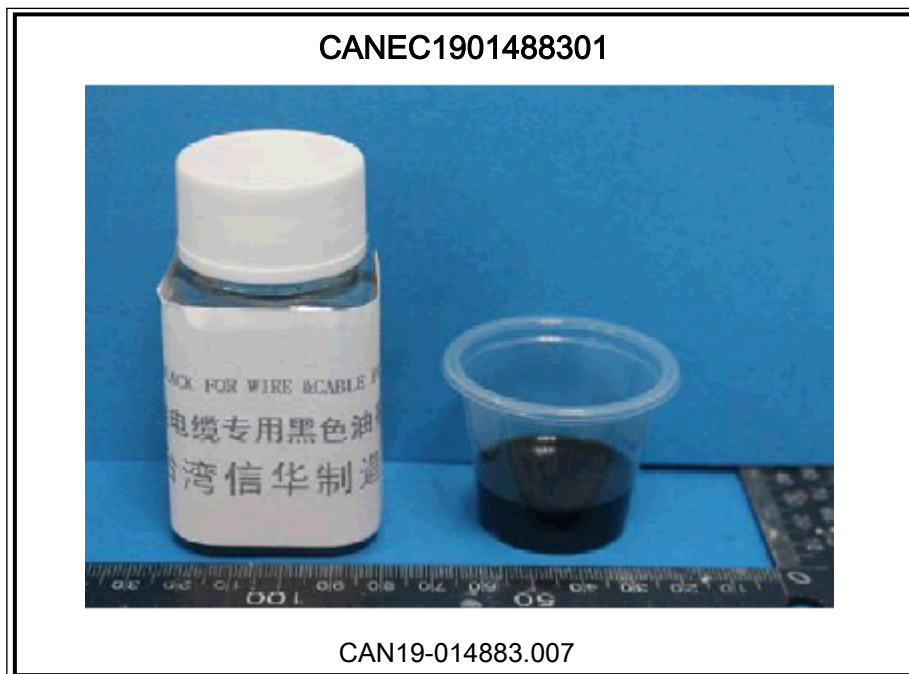
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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-01

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



SGS-CSTC Scientific Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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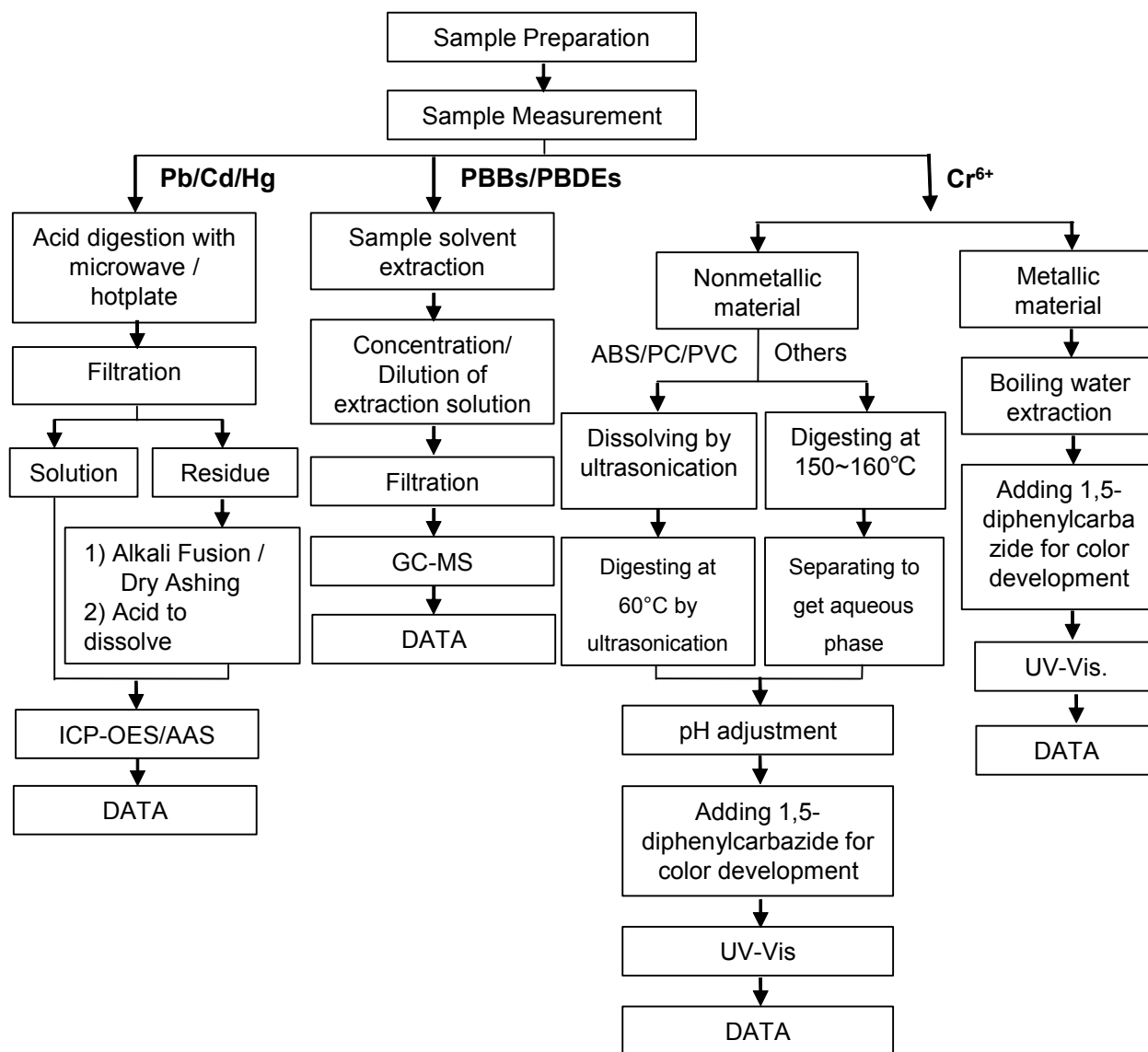
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ATTACHMENTS

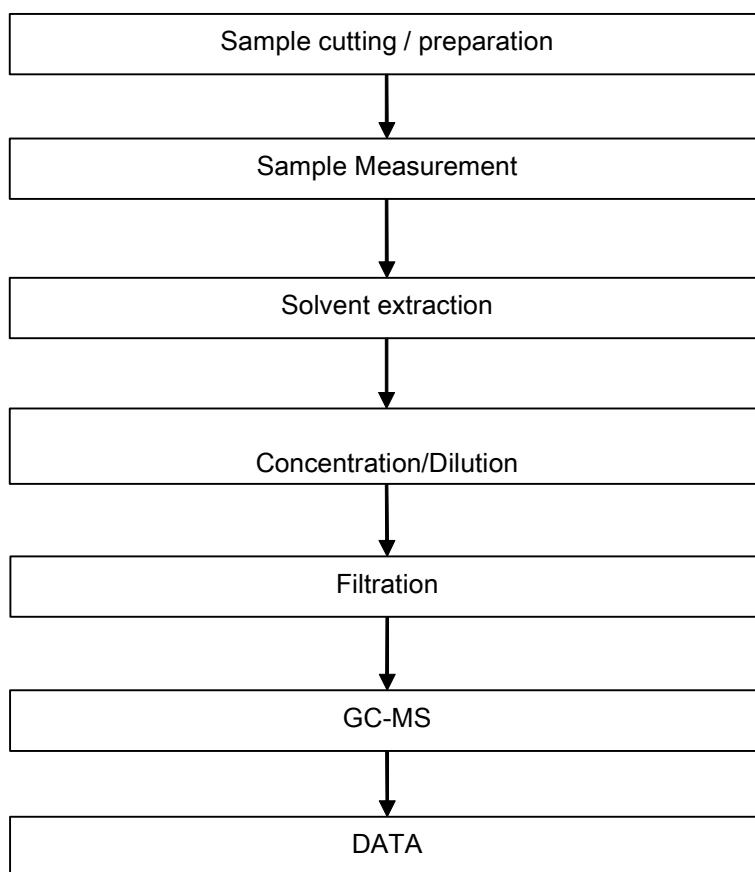
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

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Sample photo:

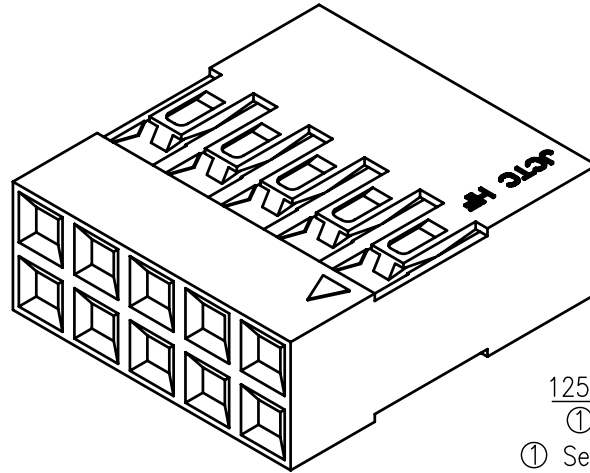
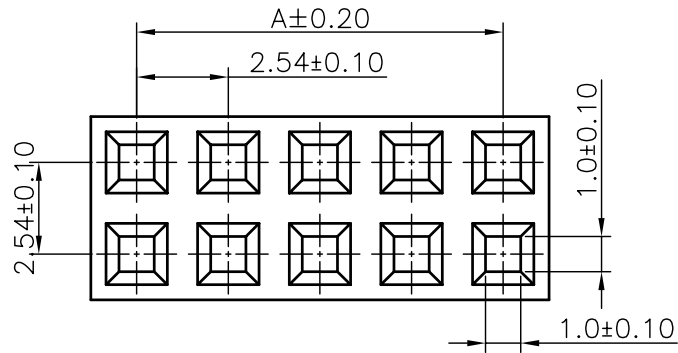


SGS authenticate the photo on original report only

*** End of Report ***



环保物料



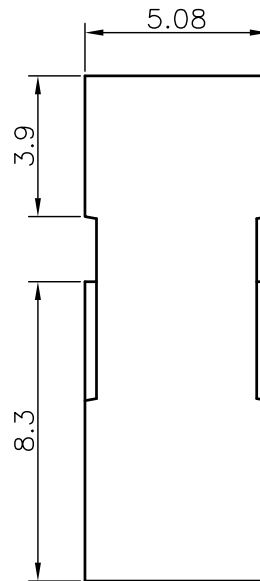
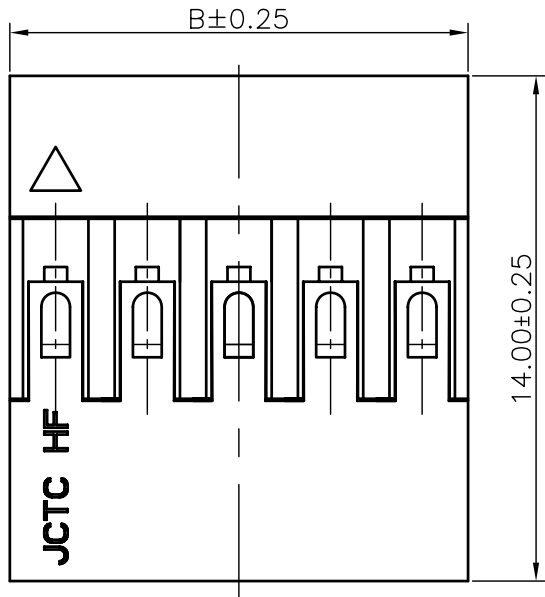
12541H00-2xNPA-HF

① ② ③ ④ ⑤

- ① Series No.
② H90 : Side Contact
H00 : Up Contact
③ No. of Circuits
④ A : Product color(A--Y)
Blank : Natural type
⑤ HF : Halogen Free

Specifications:
Rated Voltage : 250V AC/DC
Rated Current : 3A AC,DC
Withstand Voltage : 800V AC/minute
Contact Resistance : 20mΩ(MAX.)
Insulation Resistance : 1000MΩ(MIN.)
Temperature Range : -25°C~+85°C
Pitch Between Poles : 2.54mm

Dimensional Ordering Information:		
Circuits Part No	Dimensions	
	A	B
2X2P	---	5.08
2X3P	5.08	7.62
2X4P	7.62	10.16
2X5P	10.16	12.70
2X6P	12.70	15.24
2X7P	15.24	17.78
2X8P	17.78	20.32
2X9P	20.32	22.86
2X10P	22.86	25.40
2X11P	25.40	27.94
2X12P	27.94	30.48
2X13P	30.48	33.02
2X14P	33.02	35.56
2X15P	35.56	38.10
2X16P	38.10	40.64
2X17P	40.64	43.18
2X18P	43.18	45.72
2X19P	45.72	48.26
2X20P	48.26	50.80



Suitable for JCTC 12541 series terminal

Part No.	Material	Color	备注
12541H00-2xNPA-HF	Nylon 66,UL 94V-0	黑色无卤	SL10-0004

一般公差 GENERAL TOLERANCE

X.X ±0.25	X' ±5'
X.XX ±0.15	X.X' ±2'
X.XXX ±0.08	▲ MAJOR DIM.

单位 UNIT	mm
mm	

绘图 DR.

欧阳小强

校对 CHK.

龚友连

审核 CHK.

龚友连

核准 APPD.

王志刚

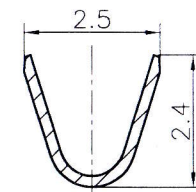
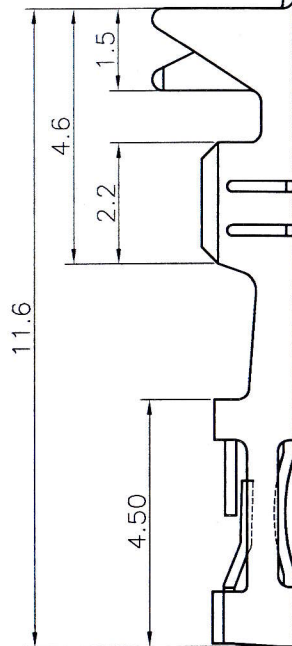
JCTC 东莞市胜蓝电子有限公司
—— 富 强 电 子 厂 ——

品名 TITLE

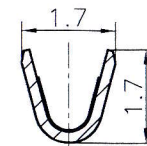
DB 双排 2.54mm PITCH HOUSING

料号 PART NO.	12541H00-2xNPA-HF
文件编号 NUMBER	ENDE05
比例 SCALE	1/1
SHEET	1/1
版次 REV.	C0

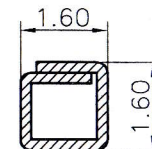
C0	10.08.17	换图框发行	龚友连	王志刚
版次 REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.

$$0.20 \pm 0.02$$


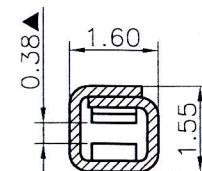
Section A-A



Section B-B



Section C-C




Section D-D






PART NO
12541T2X-XX-4&5&6-S

B--Brass _____ Die No. _____
P--Phosphor Bronze _____
Finish _____

 C1	0A--Gold-flash	0B--2u"	0C--3u"
	0D--4u"	0E--5u"	0F--10u"
	0G--15u"	0H--30u"	0I--50u"



C3	14.01.13	增加铜钢规格	吴友连	唐海江	一般公差 GENERAL TOLERANCE	绘图 DR.	陈志成	 JCTC ®	<div> <div>■ 东莞胜</div> <div>□ 苏州伟</div> </div>
C2	13.10.10	TN1310090165	吴友连	唐海江	X.X ±0.25	X" ±5"	校对 CHK.		
C1	10.08.25	TN1008250066	EAST	唐海江	X.XX ±0.15	X.X" ±2"	审核 CHK.		
C0	10.01.23	换图框发行	EAST	唐海江	X.XXX ±0.08	▲ MAJOR DIM.	核准 APPD.		
单位 UNIT mm					 		品名 TITLE		
版次 REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.	杜邦 2.54 高脚端				

JCTC®
TERMINAL & CONNECTORS

☒ 东莞胜蓝 ☐ 东莞胜景

☐ 苏州伟聚 ☐ 东莞富强

料号 PART NO.		
12541T2X-XX-X-S		
文件编号 NUMBER		
ENDE05		
比例 SCALE	SHEET	版次 REV.
1/1	1/1	C3

**ECBT2.E338796****Connectors for Use in Data, Signal, Control and Power Applications - Component**[Page Bottom](#)**Connectors for Use in Data, Signal, Control and Power Applications - Component**[See General Information for Connectors for Use in Data, Signal, Control and Power Applications - Component](#)**DONGGUAN CITY SHENGLAN ELECTRONICS CO LTD**

E338796

Hexin Rd
 Shatou District
 Changan
 Dongguan, Guangdong 523846 CHINA

Connectors, Model(s) Cat. No. 11002H00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 17, 18, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W90, follow by -2X, follow by 5, 6, 8, 9, 10, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11004H, followed by -2x10 or -2x15, followed by PL.

Cat. No. 11006H00, followed by -2X10, -2X15 or -2X20, followed by P.

Cat. No. 11252H, followed by -2x, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11252W, followed by -2X, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11253H, followed by -20 or -30, followed by P.

Cat. No. 11253W, followed by -20 or -30, followed by P.

Cat. No. 11258H00, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow A thru Z or 1 thru 9.

Cat. No. 11258W90, follow by -S, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 11500H00, followed by -2 thru -15, followed by P.

Cat. No. 11500W00, followed by -2 thru -15, followed by P.

Cat. No. 12002H00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W90, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12003H, followed by -2x, followed by 2 thru 17, followed by P.

Cat. No. 12009H00, followed by -2X2, -2X3 or -2X4, followed by P.

Cat. No. 12504H00, followed by -2 thru -15, followed by P, followed by -L.

Cat. No. 12505H00, followed by -2 thru -15 or -20, followed by P.

Cat. No. 12505W00, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12505W90, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12541H, followed by -2x, followed by 1 thru 20, followed by P.

Cat. No. 12543H, followed by -2 thru -20, followed by P.

Cat. No. 12547H00, followed by -3 thru -8, followed by P.

Cat. No. 13502W90, followed by -2P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 13962H00, 13962W00 and 13962W90, followed by -2P thru -10P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 22001H, followed by -2 thru -16, followed by P.

Cat. No. 22501H, followed by -2 thru -14, followed by P.

Cat. Nos. 10500H and 10500W, followed by -41 or -51, followed by P.

Cat. Nos. 11001H and 11001W, followed by -30, followed by P.

Cat. Nos. 11002H and 11002W, followed by -2 thru -20, followed by P.

Cat. Nos. 11003H and 11003W, followed by -2 thru -30, followed by P.

Cat. Nos. 11005H and 11005W, followed by -2X, followed by 2 thru 25, followed by P.

Cat. Nos. 11251H and 11251W, followed by -2 thru -15, followed by P.

Cat. Nos. 11254H00, 12006H, 12006W, 12504H and 12504W, followed by -2 thru -15, followed by P.

Cat. Nos. 11255H, 11255W, 11256H and 11256W, followed by -2 thru -30, followed by P.

Cat. Nos. 11257H, follow by -4 thru -15, followed by PL.

Cat. Nos. 11257W, 12503H00 and 12503W00, follow by -2 thru -15, followed by P.

Cat. Nos. 11501H and 11501W, followed by -2 thru -13, followed by P.

Cat. Nos. 11501H00 and 11501W00, followed by -14 or -15, followed by P.

Cat. Nos. 12001H and 12001W, followed by -2 thru -16, followed by P.

Cat. Nos. 12002H and 12002W, followed by -2x, followed by 2 thru 15, followed by P.

Cat. Nos. 12004H, 12004W and 12005W, follow by -2 thru -16, followed by P.

Cat. Nos. 12005H, follow by -2 thru -16, followed by PL.

Cat. Nos. 12501H and 12501W, followed by -2 thru -16, followed by P.

Cat. Nos. 12502H and 12502W, followed by -2 thru -15, followed by P.

Cat. Nos. 50801H and 50801W, follow by -2 thru -24, followed by P.

Cat. Nos. 51274H-7P and 51275H-7P.

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Last Updated on 2014-04-25

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Test Report

No. CANEC1917598907

Date: 17 Sep 2019

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Nylon 66 UL 94V-0 Natural color housing

SGS Job No. : CP19-049304 - SZ
 Tested Sample Info. : Nylon 66 UL 94V-0 Natural color housing
 Client Ref. Info. : PLEASE SEE REMARK
 Date of Sample Received : 05 Sep 2019
 Testing Period : 05 Sep 2019 - 17 Sep 2019
 Test Requested : Selected test(s) as requested by client.
 Test Method : Please refer to next page(s).
 Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS
Elementary Analysis	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
Red Phosphor	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Phthalate	See Results
Phthalate(s)	See Results
European Regulation POPs (EU) 2019/1021- Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	PASS
PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)	See Results



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Test Report

No. CANEC1917598907

Date: 17 Sep 2019

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Jessie Li

Jessie Li
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1917598907

Date: 17 Sep 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-175989.003	White material

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	003
Antimony (Sb)	mg/kg	10	ND
Tin (Sn)	mg/kg	5	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, with reference to US EPA Method 3540C:1996), analysis was performed by GC-MS&HPLC-MS.

Test Item(s)	Unit	MDL	003
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Red Phosphor



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Test Method : SGS In-house method (GZTC CHEM-TOP-215-01), analysis was performed by PY-GC/MS/ICP-OES.

Test Item(s)	Unit	MDL	003
Red phosphorus	mg/kg	500	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to US EPA Method 3550C: 2007), analysis was performed by GC-MS.

Test Item(s)

Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)

Unit MDL 003
mg/kg 10 ND



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Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Di(2-ethylhexyl)adipate (DEHA)	103-23-1	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	%(w/w)	0.01	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.01	ND
Di-n-heptyl Phthalate (DnHpP)	3648-21-3	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND

Notes :

(1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:

i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.

ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.



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In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.

iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

Phthalate(s)

Test Method : With reference to SGS in house method (SGS-CCL-TOP-042-41) , analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Phthalic acid, mono-2-ethylhexyl ester(MEHP)	4376-20-9	%(w/w)	0.003	ND

European Regulation POPs (EU) 2019/1021– Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	1500	mg/kg	50	ND
Comment				PASS
Alkanes C14-C17, chloro (medium -chain chlorinated paraffins) (MCCPs)	-	mg/kg	50	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS / GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.01	ND
Perfluorooctane Sulfonates (PFOS)^		mg/kg	0.01	ND



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Notes :

(1) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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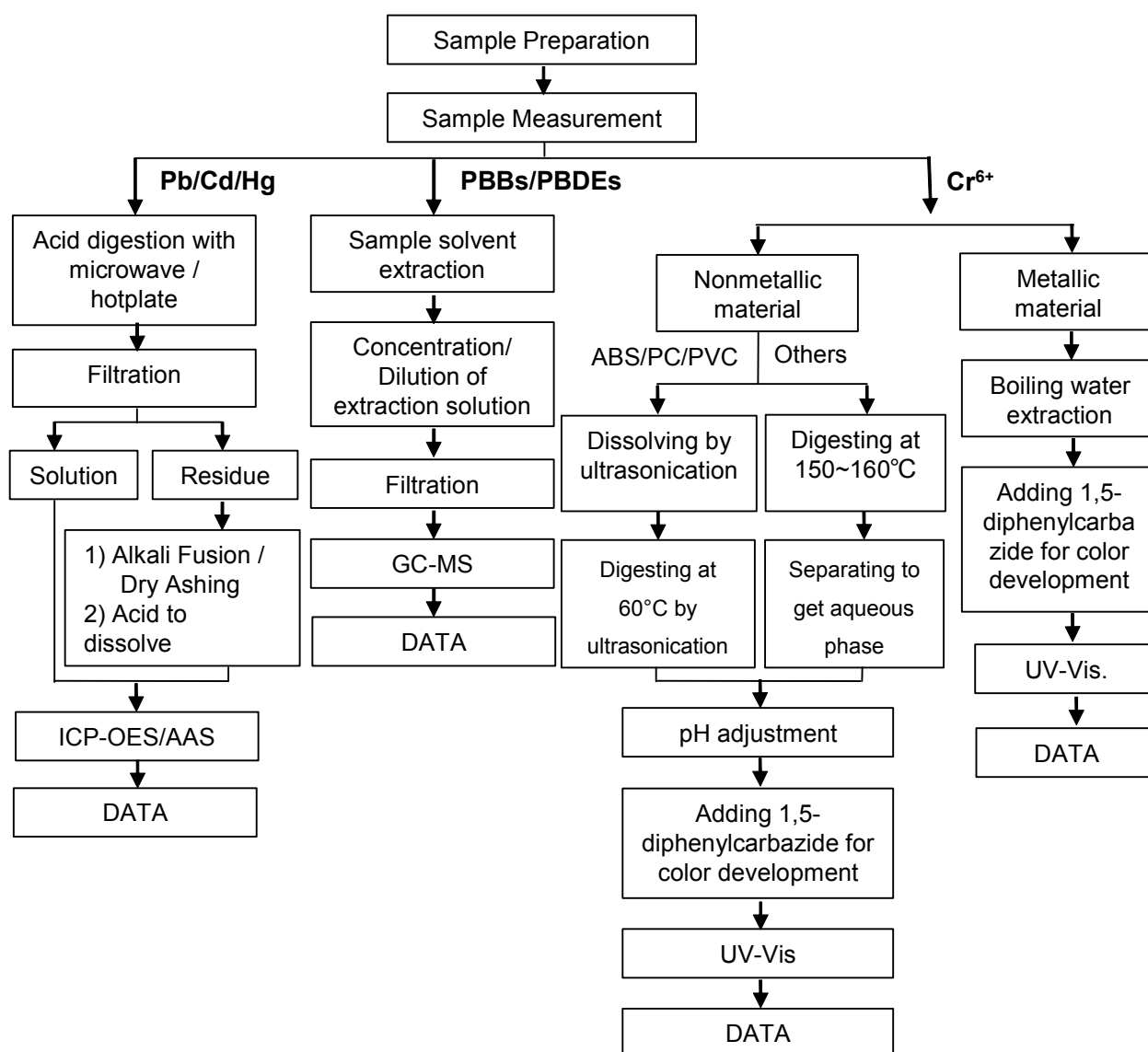
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ATTACHMENTS

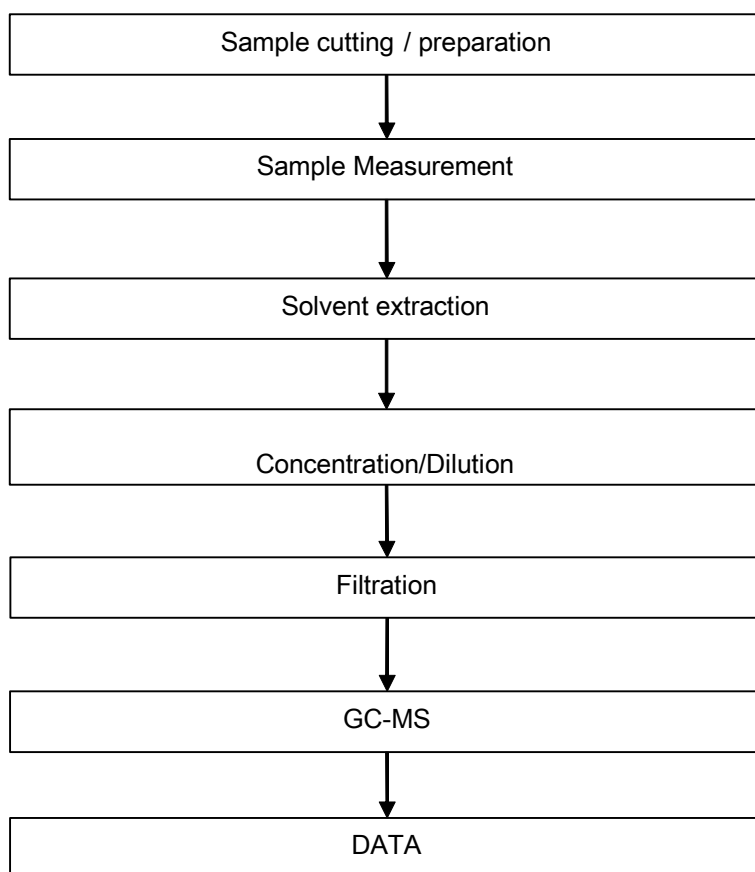
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



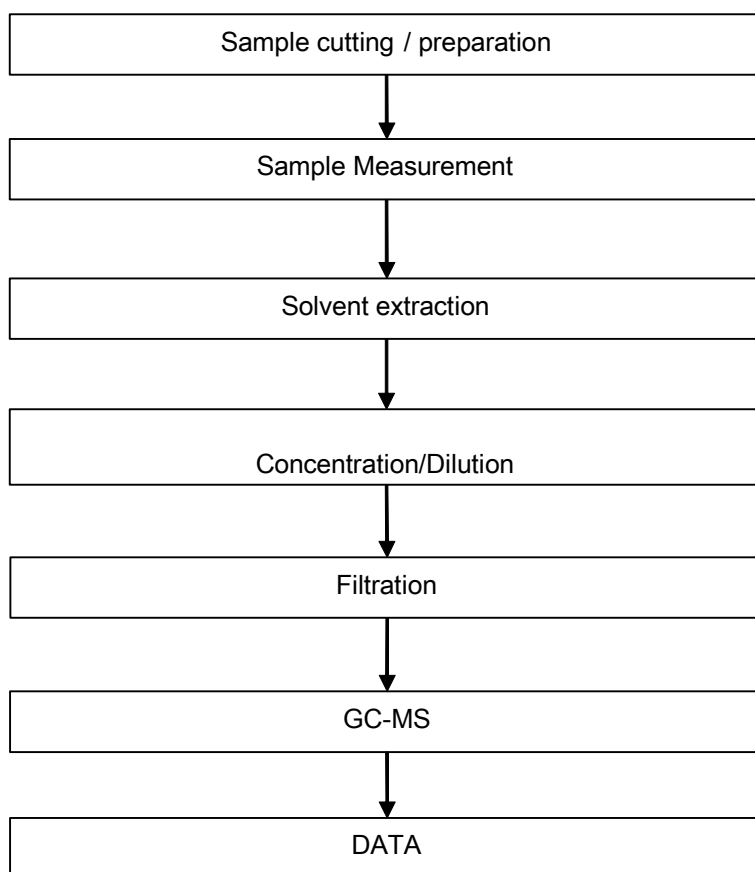
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Phthalates Testing Flow Chart



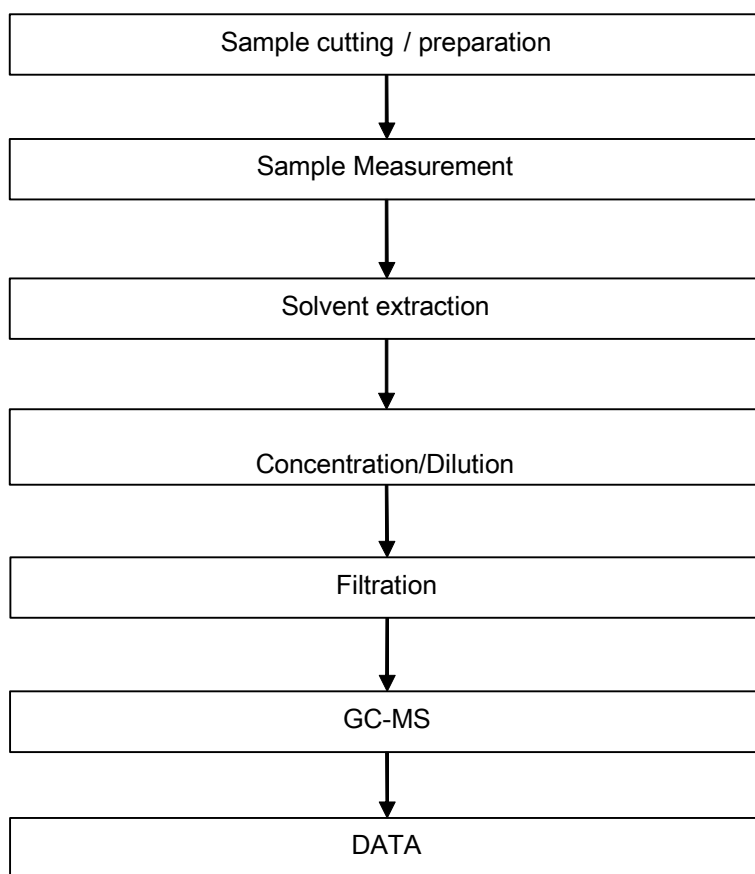
ATTACHMENTS

HBCDD Testing Flow Chart



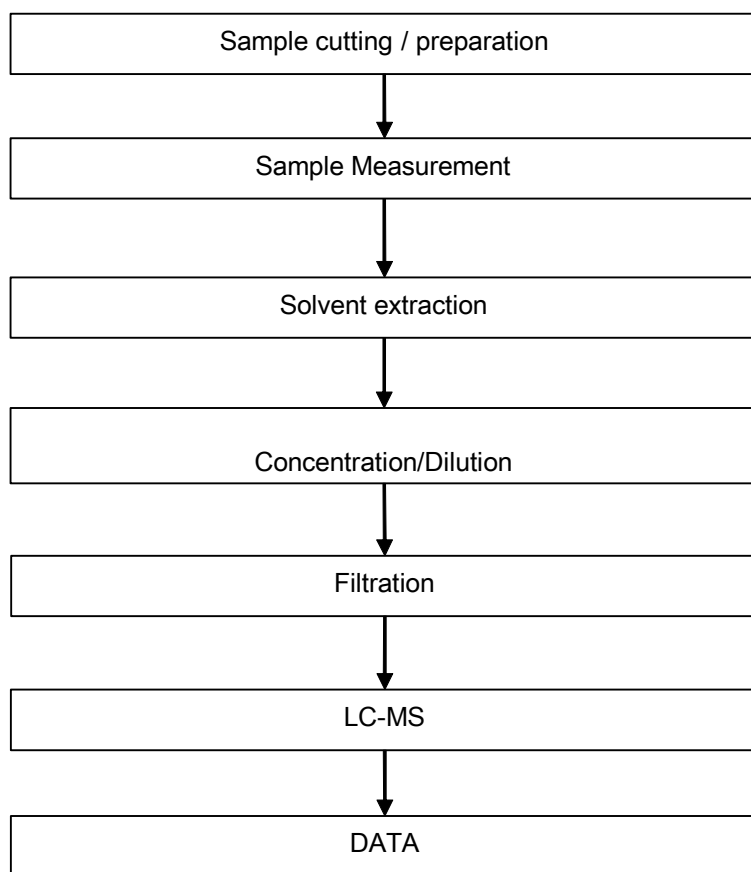
ATTACHMENTS

PAHs Testing Flow Chart



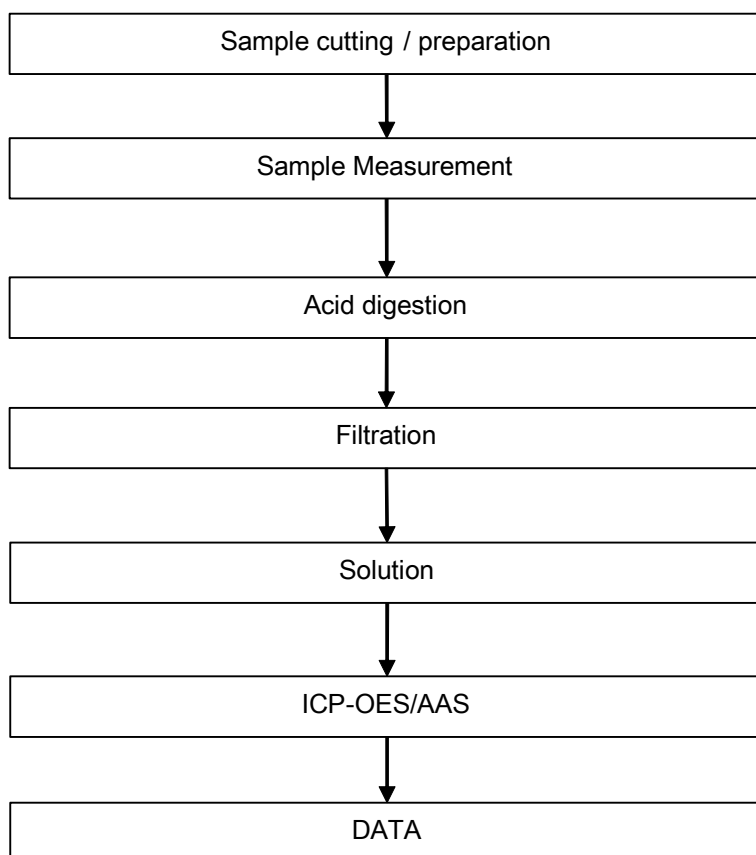
ATTACHMENTS

PFOA / PFOS Testing Flow Chart



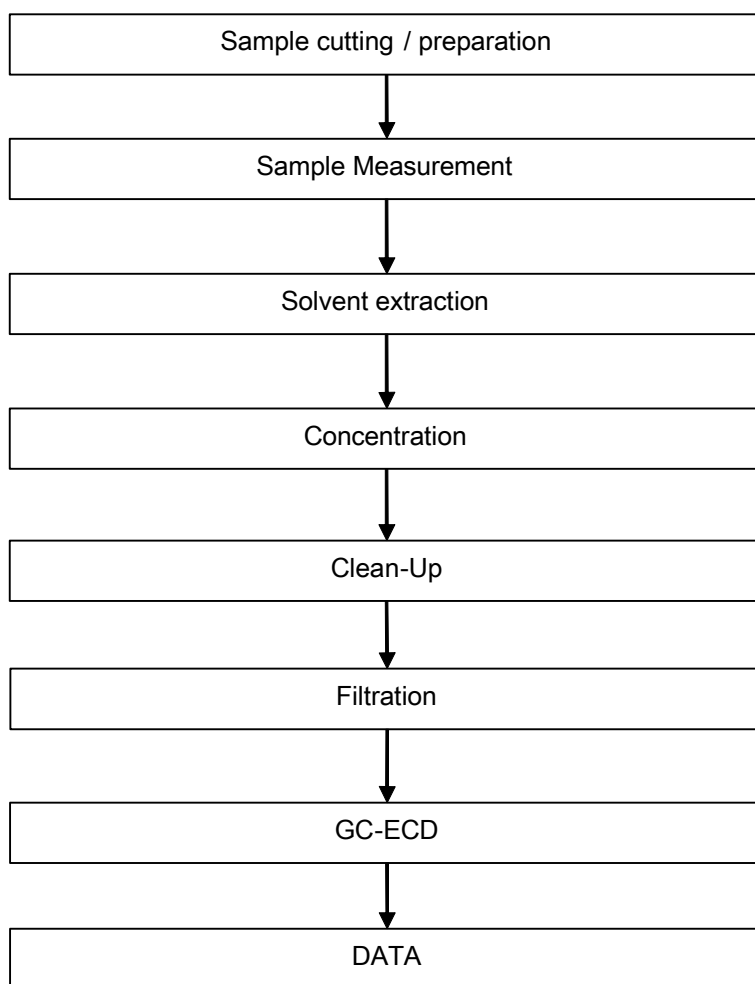
ATTACHMENTS

Elementary Testing Flow Chart



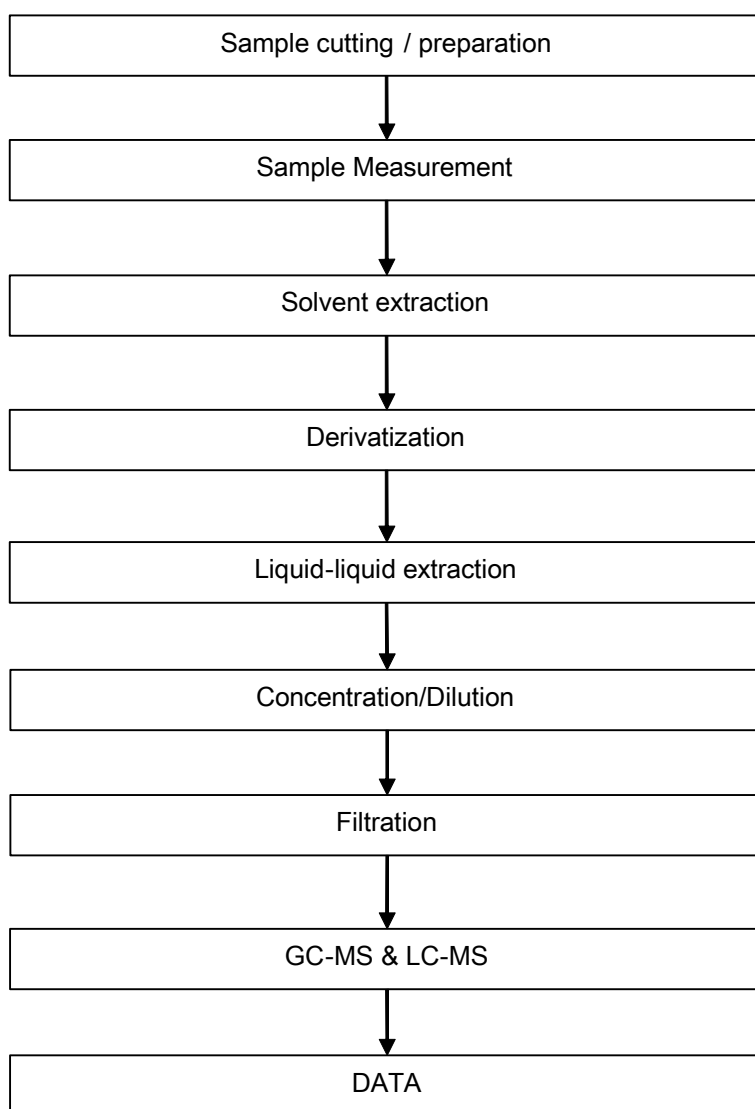
ATTACHMENTS

SCCP/MCCP/LCCP Testing Flow Chart



ATTACHMENTS

TBBP-A Testing Flow Chart



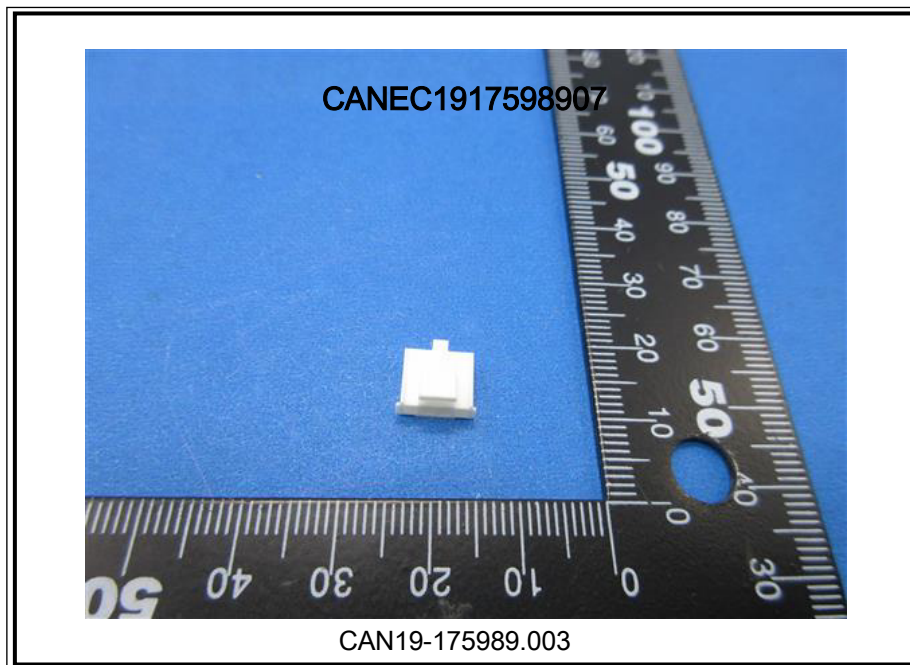
Test Report

No. CANEC1917598907

Date: 17 Sep 2019

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



Test Report

No. CANEC1822941207

Date: 13 Nov 2018

Page 1 of 8

SHENGLAN TECHNOLOGY CO.,LTD

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Brass copperplating nickel gold terminals and welding pieces of the PIN needle

SGS Job No. : CP18-059842 - SZ

Model No. : 12547

Client Ref. Info. : PLEASE SEE REMARK

Date of Sample Received : 06 Nov 2018

Testing Period : 06 Nov 2018 - 09 Nov 2018

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1822941207

Date: 13 Nov 2018

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-229412.003	Silver-gray/Brassy plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	52
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis



SGS-CSTC Standard & Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1822941207

Date: 13 Nov 2018

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Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Beryllium (Be)	mg/kg	5	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA)	335-67-1	µg/m ²	1.0	ND
Perfluorooctane Sulfonates (PFOS)^	-	µg/m ²	1.0	ND

Notes :

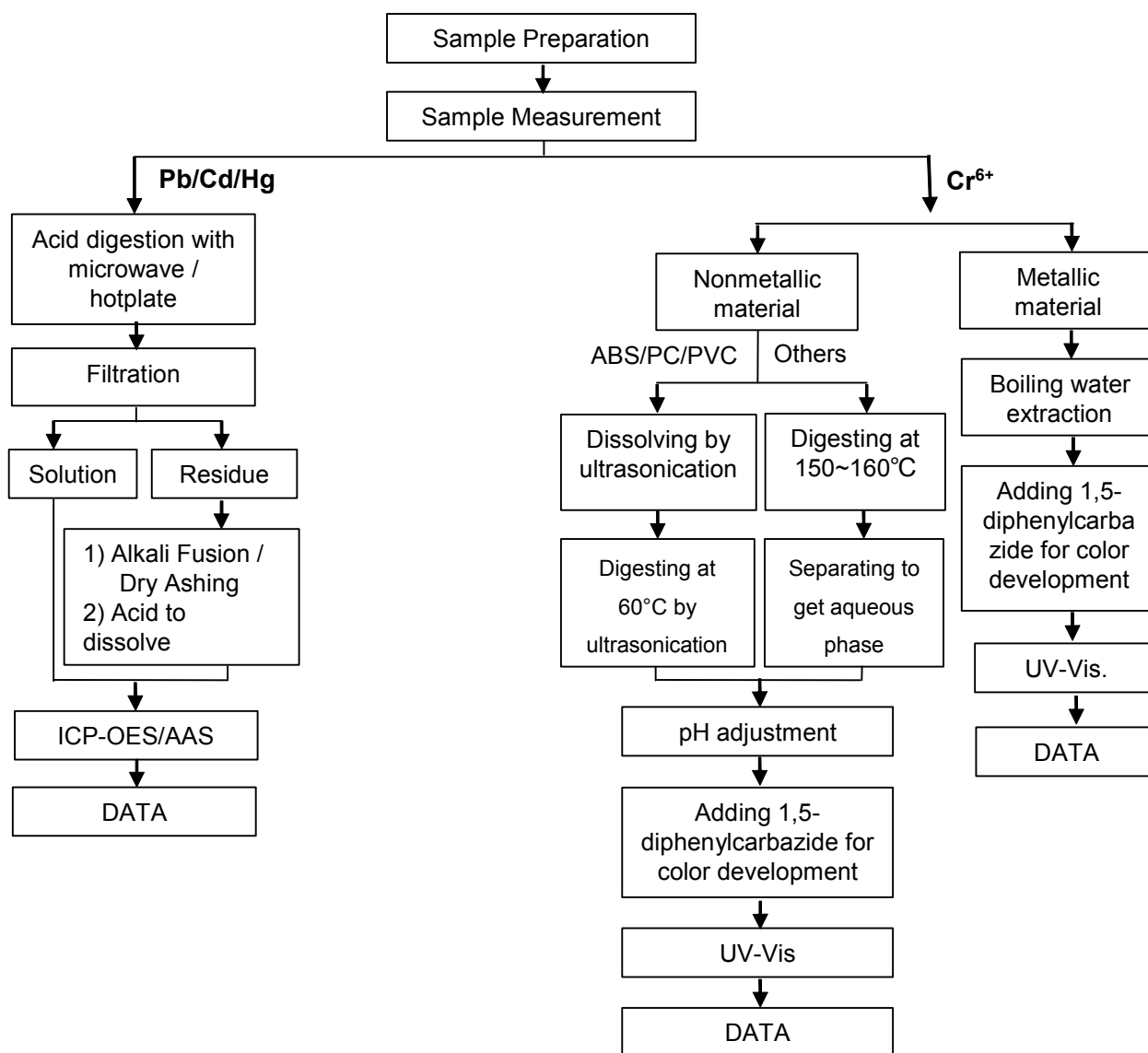
(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



ATTACHMENTS

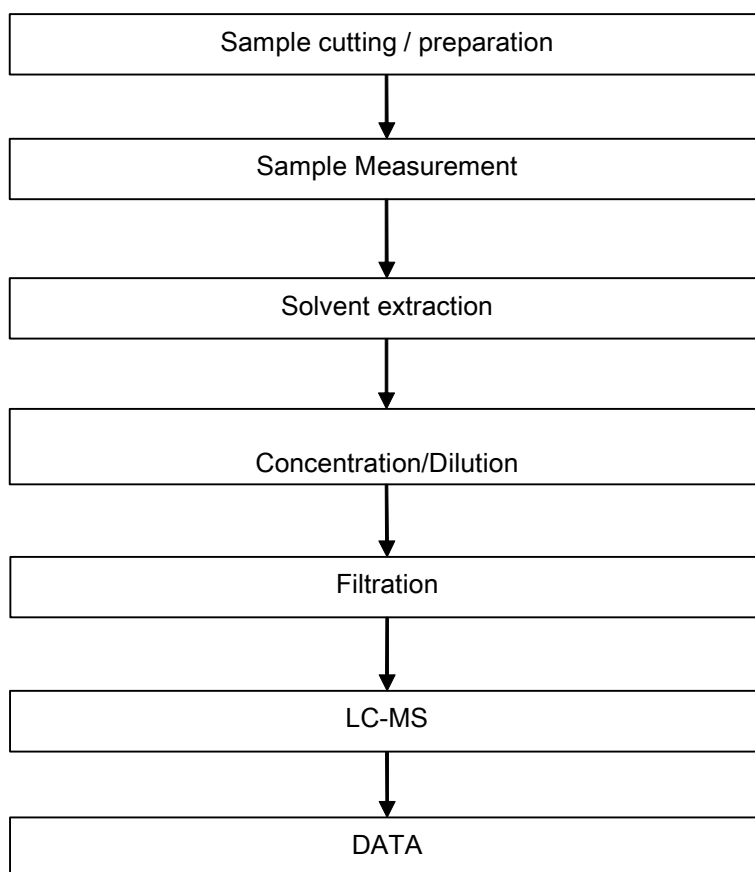
Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



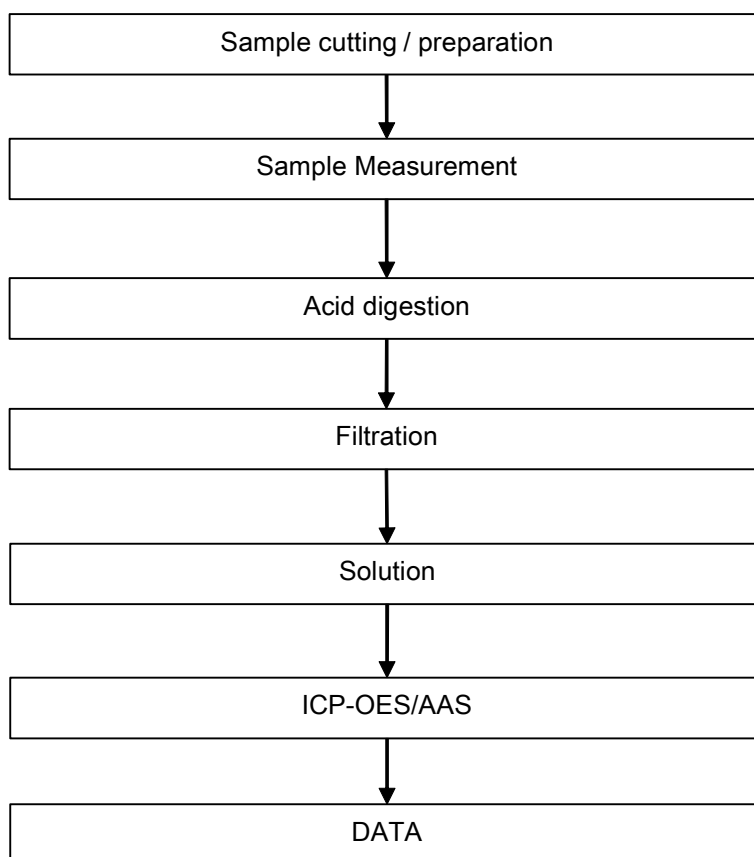
ATTACHMENTS

PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



REMARK:

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Test Report

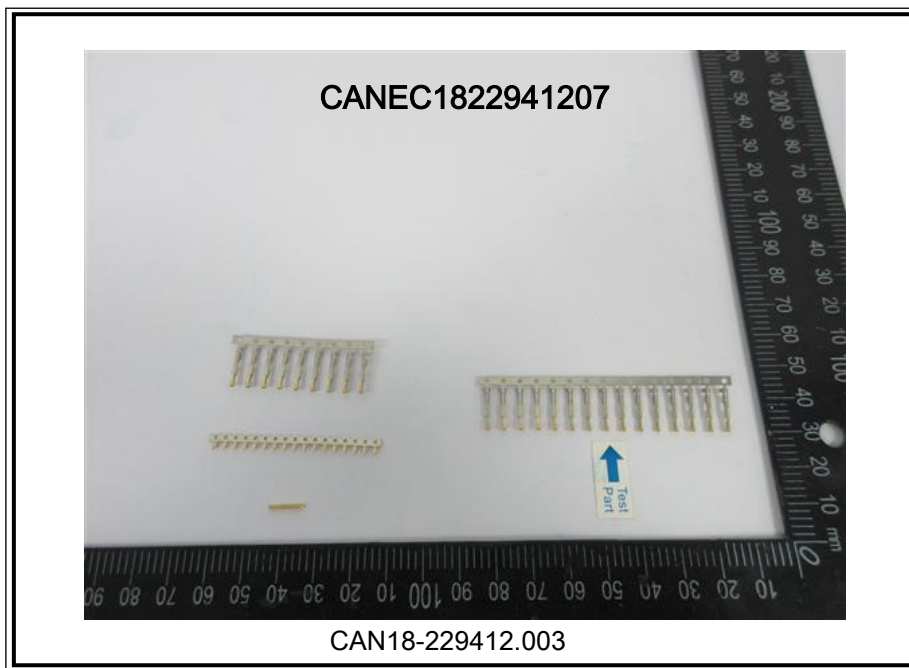
No. CANEC1822941207

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WTB11、RJB11、HDB11、HDB12、HDB13、UCB11、UBB1B、UBB11、UAB16、UADB8、
JAB11、YB、TP、MCMBE1、UMB1B、RJMAE2、BUA0CB、BUA0CB、UCMAJ1、BS0130、
RJMBE1、BS0133、BS0134、TNKBB1、TNTAC1、UATAA1、UAMAE1、USB2.0、UAMAE1、
UATAA1、TNTAE1、UCMAJ1、TNTBT3、9001、9002、5000102、BT035210、THREE IN ONE、
FOUR IN ONE、USB、HDMI、RJ、0308、XSBO、XSB1、UA10103、UA09092、MHF、FPC、
FFC、SATA、CARD、LVM、BS-8、JACK、J-PIM、RCA、BUAOHV、SUASN2、BOO、JTHA8、
BUAO、OEM、TNAOPO、SCA、TUAOPH、SUAS02、AWDANW、AWDCIW、AWDATB、
AHFANB、TNTBC1、TNB12、TNKBG1/2/3/4、UBB14、US90、HE103A、BCO、WUSF5526、
UBDU2、UBMBS1/2、BB0、BPO

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

No. CANEC1911361913

Date: 25 Jun 2019

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Black Toner

SGS Job No. : CP19-031401 - SZ

Tested Sample Info. : Black Toner

Client Ref. Info. : SL10-0004、SL10-0076

Date of Sample Received : 14 Jun 2019

Testing Period : 14 Jun 2019 - 25 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Zmguan

Zm guan
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1911361913

Date: 25 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-113619.002	Black powder

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Date: 25 Jun 2019

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Tin (Sn)	mg/kg	5	ND
Antimony (Sb)	mg/kg	10	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, with reference to US EPA Method 3540C:1996), analysis was performed by GC-MS&HPLC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Di(2-ethylhexyl)adipate (DEHA)	103-23-1	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	%(w/w)	0.010	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.010	ND
Di-n-heptyl Phthalate (DnHpP)	3648-21-3	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND

Notes :

- (1) DBP, BBP, DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:
- Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
 - Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material. In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.
 - shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised



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material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

Phthalate(s)

Test Method : With reference to SGS in house method (SGS-CCL-TOP-042-41) , analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Phthalic acid, mono-2-ethylhexyl ester(MEHP)	4376-20-9	%(w/w)	0.003	ND

European Regulation (EC) No. 850/2004 and its amendment Regulation (EU) 2015/2030 -Chlorinated Paraffins --Articles

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	1500	mg/kg	50	ND
Comment				PASS
Alkanes C14-C17, chloro (medium -chain chlorinated paraffins) (MCCPs)	-	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to US EPA Method 3550C: 2007) , analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)	mg/kg	10	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS / GC-MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.01	ND
Perfluorooctane Sulfonates (PFOS)^		mg/kg	0.01	ND

Notes :

(1) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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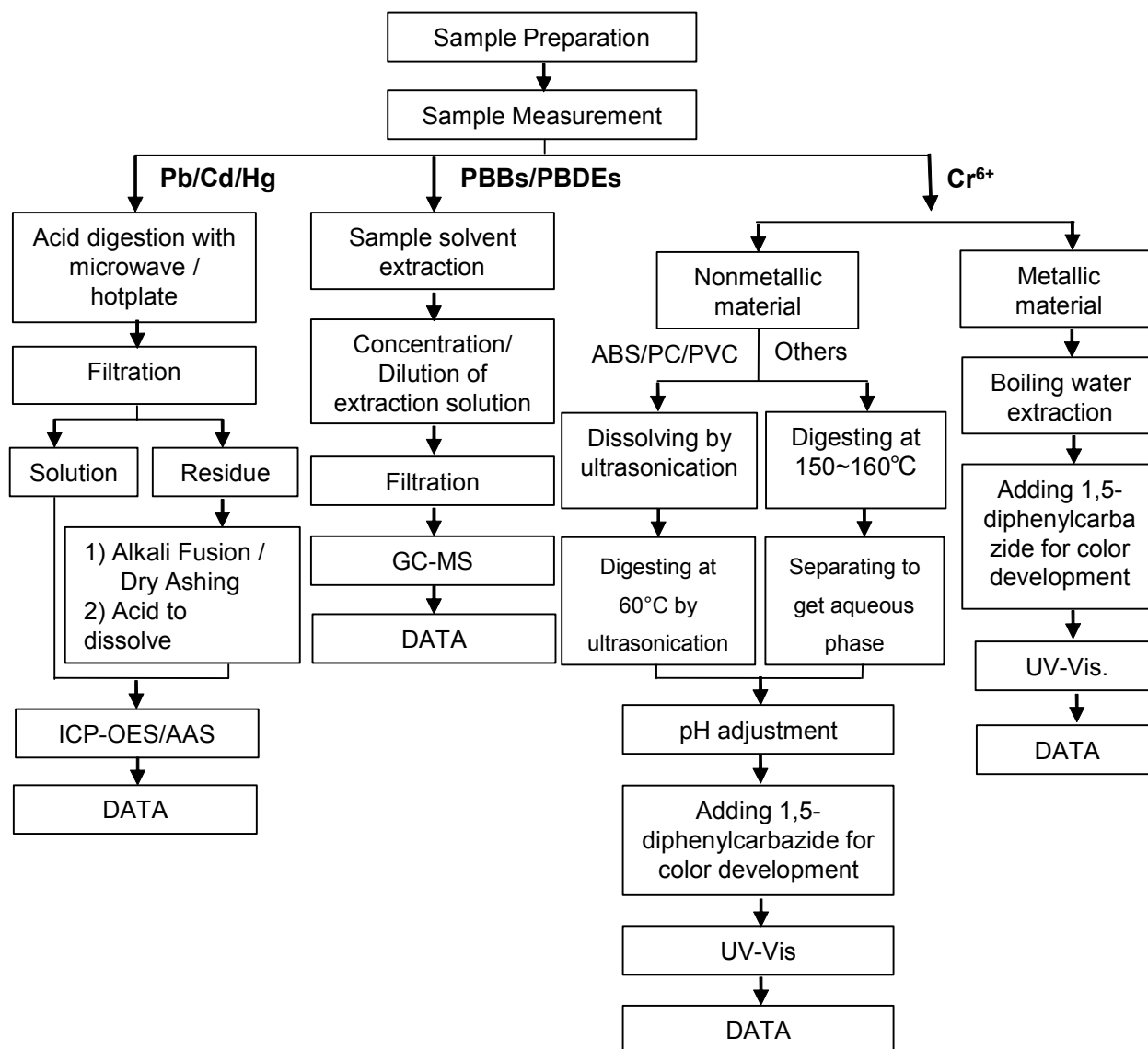
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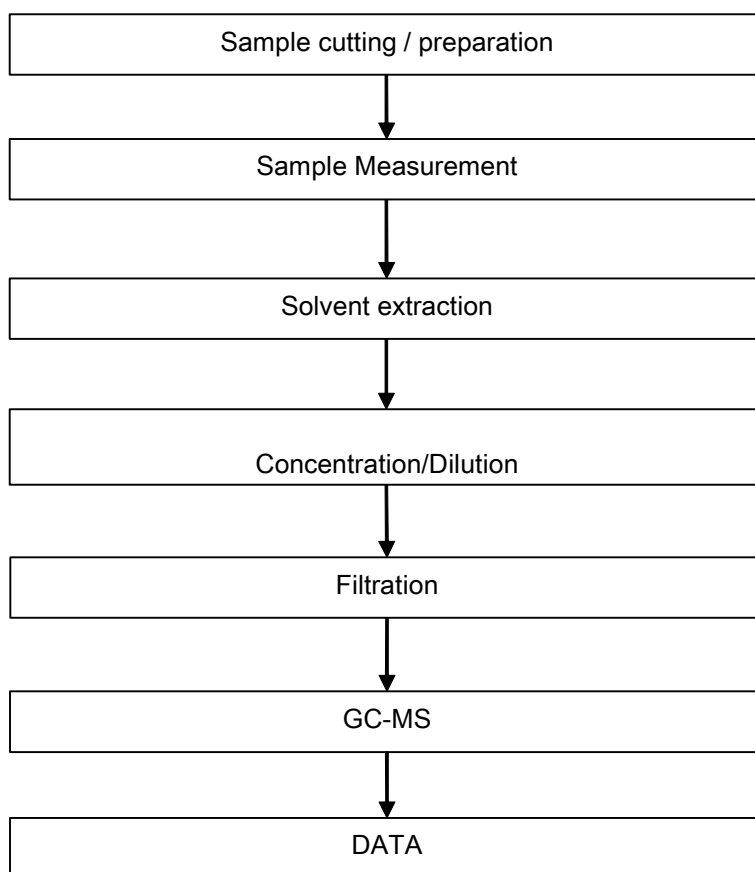
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



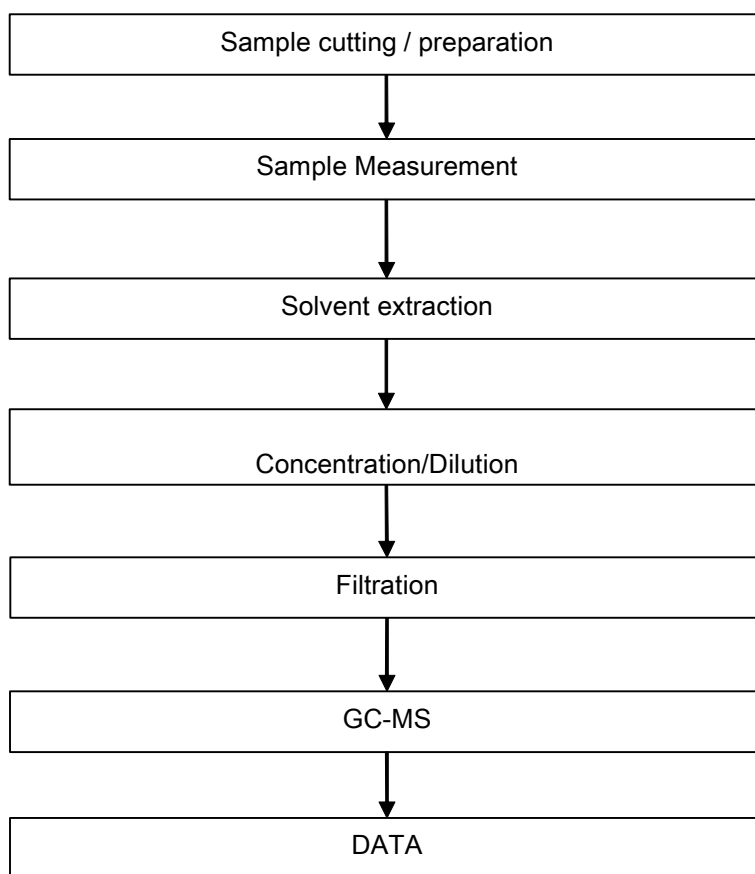
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Phthalates Testing Flow Chart



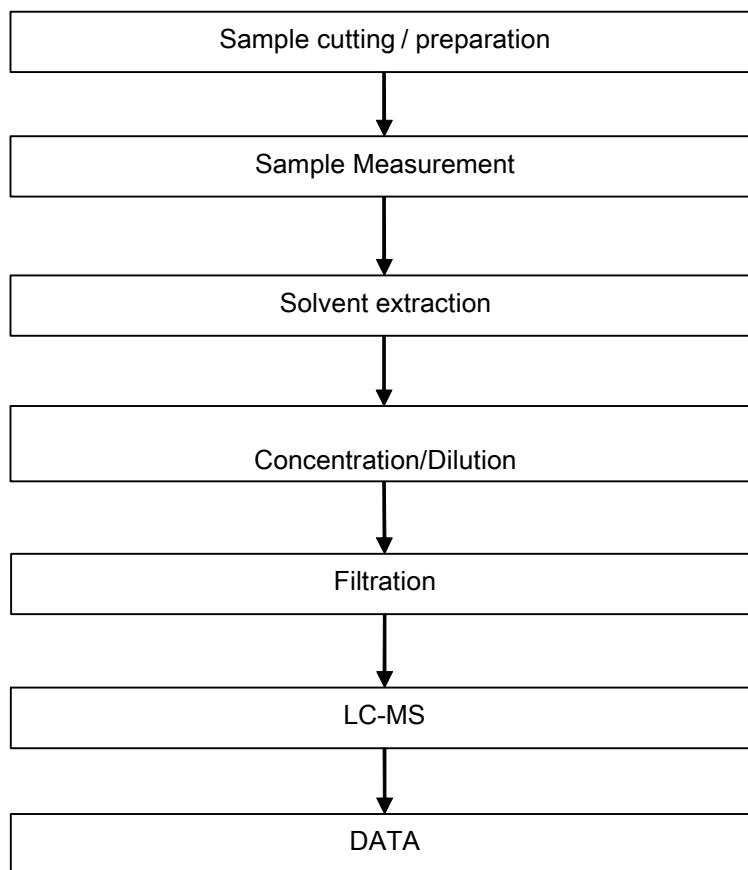
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HBCDD Testing Flow Chart



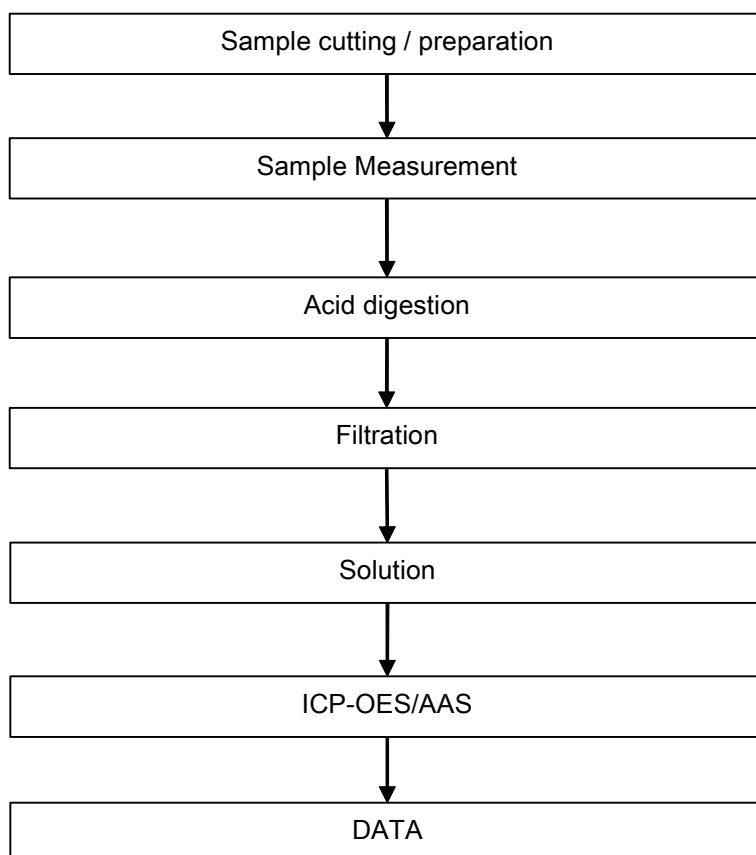
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PFOA / PFOS Testing Flow Chart



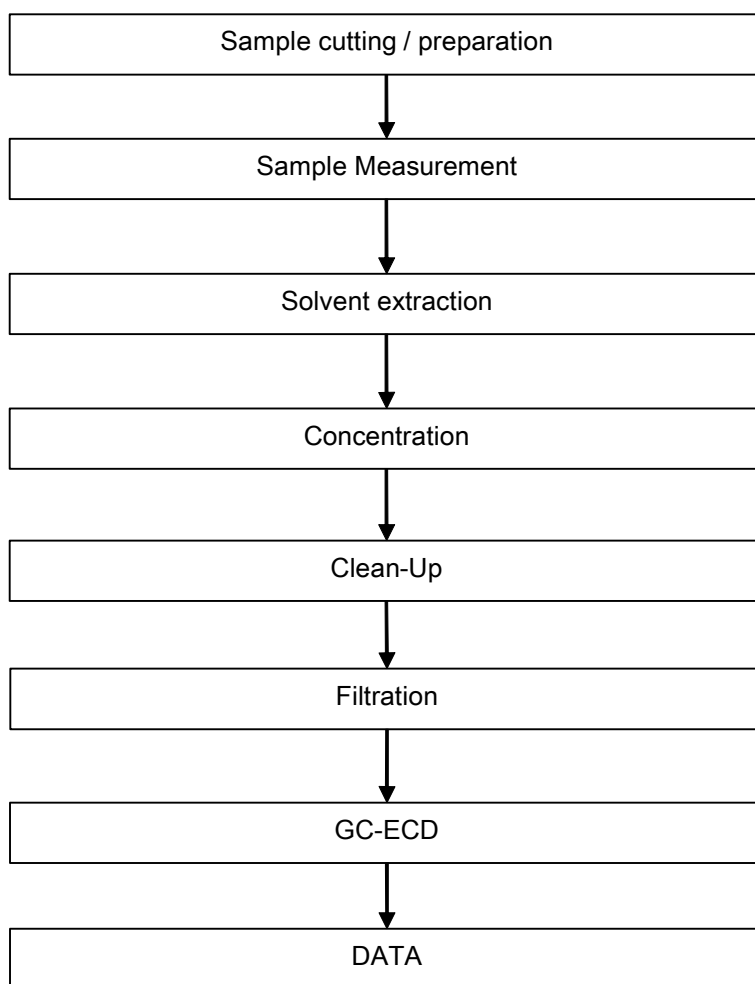
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Elementary Testing Flow Chart



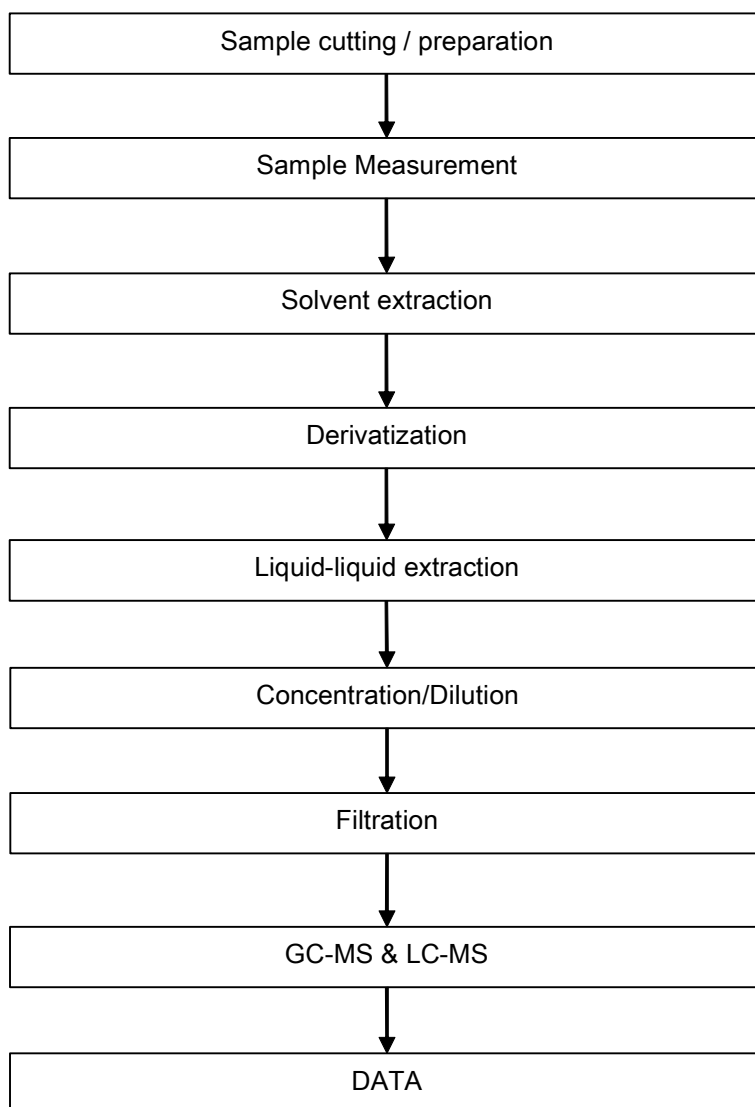
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SCCP/MCCP/LCCP Testing Flow Chart



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TBBP-A Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

弘源碩電子材料有限公司
HungYuanShuo Electronic Accessories CO.,LTD

产品规格承认书

版本：A/1

产品名称	H 无卤环保热缩套管	供应商代码	
规格/型号	所有系列	客户编号	

供應商確認（弘源碩電子材料有限公司）

拟制/日期	审核/日期
范松林 / 2012 年 1 月 15 日	宋大春 / 2012 年 1 月 15 日

客戶確認

客户批准/日期		
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1 主题内容与适用范围

本承认书规定了无卤环保阻燃型热收缩套管的技术要求、试验方法、检验规则以及包装等内容。

本承认书适用于电线连接、焊点保护、电线端部处理、线束及电子元器件的防护和绝缘处理、健身器材零部件和钢结构表面防护、相关产品的防锈和防腐处理、电线和其它产品的标识等用途的无卤阻燃型热收缩套管。

2 引用标准

Standard for Extruded Electrical Tubing UL 224.

3 术语

3.1 热收缩材料

以可塑性线型高聚物或高聚物合金为基材，用高能辐照方法或化学方法使聚合物分子链部分交联成为网状结构获得弹性“记忆效应”，经加热扩张至特定尺寸后冷却定型，使用时加热到适当温度后自行收缩到扩张前的形状和尺寸，这种材料称为热收缩材料。

3.2 热收缩套管

将上述高聚物或高聚物合金通过挤出成型得到规定尺寸的管状中间产品，辐照（或化学）交联后加热扩张，冷却定型得到的具有一定尺寸的管状产品成为热收缩套管。

3.3 绿色 RSFR 无卤阻燃热收缩材料

在热收缩材料中添加一定量的不含卤素、重金属等对环境有害的阻燃剂，使之符合一定阻燃要求和环保要求，则成为绿色 RSFR 无卤阻燃热收缩材料。

4 技术要求

4.1 使用条件

4.1.1 连续使用的环境温度： $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$ 。

4.1.2 可在酸、碱条件下长期使用。

4.1.3 可在环保要求严格的条件下长期使用。

4.2 外观要求

4.2.1 制品表面无明显划伤、凹凸不平、竹节状缺陷。

4.2.2 表面光洁、无油污、无积尘。

4.2.3 印字清晰、无重影、无多余墨迹、无印不全或打滑现象。

4.3 热收缩性能

4.3.1 起始收缩温度 70°C ；超薄型完全收缩温度 110°C ，普通型完全收缩温度 125°C 。

按照 UL224 标准，完全收缩到位温度为 200°C ，3 分钟。

4.3.2 纵向收缩率不超过 $\pm 5\%$

4.4 材料的性能特性

材料的理化性能符合表 1 规定。

4.5 收缩套管的产品尺寸

无卤阻燃型薄壁热收缩套管的产品尺寸符合表 2 规定，无卤阻燃型热收缩套管的产品尺寸符合表 3 规定。

4.6 颜色

标准颜色：黑色、红色、蓝色、黄色、绿色、白色，其它颜色如紫色、灰色、棕色等可根据客户要求定做。

4.7 使用方法

在使用过程中，为了保证热缩套管能完全收缩到位，使用强制鼓风式恒温烘箱，并将收缩温度控制在 125°C 。特别注意，当把热缩套管放入烘箱过程中，烘箱温度有一下降趋势，要达到设定温度需要一定的时间；同时，在烘箱内通过热空气循环流动使热缩套管达到最终收缩温度同样需要一定

的时间。因此，必须在烘箱实际温度达到设定温度并保持该温度 3 分钟左右，热缩套管才能完全收缩到位。

表 1 无卤阻燃型热收缩套管的性能特性

性能			测试方法	性能指标
物理性能	拉伸强度/MPa		GB/T1040	≥10.4
	断裂伸长率/%		GB/T1040	≥200
	热老化后拉伸强度/MPa		UL224; 158℃×168hr	≥7.3
	热老化后断裂伸长率/%		UL224; 158℃×168hr	≥100
	耐热冲击		UL224; 250℃×4hr	不发粘, 不龟裂
	抗冷弯曲		UL224; -30℃×1hr	不龟裂
电气性能	耐压	300V	UL224	2500V 不击穿
		600V	UL224	2500V 不击穿
	击穿强度/KV/mm		GB/T1408	≥15
	体积电阻率/Ω•cm		GB/T1410	≥1×10 ¹⁴
化学性能	铜安定性		UL224; 158℃×168hr	PASS
	抗腐蚀性		UL224; 158℃×168hr	PASS
	阻燃性		UL224	VW-1

表 2 H-CB 管（无卤阻燃型薄壁热收缩套管）的产品尺寸

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围
	内径	壁厚	内径	壁厚	米/盘	米/盘	(mm)
Φ0.6CB	0.90±0.2	0.13±0.05	≤0.40	0.20±0.10	200	400	0.4~0.7
Φ0.8CB	1.10±0.2	0.13±0.05	≤0.50	0.20±0.10	200	400	0.6~0.8
Φ1.0CB	1.40±0.2	0.13±0.05	≤0.65	0.20±0.10	200	400	0.7~1.0
Φ1.5CB	1.90±0.2	0.13±0.05	≤0.85	0.20±0.10	200	400	0.9~1.4
Φ2.0CB	2.40±0.2	0.13±0.05	≤1.00	0.22±0.10	200	400	1.1~1.8
Φ2.5CB	2.90±0.2	0.13±0.05	≤1.30	0.25±0.10	200	400	1.4~2.3
Φ3.0CB	3.40±0.2	0.13±0.05	≤1.50	0.28±0.10	200	400	1.6~2.7
Φ3.5CB	3.90±0.2	0.13±0.05	≤1.80	0.28±0.10	200	400	1.9~3.2
Φ4.0CB	4.40±0.2	0.15±0.05	≤2.00	0.30±0.10	200	400	2.1~3.6
Φ4.5CB	4.90±0.2	0.15±0.05	≤2.30	0.30±0.10	100	200	2.4~4.0
Φ5.0CB	5.50±0.2	0.15±0.05	≤2.5	0.32±0.10	100	200	2.6~4.5
Φ6.0CB	6.50±0.2	0.15±0.05	≤3.0	0.32±0.10	100	200	3.1~5.4
Φ7CB	7.50±0.3	0.15±0.05	≤3.5	0.32±0.10	200	200	3.7~6.3
Φ8CB	8.50±0.3	0.15±0.05	≤4.0	0.32±0.10	200	200	4.2~7.2
Φ9CB	9.50±0.3	0.15±0.05	≤4.5	0.35±0.10	200	200	4.7~8.0
Φ10CB	10.5±0.3	0.15±0.05	≤5.0	0.35±0.10	200	200	5.2~9.0

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Φ11CB	11.5±0.3	0.18±0.05	≤5.5	0.40±0.10	200	200	5.7~10.0
Φ12CB	12.5±0.3	0.20±0.05	≤6.0	0.40±0.10	200	200	6.2~11.0
Φ13CB	13.5±0.3	0.20±0.05	≤6.5	0.40±0.10	200	200	6.7~12.0
Φ14CB	14.5±0.3	0.20±0.05	≤7.0	0.40±0.10	200	200	7.3~13.0
Φ15CB	15.5±0.4	0.20±0.05	≤7.5	0.40±0.10	200	200	7.8~14.0
Φ16CB	16.5±0.4	0.22±0.05	≤8.0	0.40±0.10	200	200	8.3~15.8
Φ17CB	17.5±0.4	0.22±0.05	≤8.5	0.40±0.10	200	200	8.8~16.0
Φ18CB	18.5±0.4	0.22±0.05	≤9.0	0.42±0.10	200	200	9.3~17.0
Φ20CB	20.5±0.5	0.25±0.05	≤10.0	0.45±0.10	200	200	10.5~19.0
Φ22CB	22.5±0.5	0.25±0.05	≤11.0	0.45±0.10	200	200	11.5~20.5
Φ25CB	25.5±0.5	0.25±0.05	≤12.5	0.45±0.10	100	100	13.0~24.0

E203950   (W) WOER RSFR(CB) TUBE 125℃ VW-1 H (Φ9CB)

表3 H管（无卤阻燃型热收缩套管）的产品尺寸要求

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装 米/盘	新包装 米/盘	适用范围 (mm)
	内径	壁厚	最大内径	壁厚			
Φ0.6	0.9±0.2	0.18±0.05	≤0.40	0.33±0.10	200	400	0.4~0.7
Φ0.8	1.1±0.2	0.18±0.05	≤0.50	0.33±0.10	200	400	0.6~0.8
Φ1.0	1.5±0.2	0.20±0.05	≤0.65	0.36±0.10	200	400	0.75~0.9
Φ1.5	2.0±0.2	0.20±0.05	≤0.85	0.36±0.10	200	400	0.95~1.4
Φ2.0	2.5±0.2	0.20±0.05	≤1.00	0.45±0.10	200	400	1.1~1.8
Φ2.5	3.0±0.2	0.20±0.05	≤1.30	0.45±0.10	200	400	1.35~2.3
Φ3.0	3.5±0.2	0.23±0.05	≤1.50	0.45±0.10	200	400	1.6~2.7
Φ3.5	4.0±0.2	0.23±0.05	≤1.80	0.45±0.10	200	400	1.85~3.2
Φ4.0	4.5±0.2	0.25±0.05	≤2.00	0.45±0.10	200	400	2.1~3.6
Φ4.5	5.0±0.2	0.28±0.05	≤2.30	0.56±0.10	100	200	2.35~4.0
Φ5.0	5.5±0.2	0.28±0.05	≤2.50	0.56±0.10	100	200	2.6~4.5
Φ6.0	6.5±0.2	0.28±0.05	≤3.00	0.56±0.10	100	200	3.1~5.4
Φ7.0	7.5±0.3	0.30±0.05	≤3.50	0.56±0.10	100	100	3.7~6.3
Φ8.0	8.5±0.3	0.30±0.08	≤4.00	0.56±0.10	100	100	4.2~7.2
Φ9.0	9.5±0.3	0.30±0.08	≤4.50	0.56±0.10	100	100	4.7~8.0
Φ10	10.5±0.3	0.30±0.08	≤5.00	0.56±0.10	100	100	5.2~9.0
Φ11	11.5±0.3	0.30±0.08	≤5.50	0.56±0.10	100	100	5.7~10
Φ12	12.5±0.3	0.30±0.08	≤6.00	0.56±0.10	100	100	6.2~11
Φ13	13.5±0.3	0.35±0.08	≤6.50	0.56±0.10	100	100	6.7~12
Φ14	14.5±0.3	0.35±0.10	≤7.00	0.70±0.10	100	100	7.3~13
Φ15	15.5±0.4	0.35±0.10	≤7.50	0.70±0.10	100	100	7.8~14

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规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围 (mm)
Φ 16	16.5±0.4	0.35±0.10	≤8.00	0.70±0.10	100	100	8.3~15
Φ 17	17.5±0.4	0.35±0.10	≤8.50	0.70±0.10	100	100	8.8~16
Φ 18	19.0±0.5	0.35±0.10	≤9.00	0.70±0.10	100	100	9.3~17
Φ 20	22.0±0.5	0.40±0.10	≤10.00	0.83±0.10	100	100	10.4~19
Φ 22	24.0±0.5	0.40±0.12	≤11.00	0.83±0.15	100	100	11.4~21
Φ 25	26.0±0.5	0.45±0.12	≤12.50	0.90±0.15	50	50	12.8~24
Φ 28	29.0±0.5	0.45±0.12	≤14.00	0.90±0.15	50	50	14.4~29
Φ 30	31.5±1.0	0.45±0.12	≤15.00	1.00±0.15	50	50	16~29
Φ 35	36.5±1.0	0.45±0.12	≤17.50	1.00±0.15	50	50	18~34
Φ 40	41.5±1.0	0.50±0.12	≤20.00	1.00±0.15	50	50	21~39
Φ 45	46.5±1.0	0.50±0.15	≤22.50	1.00±0.20	25	25	23.5~44
Φ 50	≥50	0.50±0.15	≤25.00	1.10±0.20	25	25	26~49

E203950   WOER RSFR-H TUBE 125°C VW-1 H (Φ9)

注: Φ30 及以上规格产品默认为 G 管 (环保性能符合欧盟 RoHS 2002/95/EC 标准)。如果客户需 H 无卤热缩套管, 须在订单上注明。

4.8 环境物质

本承认书承诺不使用以下物质, 四大重金属、多溴联苯 (PBB)、多溴联苯醚 (PBDE)、卤素等通过 SGS 检测。无卤阻燃型热收缩套管的环保特性列于表 4。

1. 多氯化联苯 (PCB) 类
2. 多氯化萘 (PCN) 类
3. 氯化石蜡
4. 灭蚁灵 (Mirex)
5. 其它有机氯化物
6. 有机溴化合物-多溴联苯 (PBB)
7. 有机溴化合物-多溴联苯醚 (PBDE)
8. 有机锡化合物 (三丁基锡化合物和三苯基锡化合物)
9. 石棉
10. 偶氮化合物
11. 甲醛

表 4 无卤阻燃型热收缩套管的环保特性

环境物质	含量	测试方法
氟 (F)	≤200PPM	EN 14582 Method B
氯 (Cl)	≤900ppm	EN 14582 Method B
溴 (Br)	≤900ppm	EN 14582 Method B
碘 (I)	≤200PPM	EN 14582 Method B

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镉 (Cd)	≤5ppm	IEC 62321
铅 (Pb)	≤90ppm	IEC 62321
铬 (Cr ⁶⁺)	≤5ppm	IEC 62321
汞 (Hg)	≤5ppm	IEC 62321
砷 (As)	≤50ppm	EPA 3052
钡 (Ba)	≤1000ppm	EPA 3052
锑 (Sb)	≤60ppm	EPA 3052
硒 (Se)	≤25ppm	EPA 3052

备注：氯 (Cl) + 溴 (Br) <1500ppm

5. 材质证明书

材 质 证 明 书

沃尔核材股份有限公司无卤环保型 RSFR-H 热缩套管是一种阻燃型的热收缩套管，组成材料为聚烯烃加适量阻燃剂和助剂。产品中铅 (Pb)、镉 (Cd)、汞 (Hg)、六价铬 (Cr⁶⁺)、多溴联苯 (PBB)、多溴联苯醚 (PBDE) 等环境物质含量符合日本 SONY-SS-00259 和欧盟 RoHS 2002/95/EC 指令环保要求。其主要成份如下：

原料名称			使用目的	含量	供应商	CAS. NO.
中文	英文	分子式				
聚烯烃	Polyolefin	(CH ₂ CH ₂) _n	主剂	50%	北京有机	9002-88-4
氢氧化镁	Magnesium Hydroxide	Mg(OH) ₂	阻燃剂	35%	锦昊辉	1309-42-8
磷系阻燃剂	Phosphorus	(NH ₄ PO ₃) _n	阻燃剂	10%	上海海以	7723-14-0
色母粒	Pigment	色母+填充剂	着色剂	5%	华万彩	——
油墨	Printing Ink	——	印字	——	上海捷信	——

6. 技术资料

- (1) UL/cUL 证书
- (2) ISO9001 证书
- (3) ISO14001 证书
- (4) ISO/TS16949 证书
- (5) SGS/ITS/CTI 检测报告

弘源碩電子材料有限公司

二零一二年一月十五日



YDPU2.E203950 Tubing, Extruded Insulating - Component

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Tubing, Extruded Insulating - Component

[See General Information for Tubing, Extruded Insulating - Component](#)

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD

E203950

XINWEI INDUSTRIAL PARK, WOER MANSION

NANSHAN DISTRICT, XILI

SHENZHEN, GUANGDONG 518052 CHINA

Cat. No.	Max V	Max Temp C	Col Recognized	Max Temp Rated Oil Resistance C	VW-1 Rated #
Flexible Heat-Shrinkable Polyolefin Tubing					
RSFR	600	125	All except Clear	None	\$
WKZM-x-yz	600	125	White	None	No
RSFR-H	600	125	All except Clear	None	Yes
RSFR(CB)	300	125	All except Clear	None	Yes
Not Heat-Shrinkable PTFE Tubing					
WF	600	200	Natural	None	Yes
Heat-Shrinkable Polyolefin Tubing with Meltable Liner					
SBRS	600	125	All except Clear	None	Yes
Not Heat-Shrinkable Standard Wall Silicone Tubing					
WST-600	600	150	White	None	@

x-yz - x represents tubing expanded ID, yz represents any alpha and/or numeric combination - for internal client code.

- Tubing is considered to comply with the optional VW-1 flammability requirements only if it is so marked for tubing authorized below.

@ - VW-1 rated for internal diameter sizes 6.50 - 15.00 mm only.

\$ - VW-1 rated for Black color only.

Marking: Company name or file number "E203950", catalog number, voltage rating, temperature rating in degrees C, inside diameter (before and after recovery), and date of manufacture shall be marked on tags attached to both ends of the tubing, on the shipping spool label or on the smallest unit container.

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Test Report (SVHC)

No. CANEC1822723201

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SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.
WOER MANSION,LANJING NORTH ROAD,PINGSHAN INDUSTRIAL ZONE, LONGGANG
DISTRICT,SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PLEASE SEE REMARK

SGS Job No. : CP18-059386 - SZ

Date of Sample Received : 02 Nov 2018

Testing Period : 02 Nov 2018 - 08 Nov 2018

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety one (191) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Six (6) substances in the Public Consultation List of potential Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on Sep 4, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-227232.001	Black tube w/whitie printing

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Consultation List of potential SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in consultation list	-	ND	-



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Guangzhou Branch Testing Center Chemical Laboratory

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
 - ** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. / = Substances in the Consultation List of SVHC.



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Guangzhou Branch Testing Center Chemical Laboratory

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
/	192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
/	193	Benzo[k]fluoranthene	207-08-9	0.050
/	194	Fluoranthene	206-44-0	0.050
/	195	Phenanthrene	85-01-8	0.050
/	196	Pyrene	129-00-0	0.050
/	197	Undecafluorohexanoic acid and its ammonium salt	307-24-4, 21615-47-4	0.050



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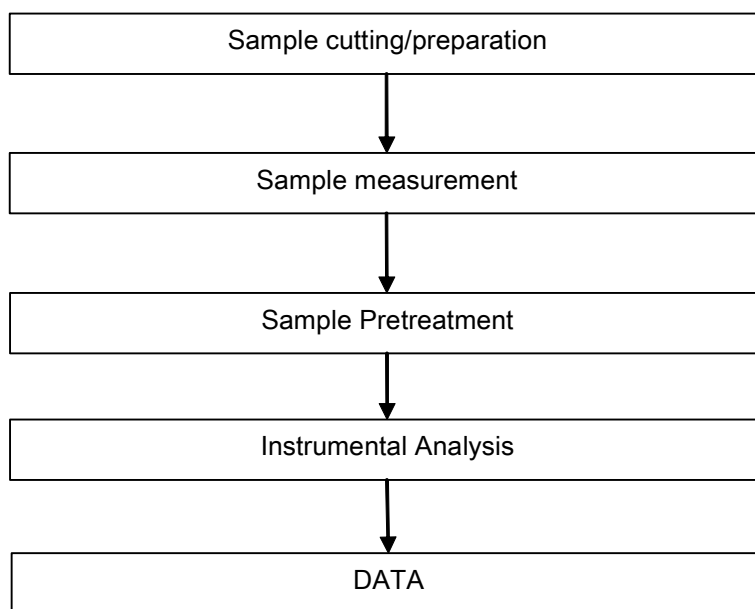
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ATTACHMENTS

SVHC Testing Flow Chart




Test Report (SVHC)

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REMARK:

RSFR-H HEAT SHRINKABLE TUBINGS (E203950 
WOER RSFR-H TUBE 125°C VW-1 H)



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Sample photo:



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Test Report



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Report No. A2190096126101003R1

Applicant SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

Address WOER INDUSTRIAL PARK, LANJING NORTH ROAD, LONGTIAN STREET, PINGSHAN DISTRICT, SHENZHEN, GUANGDONG.

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name PE masterbatch- Black
Sample Received Date Apr. 26, 2019
Testing Period Apr. 26, 2019 to Apr. 29, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Crit Qin

Approved by

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

May 17, 2019

No. R179757340

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190096126101003R1

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

Test Report

Report No. A2190096126101003R1

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	36 mg/kg	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

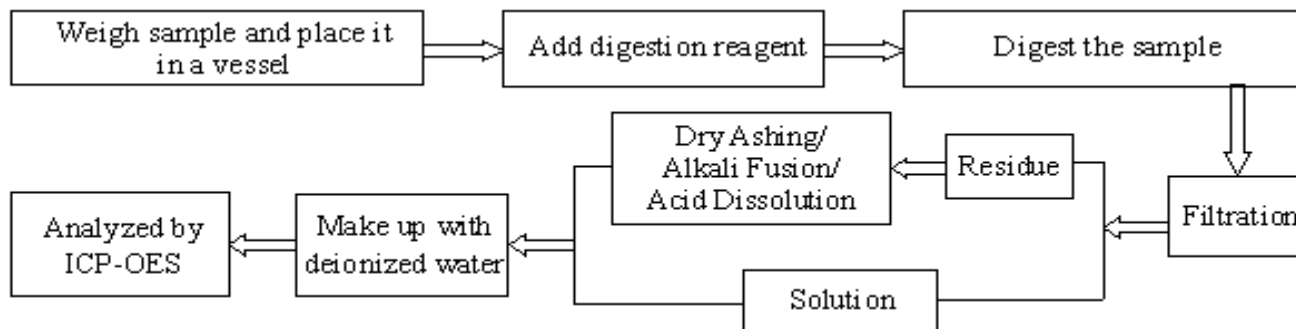
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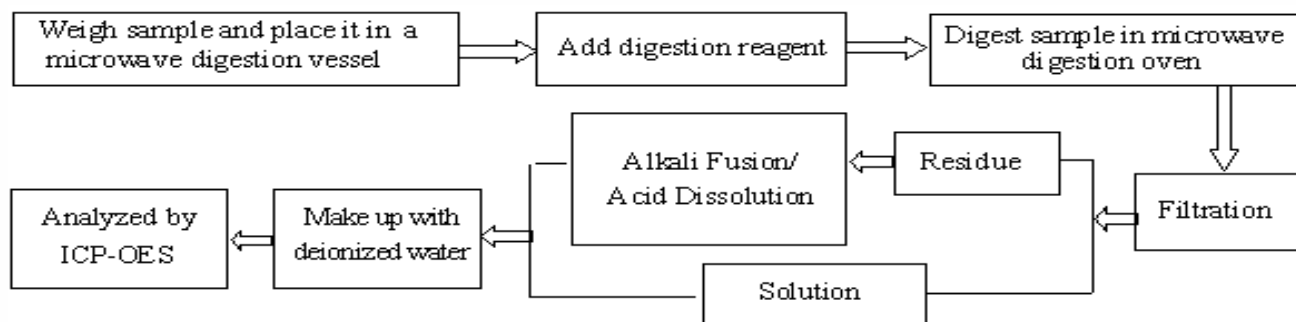
Page 5 of 7

Test Process

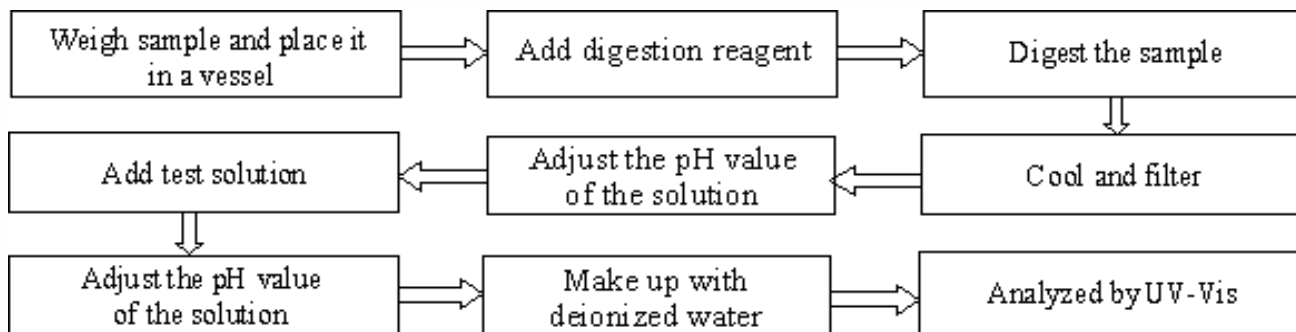
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



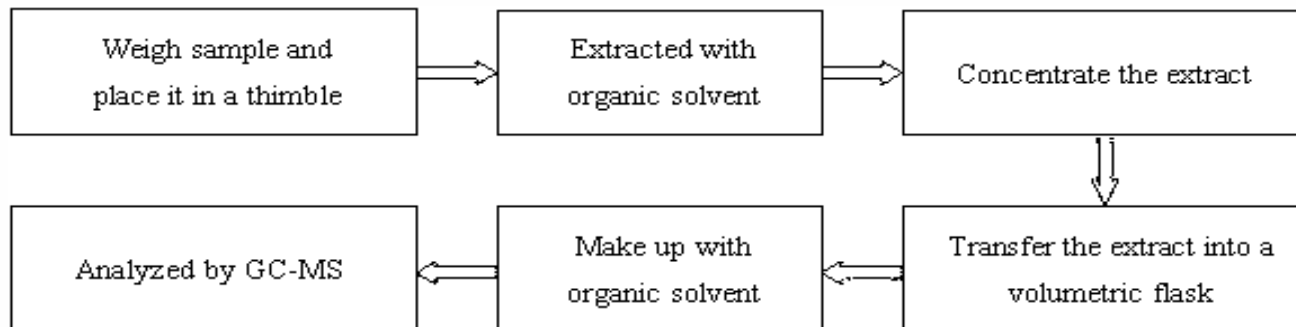
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

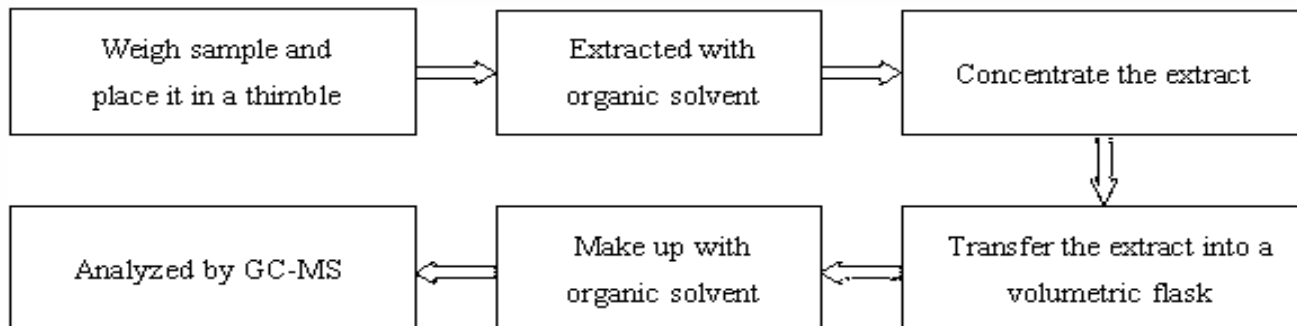


Test Report

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5. Phthalates (DBP, BBP, DEHP, DIBP)



Test Report

Report No. A2190096126101003R1

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : HALOGEN FREE WHITE INK

SGS Job No. : CP19-032627 - SZ

Model No. : I-TPE-01

Client Ref. Info. : I-PE-01; I-TPE-01;I-TPR-01;I-PE-01; I-PPE-01;I-PP-01;I-TPU-01;I-RU-01

Date of Sample Received : 19 Jun 2019

Testing Period : 19 Jun 2019 - 26 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi

Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-117806.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
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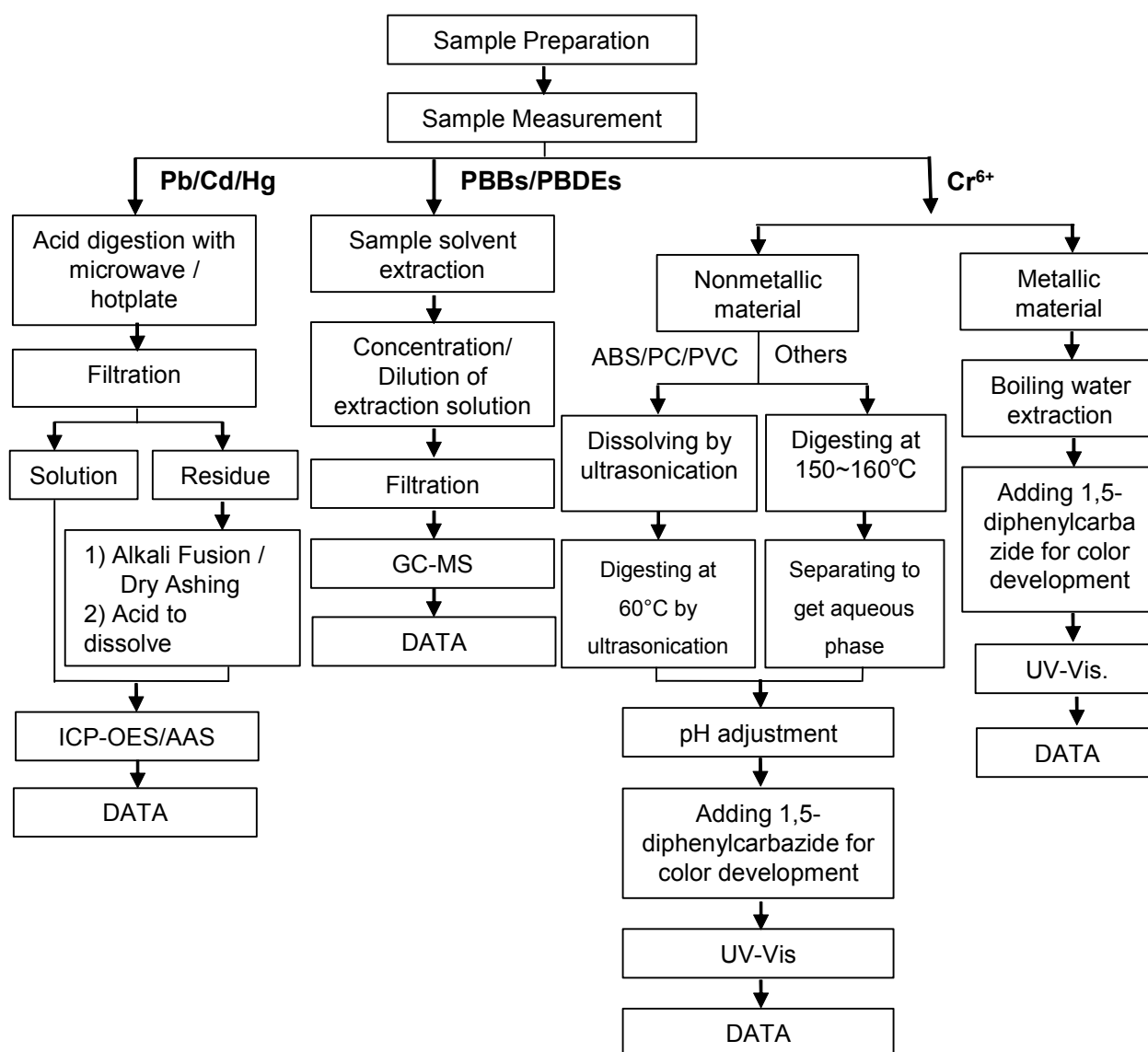
Remark: The result(s) shown is/are of the total weight of dried sample.



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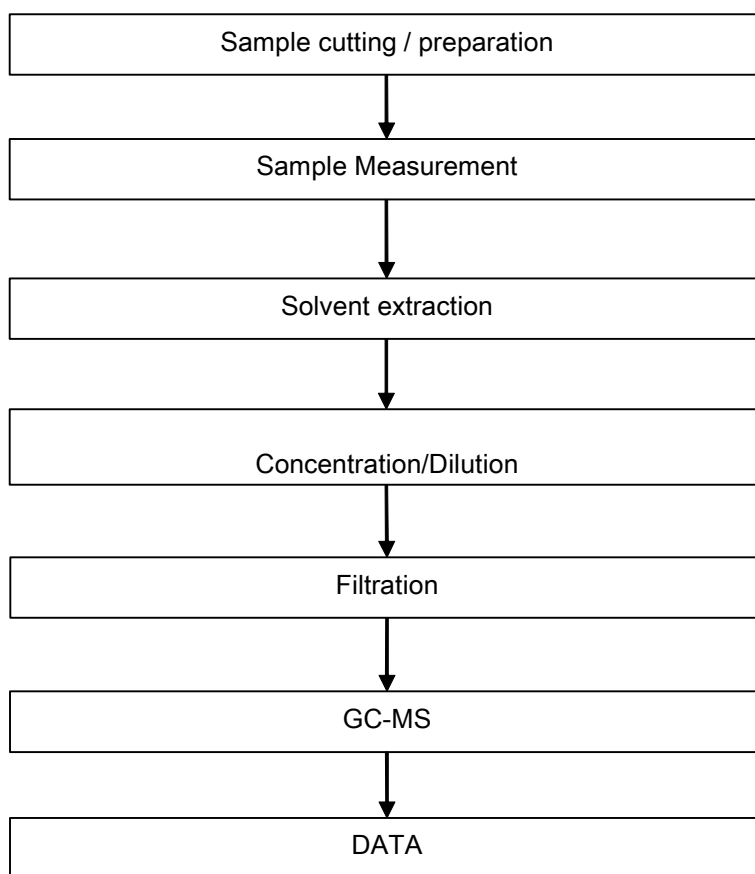
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1911780603

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Sample photo:



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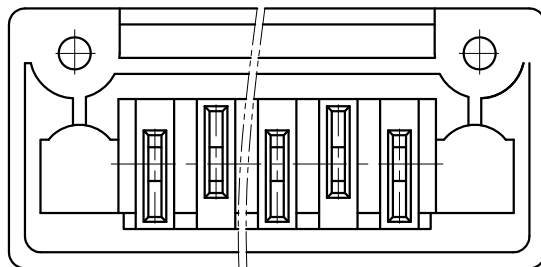


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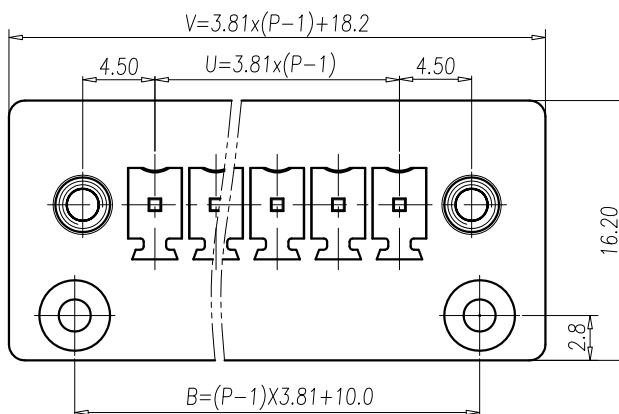
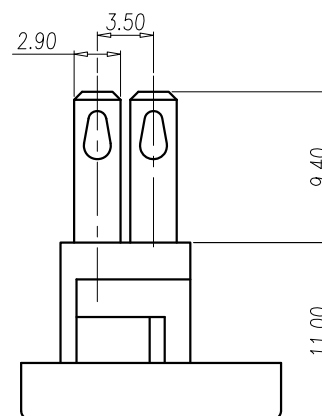
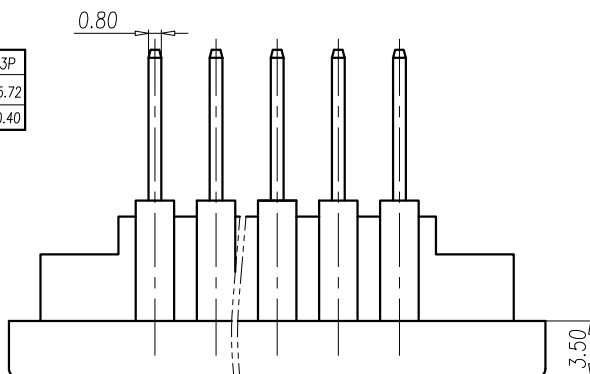
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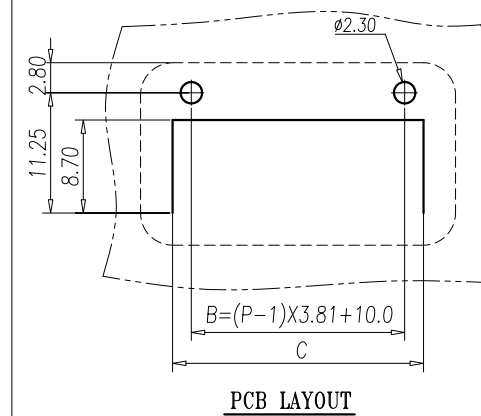
P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P	12P	13P
B	13.81	17.62	21.43	25.24	29.05	32.86	36.67	40.48	44.29	48.10	51.91	55.72
C	18.50	22.30	26.10	29.90	33.80	37.60	41.40	45.10	49.00	52.80	56.60	60.40
P	14P	15P	16P	17P	18P	19P	20P	21P	22P	23P	24P	
B	59.53	63.34	67.15	70.96	74.77	78.58	82.39	86.20	90.01	93.82	97.63	
C	64.20	68.00	71.90	75.72	79.52	83.22	87.12	90.92	94.72	98.52	102.42	



Total Pitch Tolerances		Normal Dimension Tolerances	
0~30	±0.20	0~30	±0.25
over 30~53	±0.25	over 30~53	±0.30
over 53~70	±0.30	over 53~70	±0.35
over 70~90	±0.35	over 70~90	±0.44
over 90~115	±0.44	over 90~115	±0.55
over 115~150	±0.55	over 115~150	±0.70
over 150~200	±0.70	over 150~200	±0.85
over 200~250	±0.85	over 200~250	±1.00
over 250~320	±1.00	over 250~320	±1.20

REV.	CONTENT	NAME	DATE
6			

DWG.	ZHH	DATE	2017.01.20	UNITS	MM	SHEET/OF	1 / 1
CHK.		DATE		SCALE	3:1 (:)		
APP.		DATE		NAME	ECHP381V-XXP		
 DINKLE				DDWG NO.	SP-03-ECHP381V		
DINKLE ENTERPRISE CO., LTD							



NOTES 1:

UL Standard :

- 1.Rating: 300V 8A
- 2.Insulation Withstands Voltage:
AC 1600V at 1 minute
- 3.Using Temperature Range:
-40°C~+115°C
- 4.Suitable Electric Wire:AWG 28~16

IEC Standard:

1. Rating: 320V 14A
2. Rate Impulse Voltage: 2500V
3. Insulation Resistance:
500MΩ or more at DC500V
4. Material Group : I
5. Pollution Degree : 2
6. Overvoltage Category: II
7. Using Temperature Range:
-40°C~+120°C

NOTES 2:

1. RoHS Compliance

3	NUT	COPPER ALLOY	M2.5x0.45
2	SOLDER PIN	COPPER ALLOY	Tin Plated
1	HOUSING	PA66	UL94-V0 GREEN
ITEM	NAME OF PART	MATERIAL	NOTES

Test Report

No. SHAEC1919684903

Date: 05 Sep 2019

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DINKLE ELECTRIC MACHINERY (CHINA) CO.,LTD

NO.258, XINGPU MID ROAD, SHIPU BUSINESS ADMINISTRATION ESTATE, QIANDENG TOWN,
KUNSHAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : PA66 DP
A30SFN30+DUS025 (GREEN)

SGS Job No. : SP19-030244 - SH

Supplier : LANXESS

Date of Sample Received : 03 Sep 2019

Testing Period : 03 Sep 2019 - 05 Sep 2019

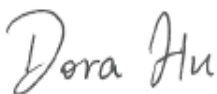
Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Dora Hu
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA19-196849.002	Green plastic grains

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Red Phosphorus

Test Method : SGS in house method(SHTC- CHEM- SOP -342-T), Analysis was performed by ICP-OES and Pyrolysis-GC/MS

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Red Phosphorus	mg/kg	500	ND

Notes :

For Positive result, the testing result is based on the worst-case scenario, and confirmed by Pyrolysis-GC-MS.

Hexabromocyclododecane (HBCDD)



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Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND



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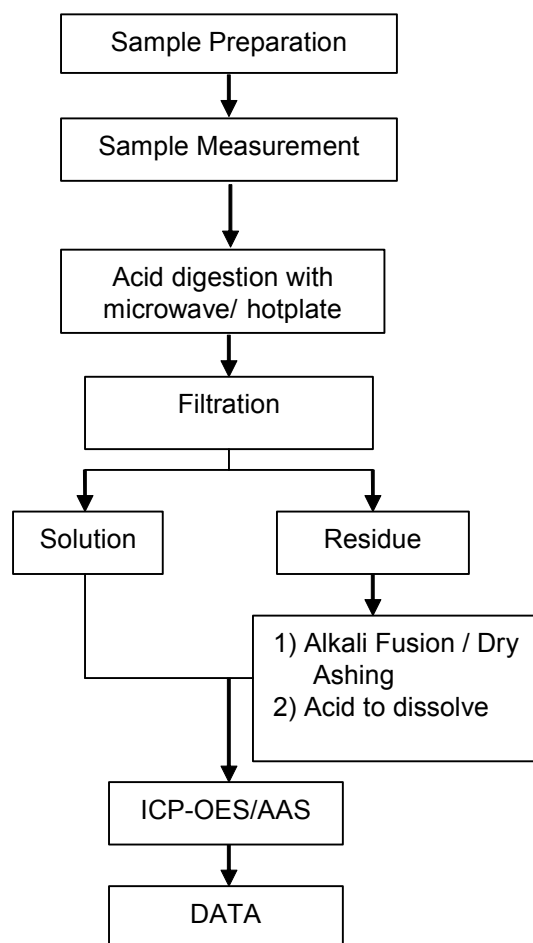
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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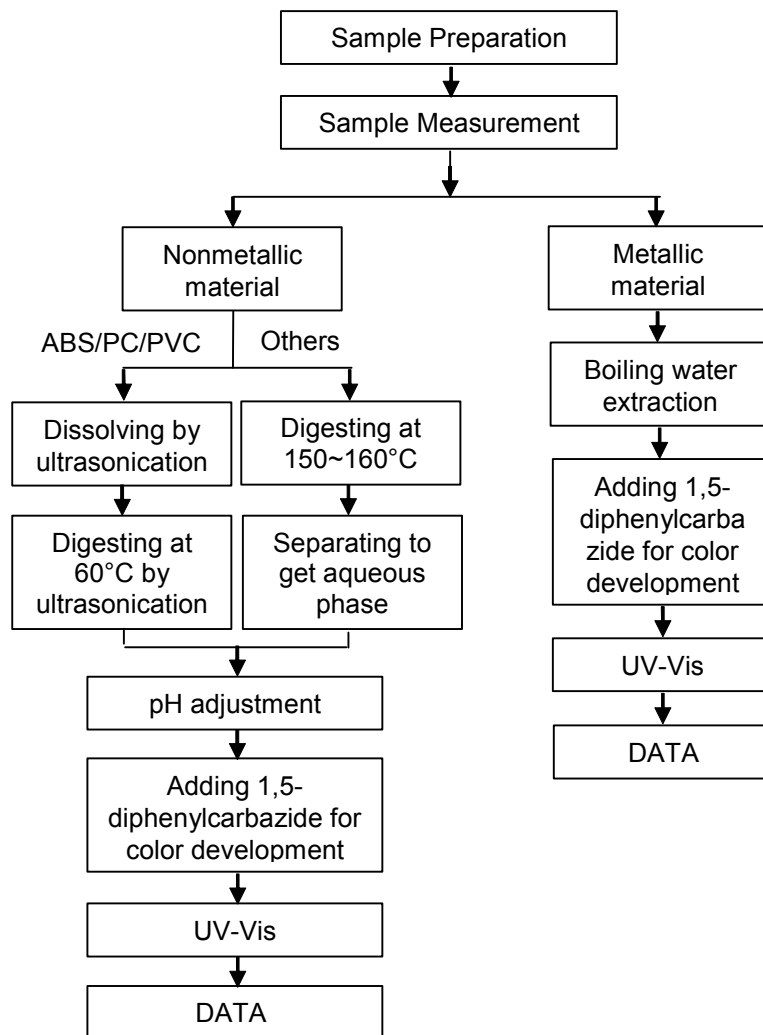
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



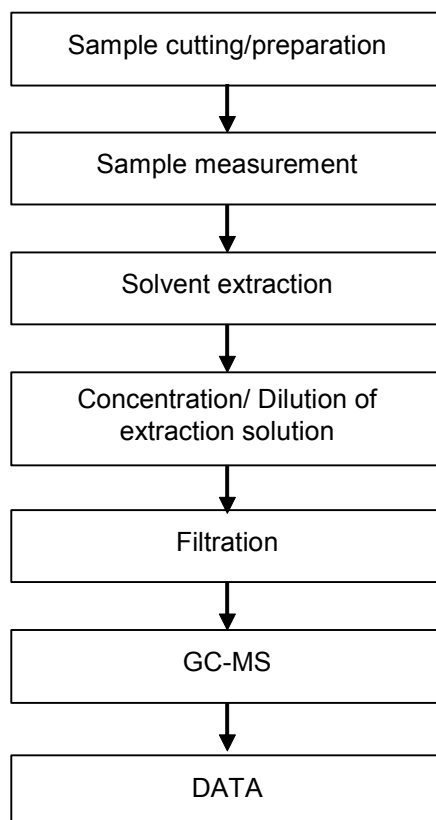
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PBBs/PBDEs Testing Flow Chart



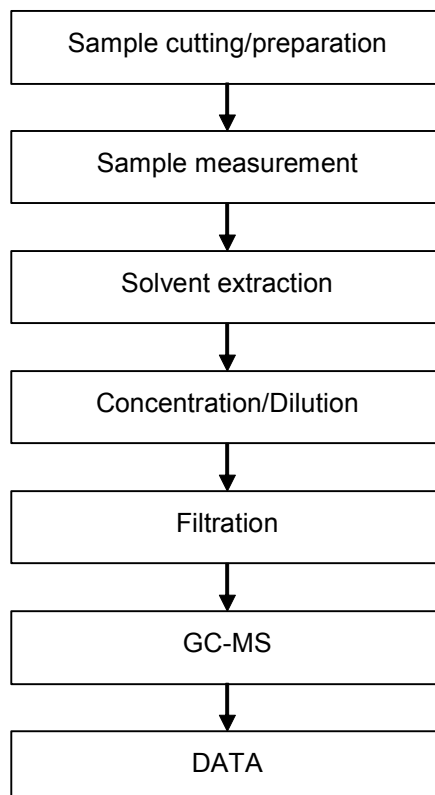
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Phthalates Testing Flow Chart



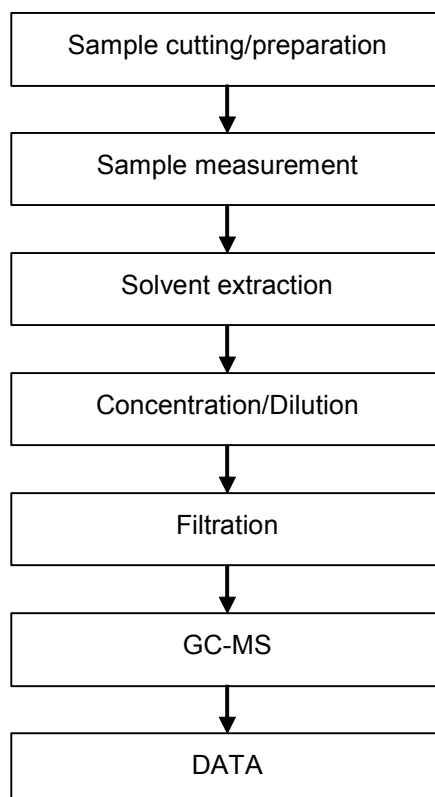
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HBCDD Testing Flow Chart



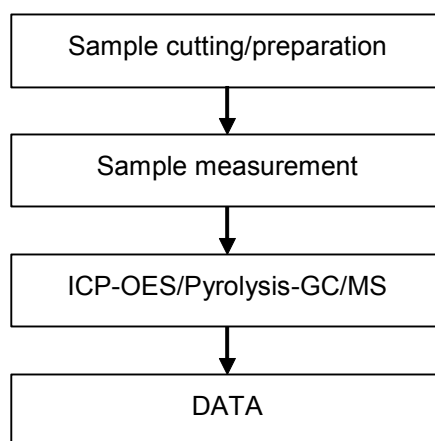
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Red Phosphorus Testing Flow Chart



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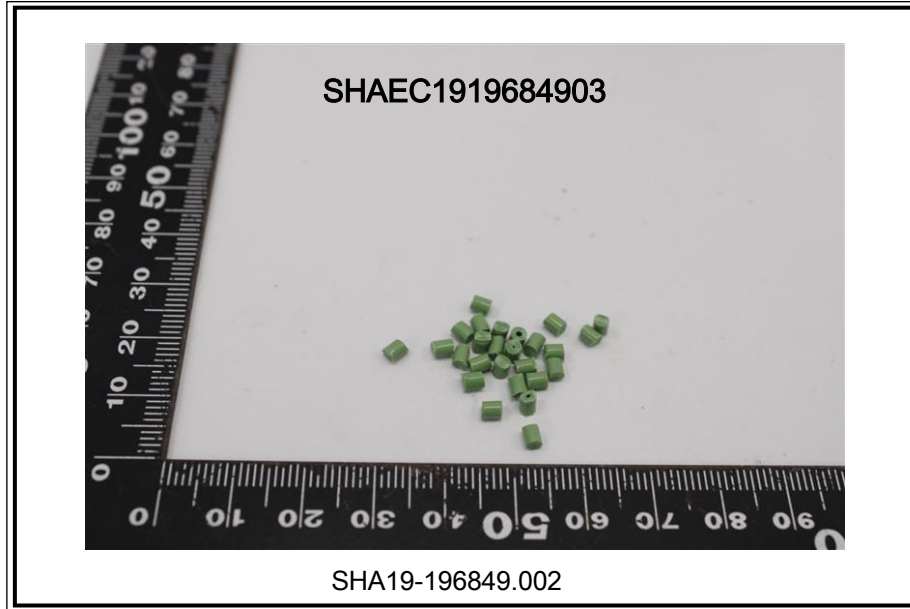
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No. SHAEC1919684903

Date: 05 Sep 2019

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Sample photo:



SGS authenticate the photo on original report only

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Test Report



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Report No. A2180247928101002

Applicant DONGGUAN CITY NOIMIA INDUSTRIAL CO., LTD

Address DONGGUAN CHANGAN TOWN MANSION HILLOCK FORTUNA'S UNIVERSAL
INDUSTRIAL CITY ROAD F BUILDING

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name C3604
Part No. C3604
Sample Received Date Dec. 14, 2018
Testing Period Dec. 14, 2018 to Dec. 18, 2018

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Lily Li

Approved by

Hill Zheng

Hill Zheng

Technical Manager

Reviewed by

Iori Xia

Date

Dec. 18, 2018

No. R158921180

Centre Testing International Group Co., Ltd.

CTI Building, No.4, Liuxian 3rd road, Xin'an Street, Bao'an District, Shenzhen, P.R.China

Test Report

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	32984 mg/kg	2 mg/kg
Cadmium(Cd)	33 mg/kg	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D. ▼	0.10 µg/cm ² (LOQ)
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Sample/Part Description Golden metal

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL or LOQ)
- mg/kg = ppm = parts per million
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm²
- ▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 µg/cm². The coating is considered a non-Cr(VI) based coating.

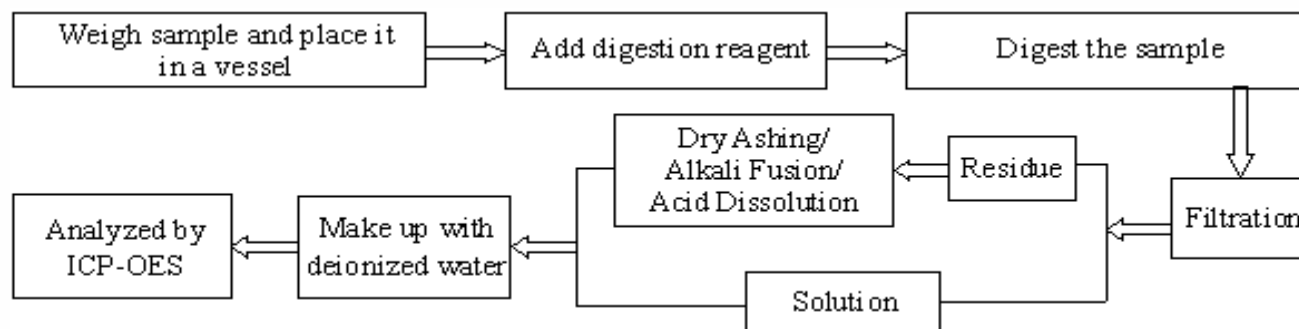
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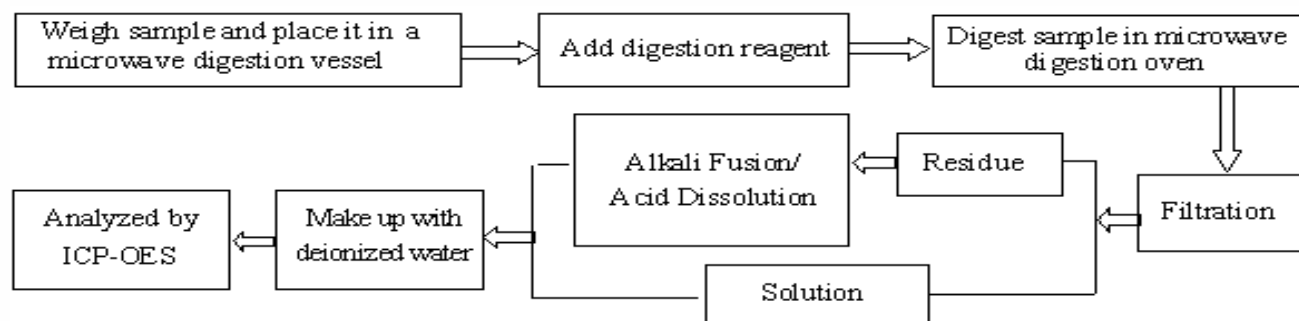
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Test Process

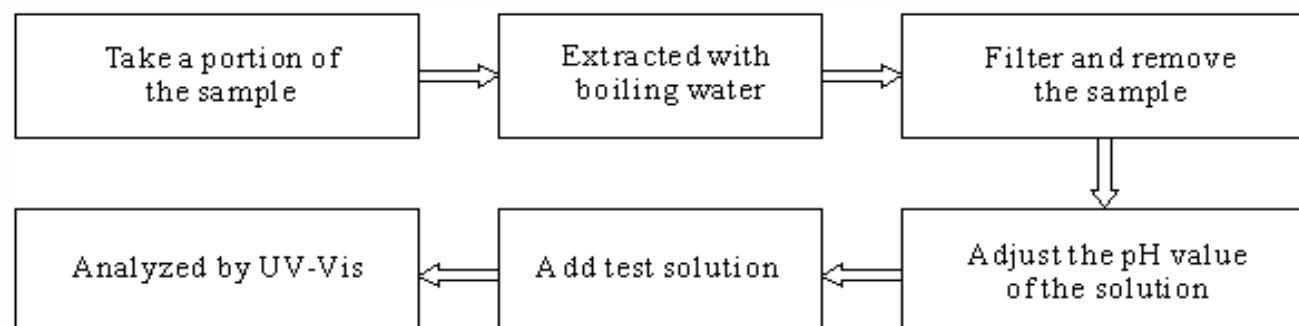
1. Lead(Pb), Cadmium(Cd)



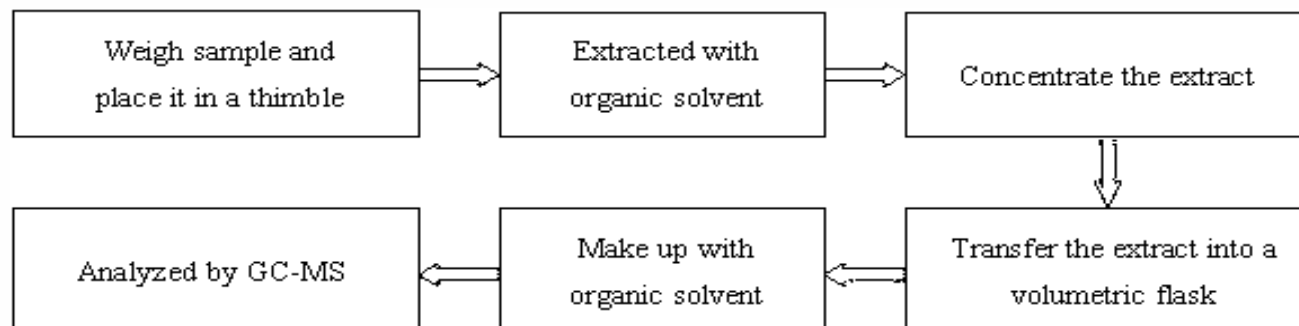
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

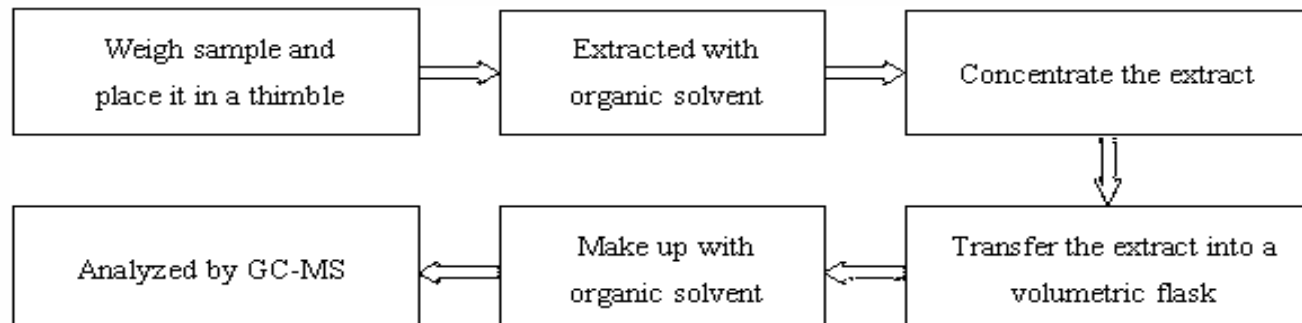


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5. Phthalates (DBP, BBP, DEHP, DIBP)



Test Report

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report

No. CANML1906064029

Date: 23 Apr 2019

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DONG GUAN SHU PENG METALLIC PRODUCTS CO., LTD

BUILDING A NO.6 DAJIN ROAD,XIXI DAJIN INDUSTRIAL PARK,LIAOBU TOWN,DONGGUAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : C1100

SGS Job No. : GZIN1904016655PC - GZ

Internal Reference No. : GZIN1904016380ML

Date of Sample Received : 11 Apr 2019

Testing Period : 11 Apr 2019 - 17 Apr 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Annie Ren

Annie Ren
Approved Signatory



CANML1906064029



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-060640.002	Copper-colored metal sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	3
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.



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<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Beryllium (Be)	mg/kg	5	ND

Hexabromocyclododecane (HBCDD)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND

Notes :

- (1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:
- i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
 - ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material. In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.
 - iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised



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material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	10	ND
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.

Remark: Results & photo(s) of this report refer to test report CANML1906064021.



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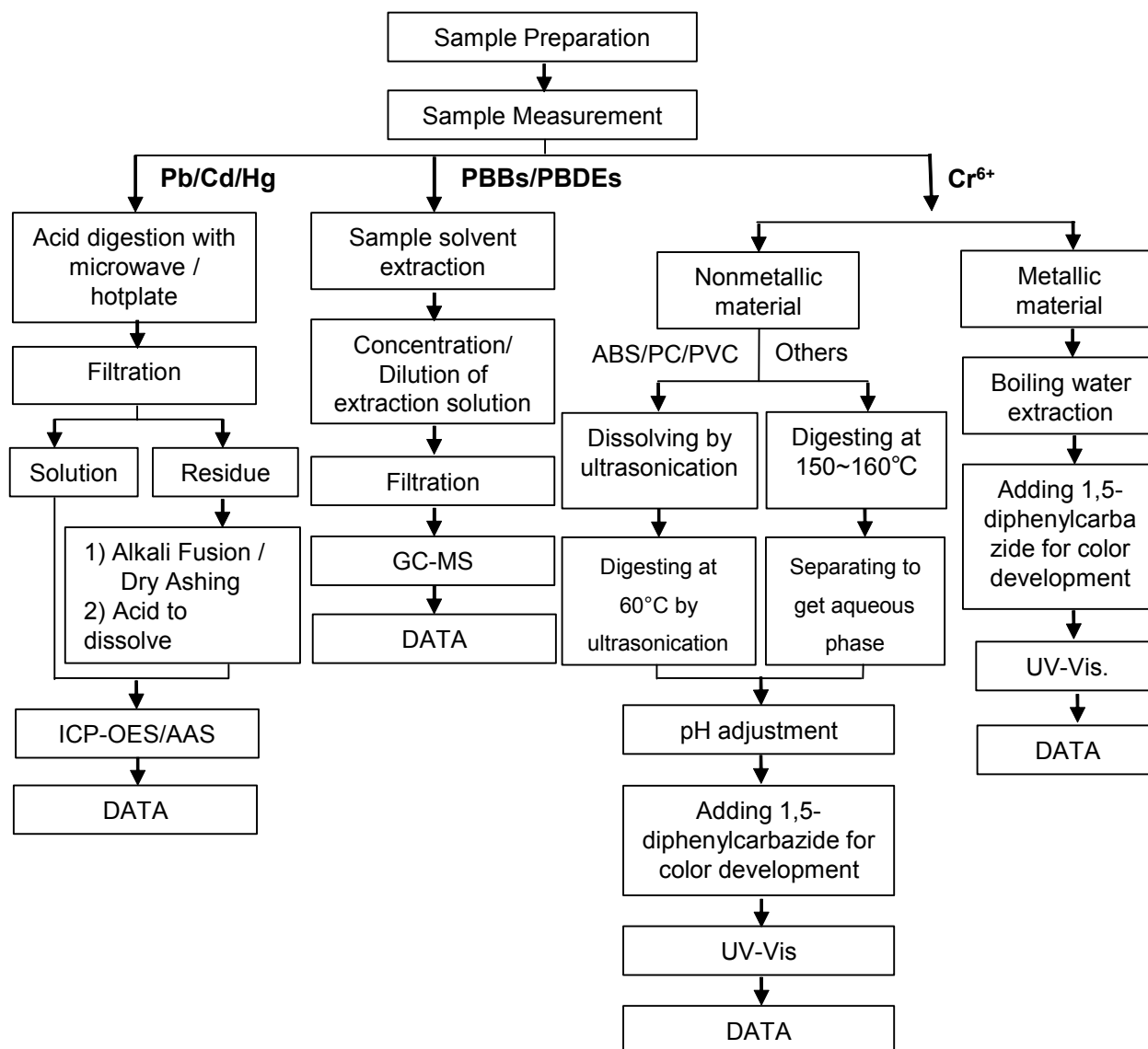
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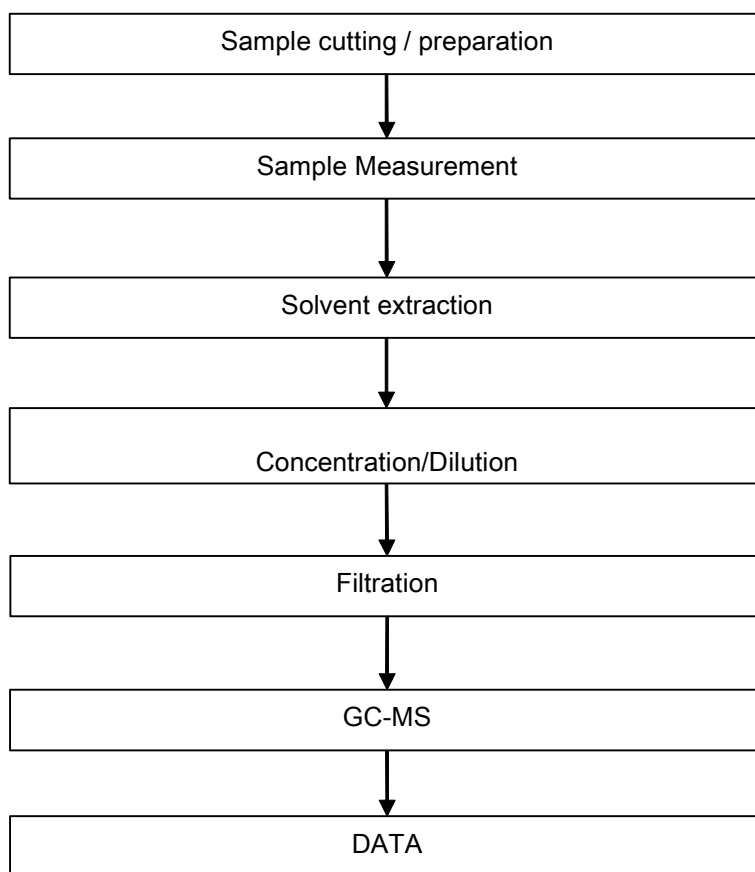
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



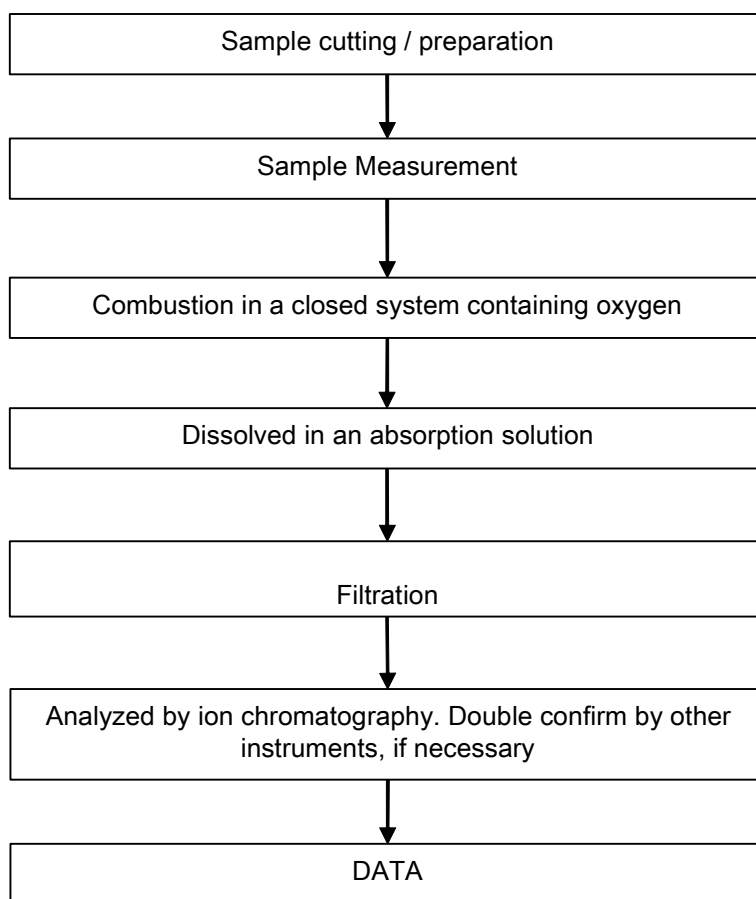
ATTACHMENTS

Phthalates Testing Flow Chart



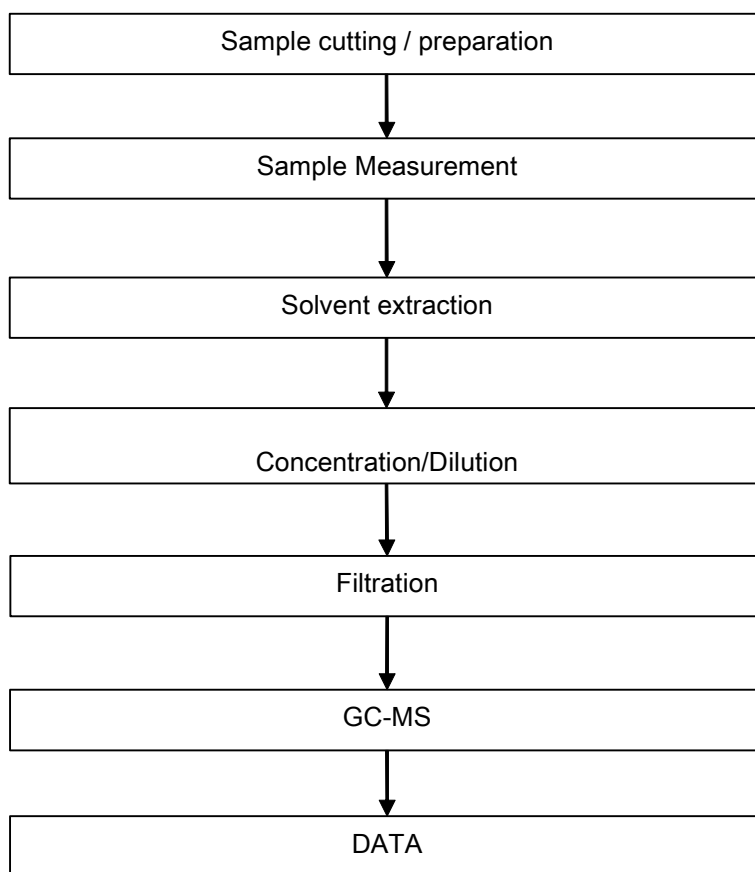
ATTACHMENTS

Halogen Testing Flow Chart



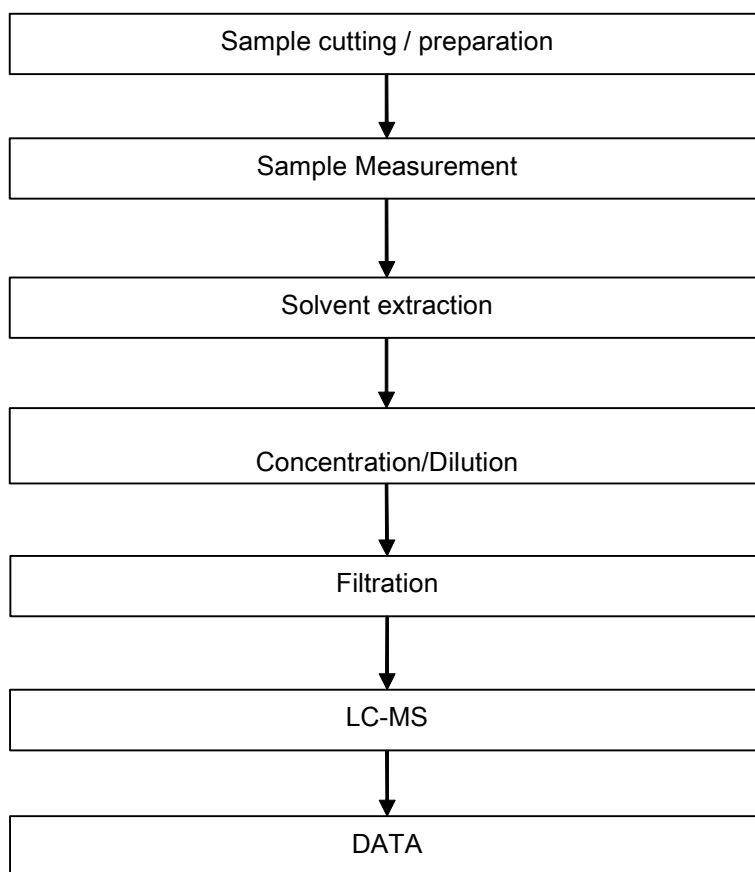
ATTACHMENTS

HBCDD Testing Flow Chart



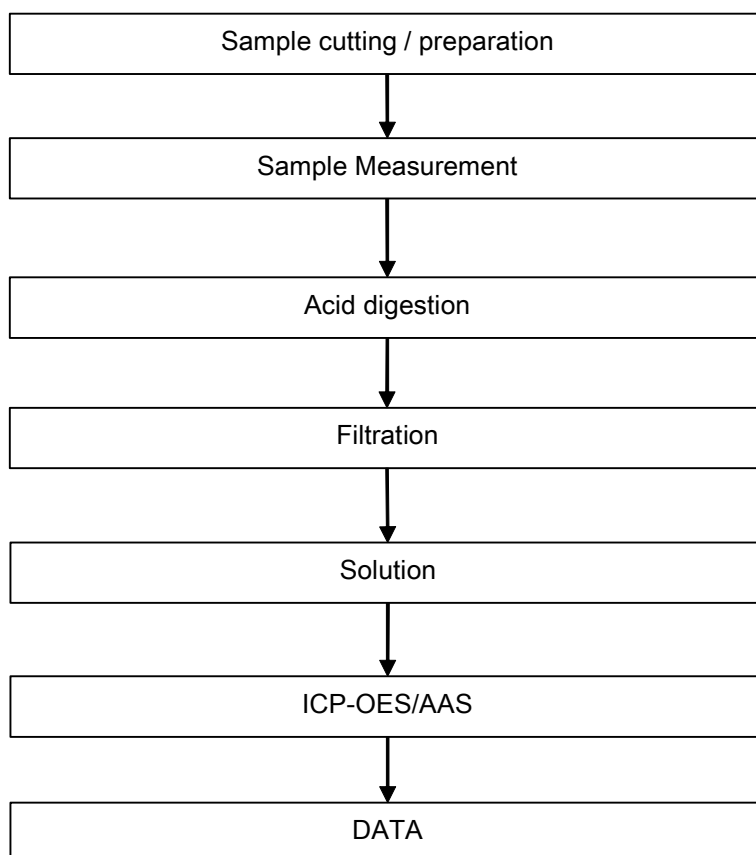
ATTACHMENTS

PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



Test Report

No. CANML1906064029

Date: 23 Apr 2019

Page 12 of 12

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANML1903212301

Date: 08 Mar 2019

Page 1 of 6

DONGGUAN SHENGJI HARDWARE PRODUCTS CO., LTD

DONGGUAN HUMEN TOWN SHAJIAO COMMUNITY PHOENIX MOUNTAIN INDUSTRIAL ZONE NO. 1

The following sample(s) was/were submitted and identified on behalf of the clients as : Tin PLating

SGS Job No. : SZIN1903002431PC - SZ

Date of Sample Received : 05 Mar 2019

Testing Period : 05 Mar 2019 - 08 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Annie Ren

Annie Ren
Approved Signatory



CANML1903212301



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Test Report

No. CANML1903212301

Date: 08 Mar 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-032123.001	Silvery metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANML1903212301

Date: 08 Mar 2019

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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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 Guangzhou Branch Testing Center Chemical Laboratory.

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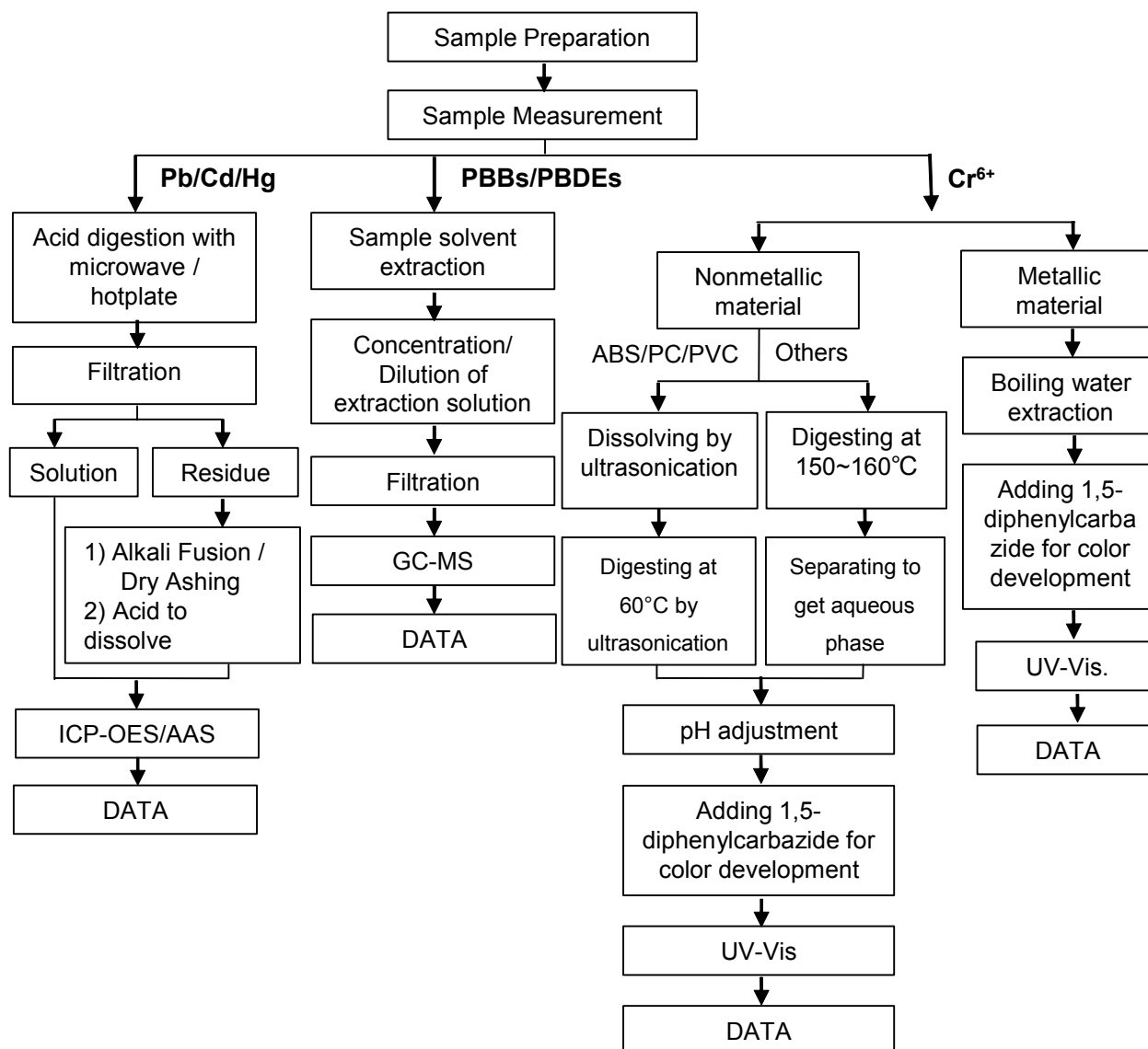
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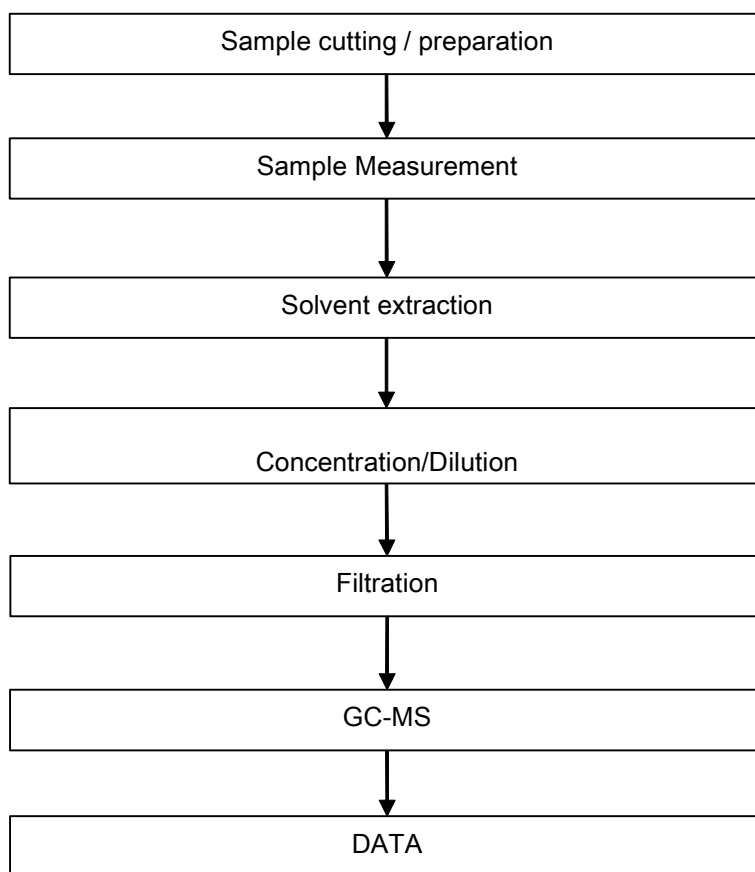
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANML1903212301

Date: 08 Mar 2019

Page 6 of 6

Sample photo:



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an ASUS® assoc. co.

**5F, No. 135, Lane 235, PaoChiao Rd., Hsin-Tien
Dist, New Taipei City, 231, Taiwan, R.O.C.**

Non-use of restricted substances statement

QD4-089 Rev.B2

- ii. 當作為包材類的材料，也須符合歐盟包裝指令(94/62/EC) 與修訂指令(2013/2/EU)

When used as package material, it also needs to comply with EU package directive (94/62/EC) and amendment (2013/2/EU)

Note: Pb+Cd+Hg+Cr⁶⁺ <100 ppm

- iii. 若為電池零件，也須符合電池指令 2006/66/EC 與修訂指令 2013/56/EU

For battery components, it also needs to comply with EU battery directive (2006/66/EC) and amendment (2013/56/EU)

Note: Cd<20ppm; Hg <5ppm

二、產品符合衝突金屬(**Conflict Metal**)規範，並確認銷售產品若有含錫、鉭、鎢、金這四種礦產，來源並非來自剛果民主共和國及其周邊國家剛果、烏干達、蘇丹、坦桑尼亞、盧旺達、安哥拉、贊比亞、布隆迪。

The product complies with the conflict metal norms, and confirm that your company selling products contain tin、tantalum、tungsten、gold four mineral, those sources are not come from Democratic Republic of the Congo and its neighboring countries of Congo、Uganda、San、Tanzania、Rwanda、Angola, Zambia, Burundi.

三、產品符合歐盟最新REACH (EC 1907/2006) 規範，

高關注物質(SVHC)，不超過 0.1%上限，以重量計算。

備註：請參照歐盟化學總署(ECHA)網站，最新的高關注物質清單。

This product complies with latest EU REACH (EC 1907/2006) norms.

The SVHC, are not over 0.1% threshold by weight.

Note: Please check ECHA website for latest SVHC list: <https://echa.europa.eu/candidate-list-table>

立書人提供給研揚的所有文件（含測試報告、聲明書、調查表等文件），均正確屬實並且完整。

All documents (including test reports, declarations, survey forms, etc.) provided by Declarant to AAEON shall be correct, true and complete.

如有違背此保證聲明書的規定，飛偉科技有限公司 (填寫公司名稱) 將承擔相關法律責任並賠償研揚所受損害。

If violates any provision of this Declaration, _____ (Fill in Company name) shall take legal responsibilities and compensate AAEON for damages and losses caused by this violation.

承認書

APPROVAL SHEET

客戶名稱
Customer: 研揚科技股份有限公司

飛偉料號
FW P/N: FWAA-1070

客戶料號
Cus. P/N: 1701100180

規格敘述
DESCRIPTION: COM CABLE 150mm

審 核 Approved By	業 務 Sales Dept	品 保 QA Dept	工 程 Engineering Dept
王俊偉	張全生	劉江華	楊仁貴

客戶簽章
Customer Signature:

審 核 Approved By	核 對 Checked By	檢 驗 Tested By

飛偉科技有限公司

FLYINGWAY TECH CO., LTD

Address: 新北市永和區中和路345號7F-4

TEL: 02-22311313

FAX: 02-22311020

CONTACT: Chino Wang

E-Mail: chino@flyingwaytech.com.tw

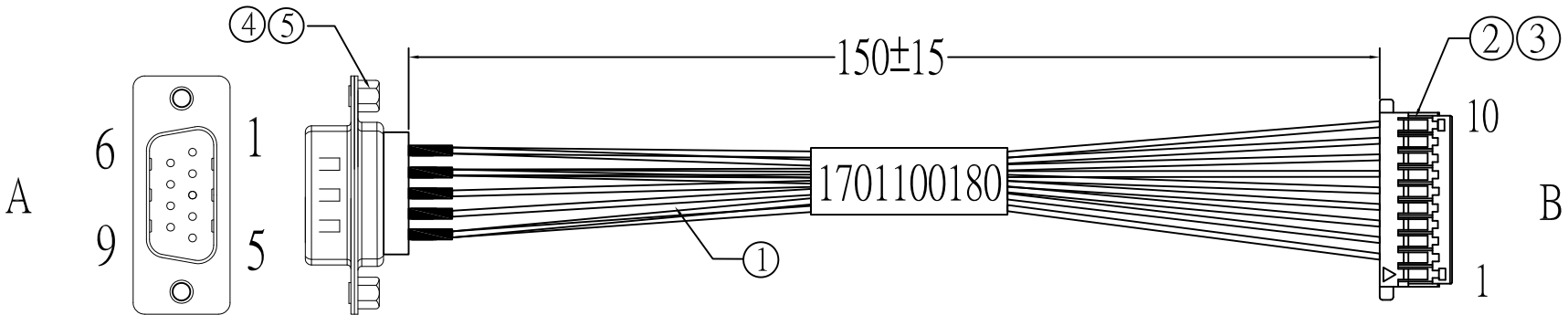
Cellphone: 0983588528

DATE: 2020/01/09

RoHS Compliant

Pin對照表

A	1	2	3	4	5	6	7	8	9
B	10	9	8	7	6	5	4	3	2
顏色	黑	棕	紅	橙	黃	綠	藍	紫	白



5	套管:Φ1.0*L=10mm 黑色 厚壁	9	pcs	WORE或同級品
4	DB頭:9P 公頭 後鉚螺母 二排 焊接式 黑膠芯	1	pcs	超端或同級品
3	TER:11002TOP-2E	9	pcs	JCTC或同級品
2	HSG:11002H00-10P	1	pcs	JCTC或同級品
1	線材:UL1571#28 OD=0.8 黑;棕;紅;橙;黃;綠;藍;紫;白各1 L=155*2.0T*1.6	共9	pcs	瑞興或同級品
NO	品 名 規 格	數量	單位	生產廠商

客戶工程師	Jimmy	
版次	變更內容	變更日期
A	新發行	2017/09/06
B	修改客戶料號	2017/09/12
C	修改線長180-->150mm	2017/11/03
D	修改DB頭:9P為焊接式	2020/01/06
飛偉 科技 有 限 公 司 FLYINGWAY TECH CO.,LTD		
TEL:02-2231-1313 FAX:02-2231-1020 E-MAIL:chino@flyingwaytech.com.tw		
TITLE: COM CABLE 150mm		
FW P/N: FWAA-1070		
CUS. P/N: 1701100180		
REV: D	DWG BY: Silvia	CHECKED BY: Chino
DATE: 2020/01/06		



UL 1571 HOOK-UP WIRE

80°C 30V 環保 SR-PVC 電子線

UL Subject 758

UL FILE NO:E108485

說明:

應用:

- 導體使用單條或絞線最小至 50AWG 裸銅或鍍錫銅
- 環保 SR-PVC 絕緣
- 額定溫度:80°C, 額定電壓:30Volts
- 可通過 UL VW-1 垂直型耐燃測試。

- 電子設備二次迴路中內部連接用線

Applications:

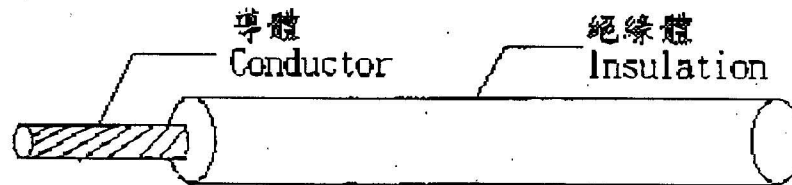
- Internal wiring in electronic equipments

Product Description:

- Tinned, annealed, attended or solid copper conductor, MIN,50AWG
- Lead FreeSR- PVC insulation.
- Rated temperature: 80°C, Rated voltage:30volts.
- Uniform thickness of wire to ensure easy stripping and cutting
- Passes UL VW-1 vertical flame test.

構造及電氣性能

structure & electric properties(UL STANDARD 758:外徑 0.70mm 以下不印字)



UL 1571	額 定 Range		導 體 Conductor		絕 緣 體 Insulation		公差值 Tolerance Mm	最大導體	最小絕緣	絕緣耐電
	溫 度 Temp ℃	電 壓 Voltage V	線號 AWG	構 成 NO./mm	厚 度 Thickness mm	外 徑 O.D mm		阻 抗 Maximum Conductor Resistance Ω/km	阻 抗 Minimum Insulation Resistance MΩ/km	壓(VAC/min) Insulation Potential Strength
Stranded 多芯線	80℃	30V	34	7/0.060	0.20	0.60	±0.05	728	15	500
			32	7/0.080	0.20	0.65		703		
			30	7/0.100	0.20	0.70		397		
			28	7/0.127	0.20	0.80		248		
			26	7/0.160	0.20	0.90		152		
			24	11/0.160	0.20	1.05		88.6		
			22	17/0.160	0.20	1.20		62.5		
			20	21/0.180	0.20	1.50		39.5		
34			7/0.060	0.20	0.60	728				
32			7/0.080	0.20	0.65	703				
30			7/0.100	0.20	0.70	397				
28			7/0.127	0.20	0.80	248				
26			7/0.160	0.20	0.90	152				
24			7/0.200	0.20	1.05	88.6				
(ATC) 先絞後鍍			30	1/0.254	0.20	0.65		377		
			28	1/0.320	0.20	0.75		245		
	26	1/0.404	0.20	0.85	155					



瑞興電線電纜製品廠
REI HSING ELECTRIC WIRE AND CABLE CO.,LTD.
承 認 書
SPECIFICATION

型號 STYLE			UL 1571							
額定溫度/電壓 RATING TEMP./VOLT.			80°C/30V							
導體 CONDUCTOR	線號 SIZE	AWG	34	32	30	28	26	24	22	20
	芯數 NUMBER	NO.	7	7	7	7	7	11	17	21
	銅線直徑 DIAMETER	MM	0.060	0.080	0.100	0.127	0.160	0.160	0.160	0180
	最小銅線直徑 MIN.DIAMETER	MM	0.054	0.074	0.090	0.117	0.150	0.150	0.150	0.170
	導體截面積 CROSS SEC AREA OF COND	AVG	39.7	64	100	159	253	404	640	1020
		MIN.	35.1	62.7	98	156	248	392	621	989
	絞距 LAY OF BUNCH	INCH	0.40	0.40	0.40	0.50	0.60	0.70	0.80	1.25
絕緣體 INSULATION	最大電阻 MAX.RESISTANCE	Ω/KM	728	703	397	248	152	88.6	62.5	39.5
	完成外徑 O.D. (±0.10)	MM	0.60	0.65	0.70	0.80	0.90	1.05	1.20	1.50
	絕緣體厚度 INSULATION THICKNESS	AVG	0.20							
		MIN	0.15							
	外被厚度 JACKET THICKNESS	AVG	/							
		MIN	/							
	最小絕緣電阻 INSULATION ESISTANCE	MΩ/KM	15							
火花試驗 SPARK TEST		KV	2KV/0.15sec							
最小伸長率 ELONGATION		%	100%							
最小抗張強度 TENSIL STRENGTH		PSI	1500							
最小老化後伸長率 LO.(AFTER AGING)		%	OF UNAGED 65							
最小老化後抗張強度 TEN.ST.(AFTER AGING)		%	OF UNAGED 70							
老化試驗溫度/條件 AGING TEMP./TIME			113°C/168HRS							
耐燃燒試驗 FIAME TEST			VW-1							
高溫纏繞試驗 HEAT SHOCK TEST			80°C/1HR 1.60MM MANDREL							
低溫纏繞試驗 COLD BEND TEST			-10°C/1HR 3.2MM MANDREL							
耐電壓試驗 I NSULATION POTENTIALST			500VAC/min							

ISSUED	1997-01-17	APPROVED	CHECKED	PREPARED
REVISION		洪夾詩印	李榮天印	劉安輝



Underwriters Laboratories Inc.®

File E108485

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Camas, WA 98607-0542
United States Country Code
(360) 017-5500
FAX No. (360) 017-6000
<http://www.ul.com>

FOLLOW-UP SERVICE PROCEDURE (TYPE L)

COMPONENT - APPLIANCE WIRING MATERIAL (AVLV2, AVLV8)

Manufacturer:
(342072-001)

REI HSING WIRE & CABLE CO LTD
TSENG TEN INDUSTRIAL PARK
CHEN KOU
CHANG AN TOWN
DONGGUAN GUANGDONG CHINA

Applicant:
(559504-001)

REI HSING WIRE CO LTD
56-5 JIUN-ING ST
SHUH-LIN CITY
TAIPEI HSIEN TAIWAN

Recognized
Company:
(559504-001):

SAME AS APPLICANT

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The Prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and the representative of Underwriters Laboratories Inc. and is not used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

The PROCEDURE, and any subsequent revisions, is the property of UNDERWRITERS LABORATORIES INC., and is not transferable.

UNDERWRITERS LABORATORIES INC.

J. J. Ritchie

J. J. Ritchie
Vice President

Laboratory Management and Operations



A not-for-profit organization
dedicated to public safety and
committed to quality service

TABLE OF AUTHORIZED STYLES SINGLE-CONDUCTOR THERMOPLASTIC INSULATED WIRE

Page	Issued	Page	Issued	Page	Issued	Page	Issued
F 1007	1997-06-04	F 1333	2003-12-08	F 1723	2003-12-08		
F 1010	2003-02-27	F 1371	2003-12-08	1726	2003-12-08		
F 1011	1997-06-04	1429	2004-11-24	F 1789	2004-11-24		
F 1013	1997-06-04	F 1430	1999-04-29	F 10064	2003-12-08		
F 1015	1997-06-04	1431	2004-11-24	10070	2006-07-21		
F 1028	1997-06-04	F 1497	1997-06-04	10109	2004-05-04		
1032	2001-06-19	F 1500	1997-06-04	10198	2006-07-21		
1061	1997-01-17	1516	2004-05-04	10362	2003-12-08		
1080	2003-01-03	1533	2000-11-09	10368	2004-11-24		
F 1095	1997-06-04	F 1538	2003-12-08	10369	2004-11-24		
1164	2004-05-04	1569	2003-06-17				
1180	2004-05-04	F 1571	1997-01-17				
1185	2000-11-09	F 1577	2003-12-08				
1198	2004-05-04	F 1581	2001-05-09				
1199	2004-05-04	1584	2004-05-04				
1212	2004-05-04	F 1589	2007-06-19				
1213	2004-05-04	1591	2003-12-08				
1226	2003-12-08	1592	2003-12-08				
1227	2003-12-08	1617	1997-01-17				
F 1283	2003-02-27	1618	2003-02-27				
1285	2003-01-08	1672	2003-02-27				
F 1316	2003-02-27	1674	2003-02-27				
F 1330	2003-12-08	F 1685	2004-11-24				
F 1331	2003-12-08	1709	2003-12-08				
F 1332	2003-12-08	1710	2003-12-08				



Test Report



Page 1 of 7

Report No. A2190175998101034

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BROWN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101034

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101034

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101034

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	96 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Brown wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

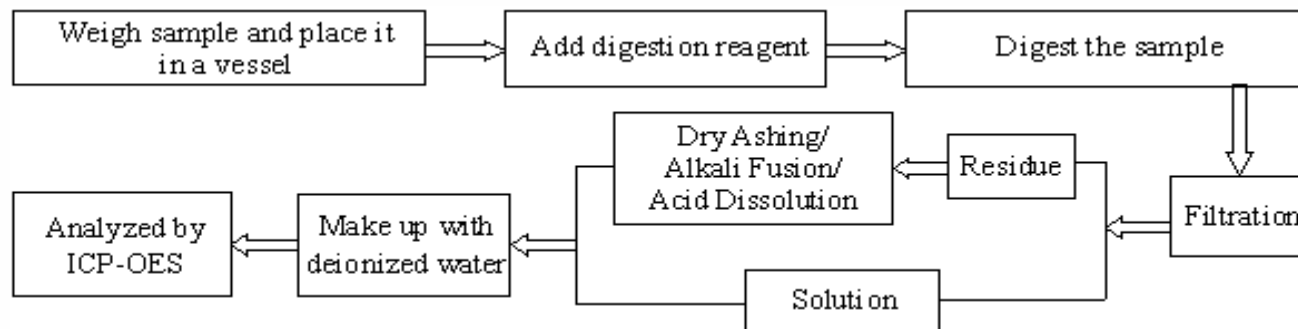
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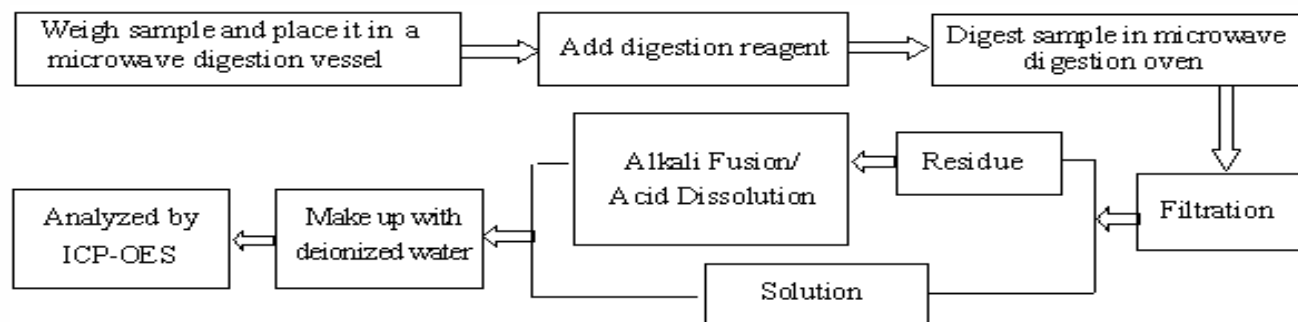
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Test Process

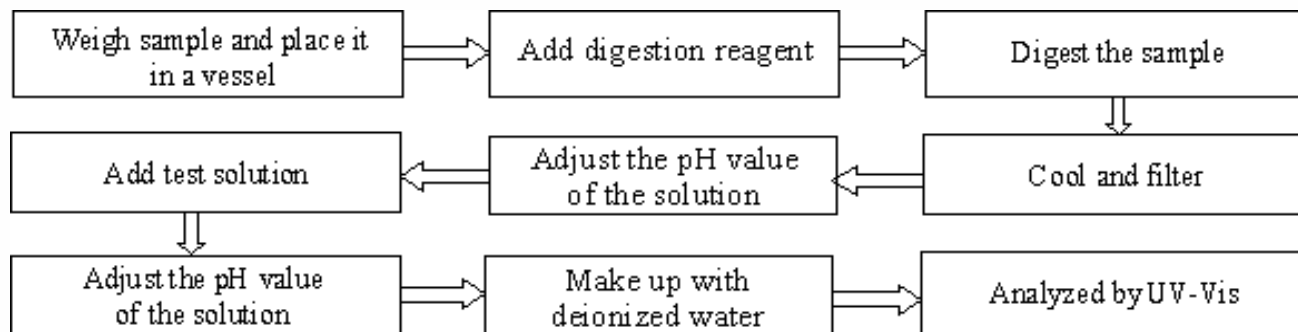
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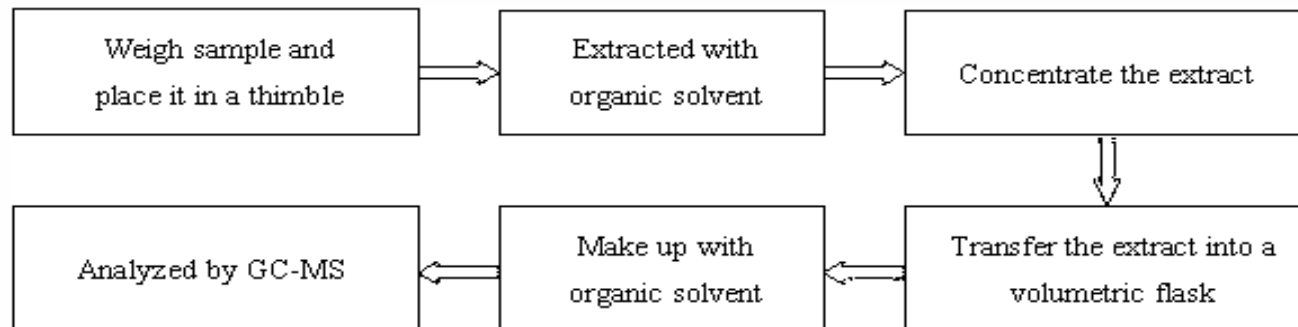
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

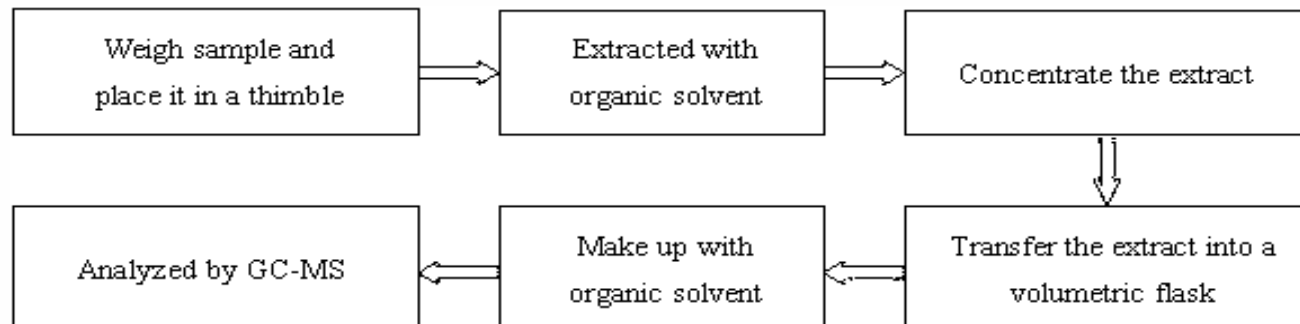


Test Report

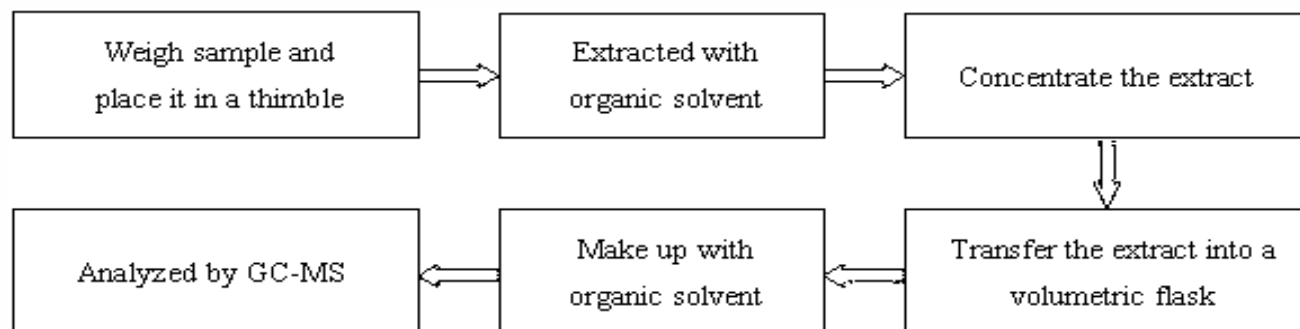
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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101034

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report



Page 1 of 7

Report No. A2190175998101031

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name PURPLE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101031

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101031

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101031

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	84 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Purple wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

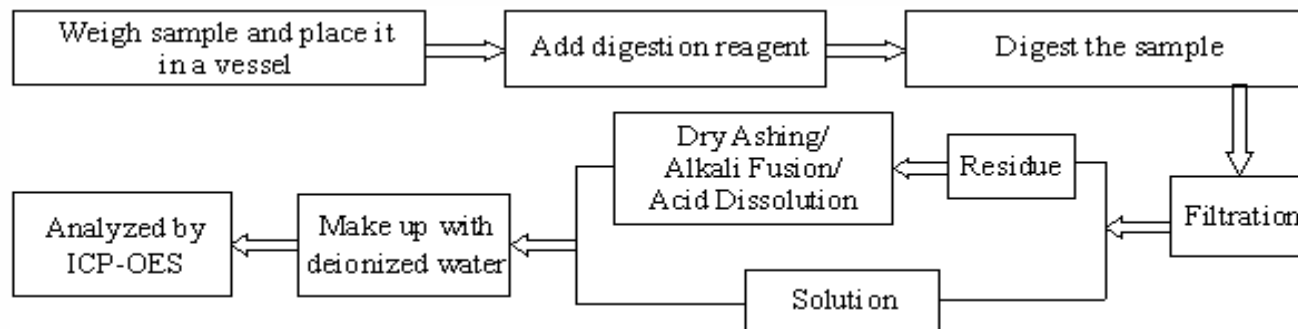
Test Report

Report No. A2190175998101031

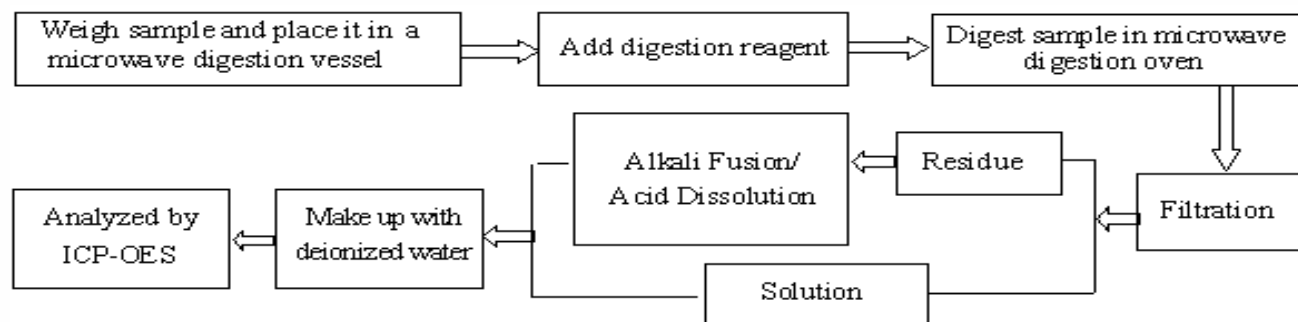
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Test Process

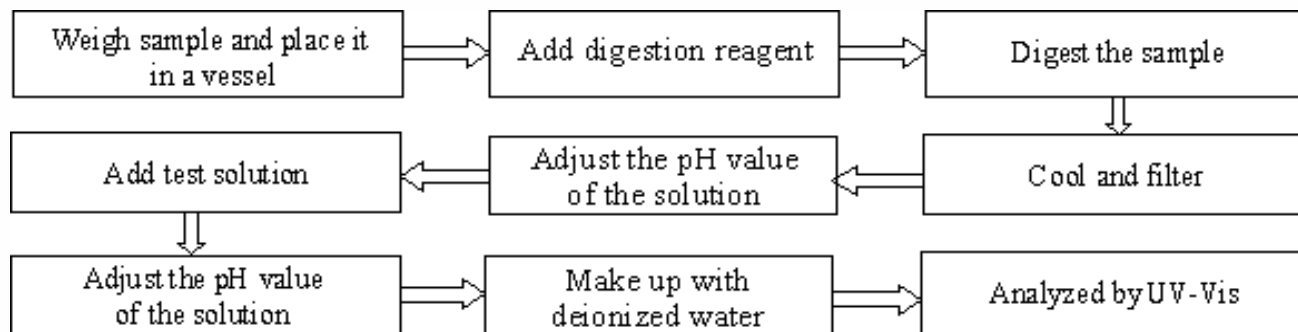
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



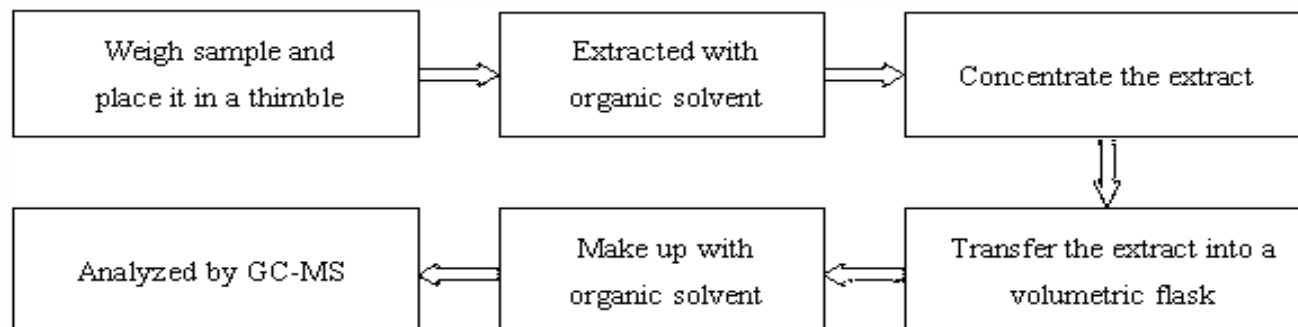
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

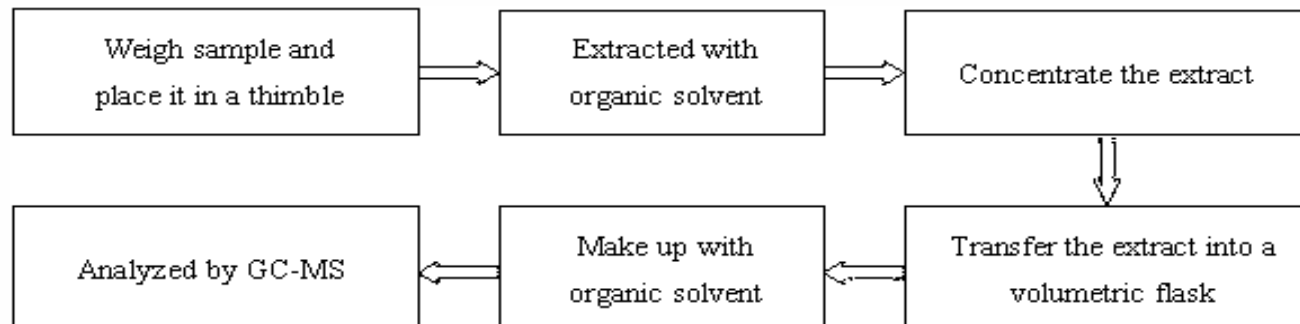


Test Report

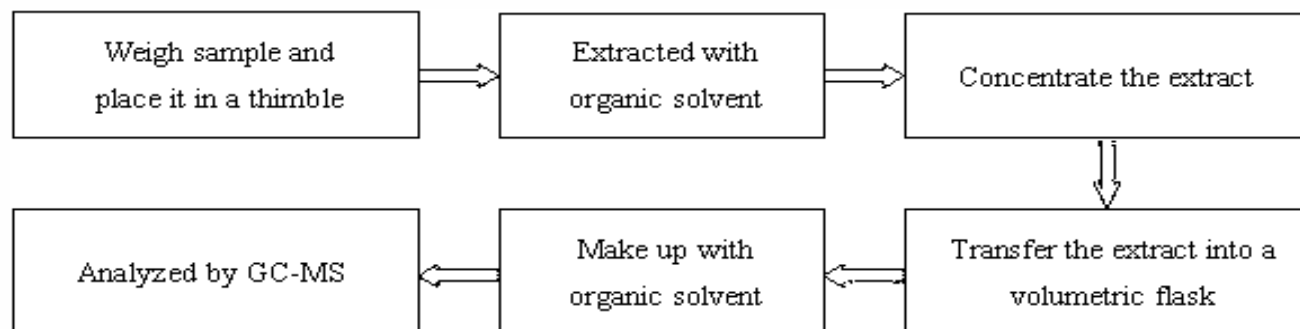
Report No. A2190175998101031

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

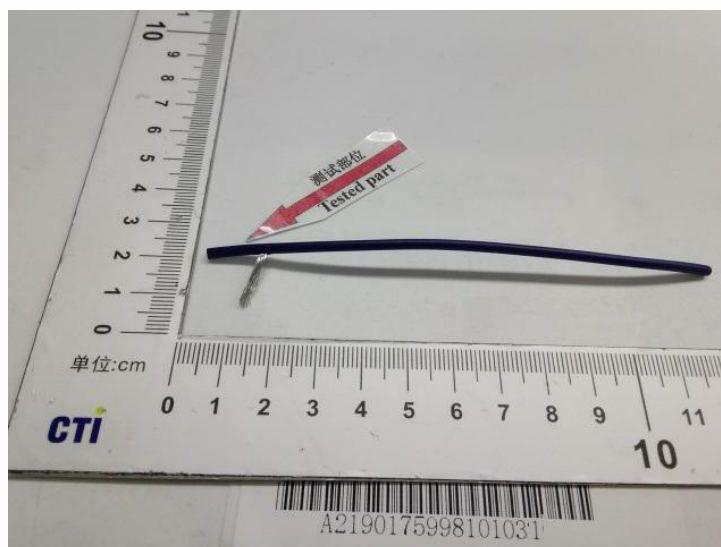


Test Report

Report No. A2190175998101031

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

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2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report



Page 1 of 7

Report No. A2190175998101028

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name GREEN PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101028

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101028

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101028

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	350 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Green wire jacket**Remark:** The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

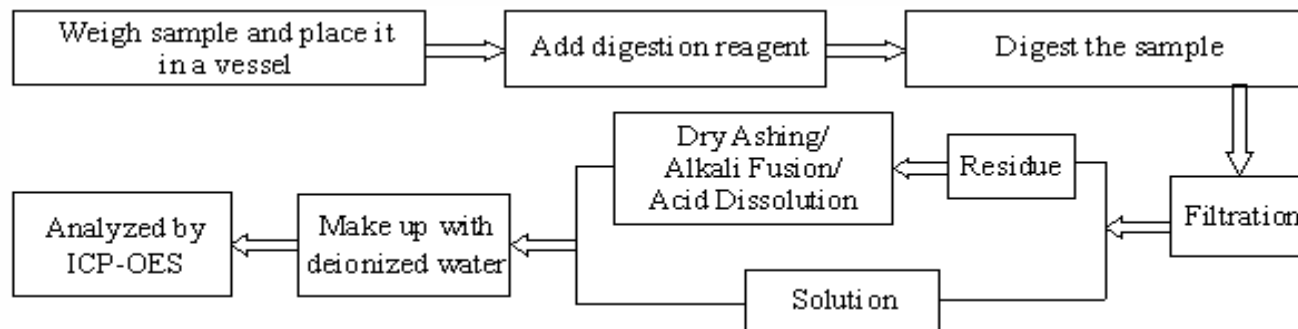
Test Report

Report No. A2190175998101028

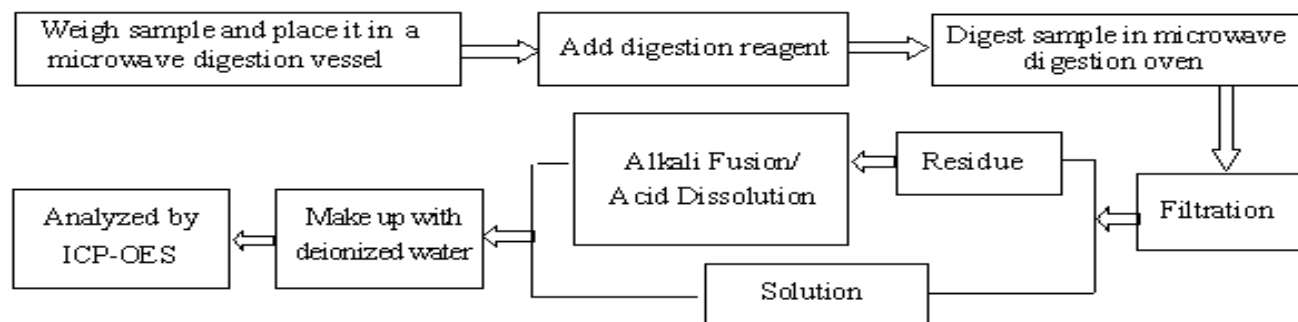
Page 5 of 7

Test Process

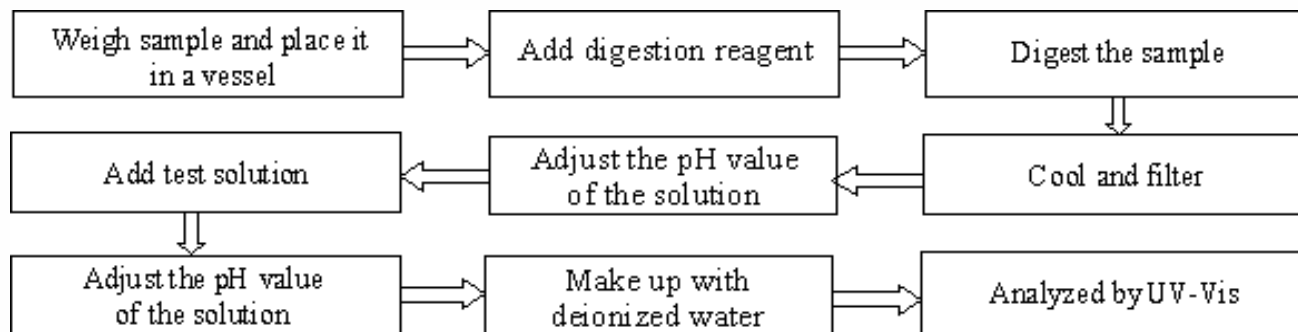
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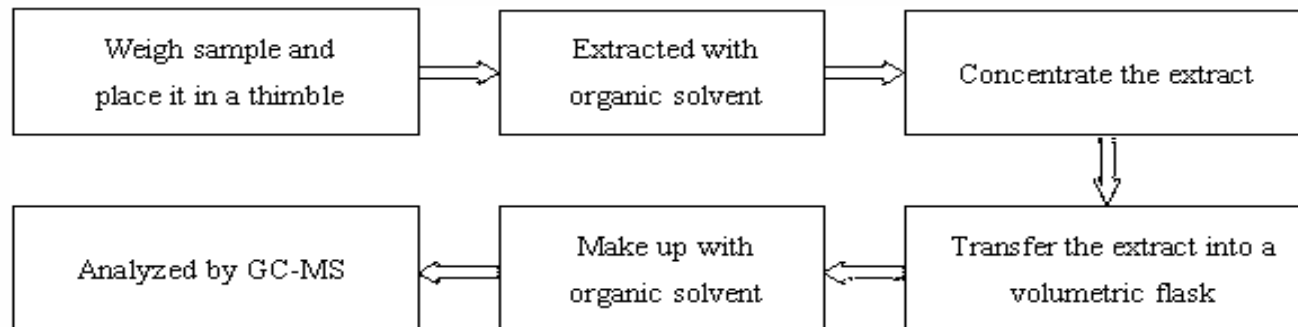
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

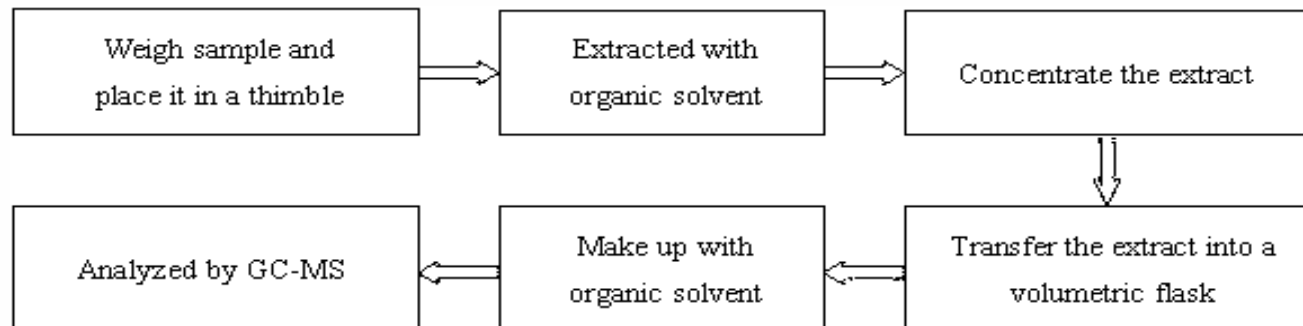


Test Report

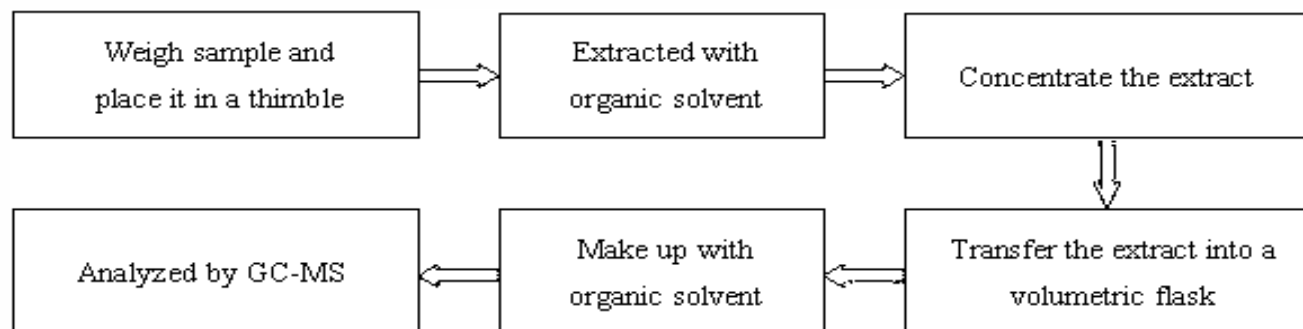
Report No. A2190175998101028

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

Report No. A2190175998101028

Page 7 of 7

Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



Page 1 of 7

Report No. A2190175998101025

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLUE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101025

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101025

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101025

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	102 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Blue wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

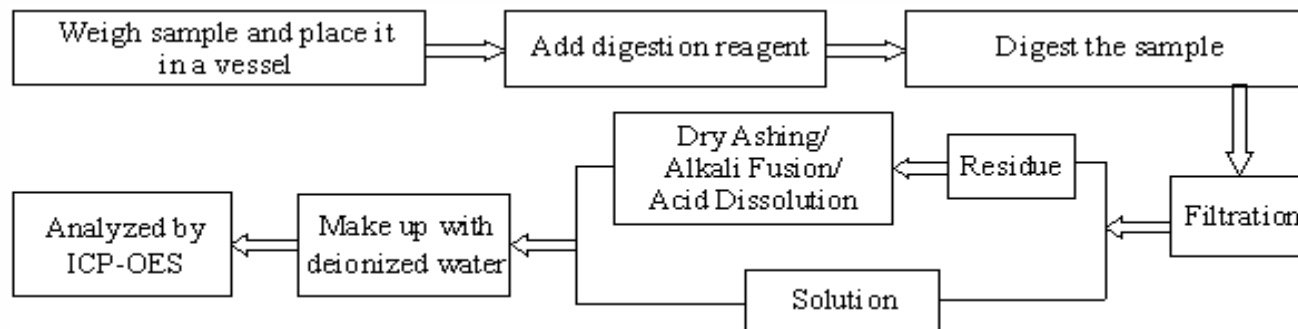
Test Report

Report No. A2190175998101025

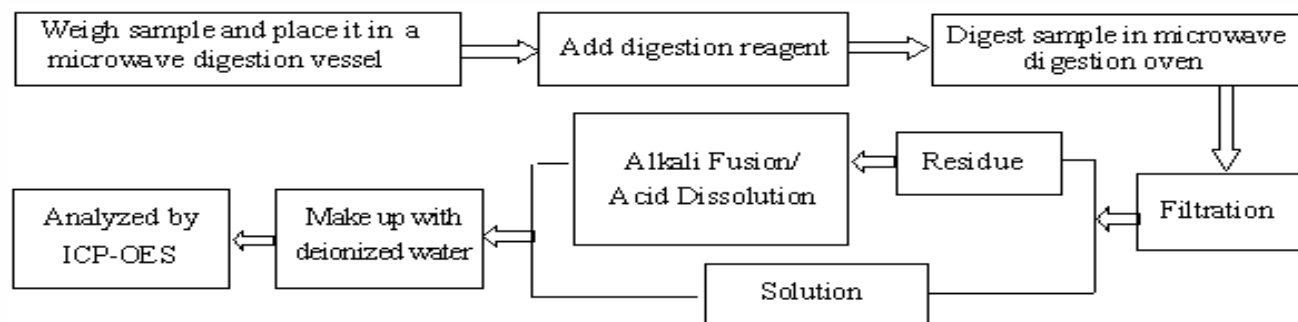
Page 5 of 7

Test Process

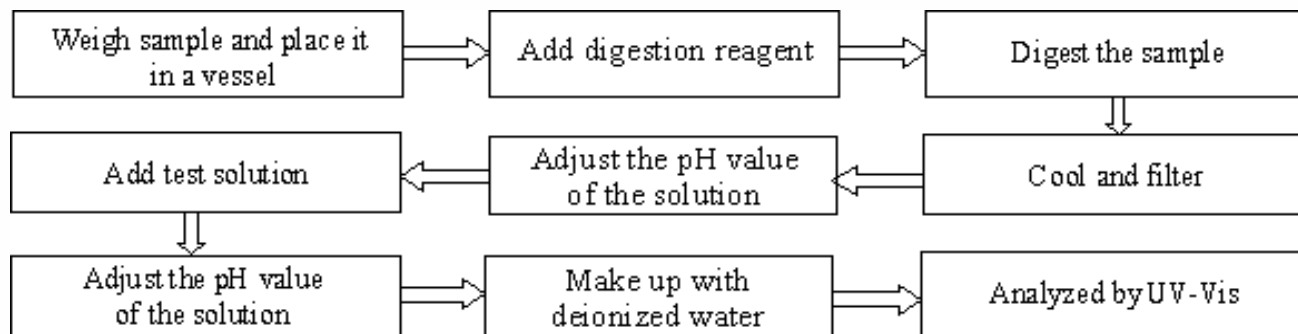
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



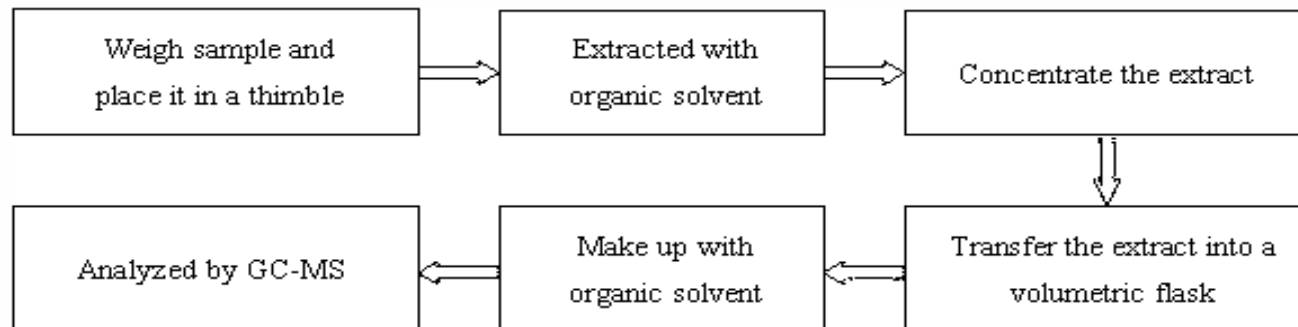
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

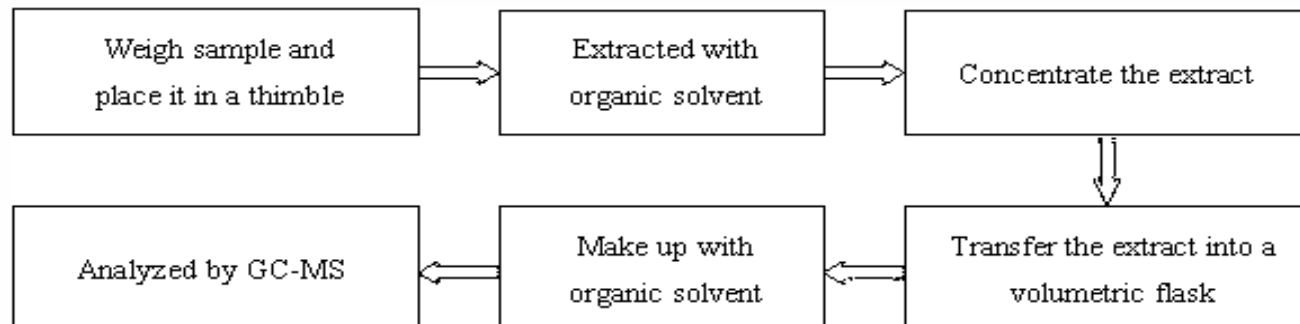


Test Report

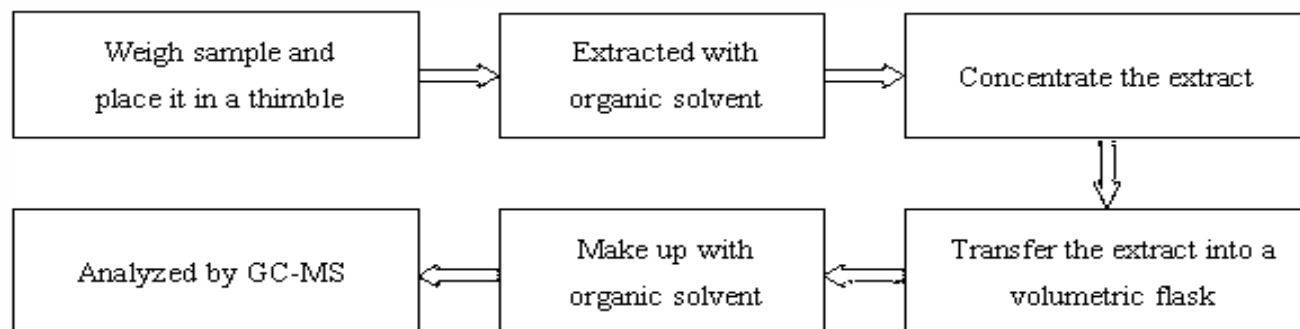
Report No. A2190175998101025

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

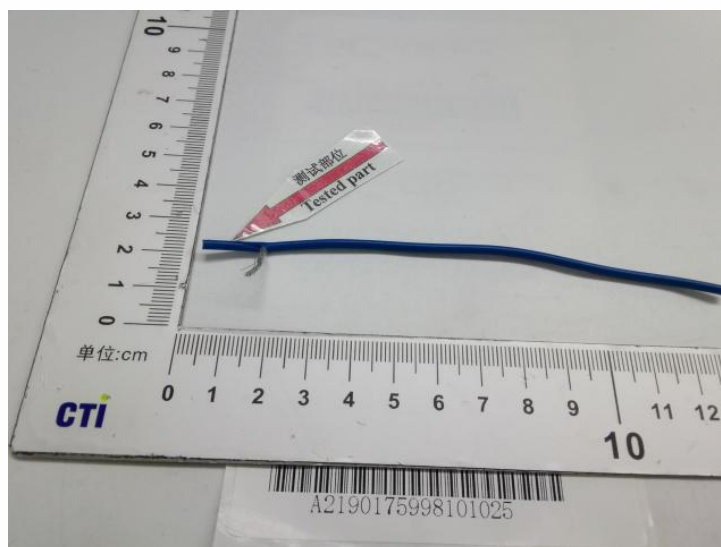


Test Report

Report No. A2190175998101025

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
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3. The result(s) shown in this report refer(s) only to the sample(s) tested;
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Test Report



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Report No. A2190175998101019

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name YELLOW PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101019

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101019

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101019

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Yellow wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

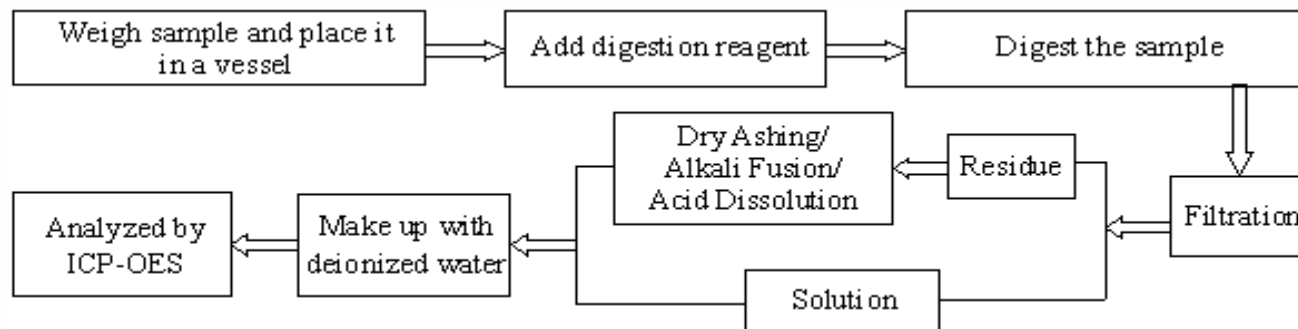
Test Report

Report No. A2190175998101019

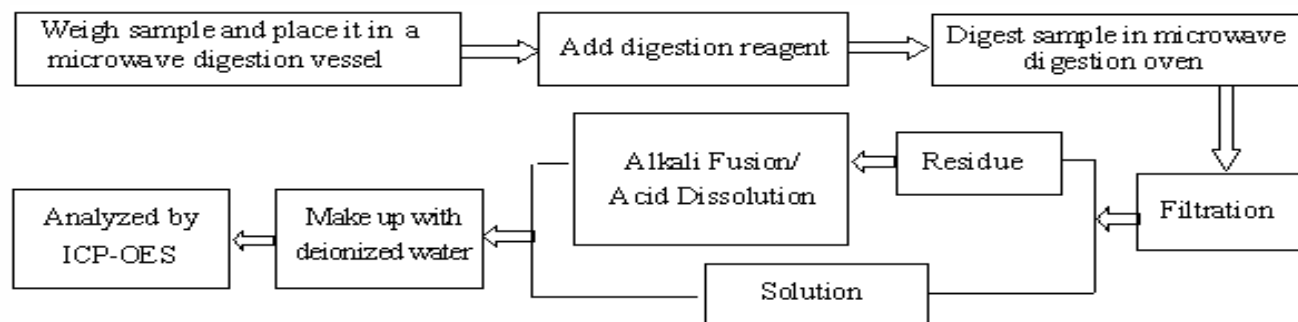
Page 5 of 7

Test Process

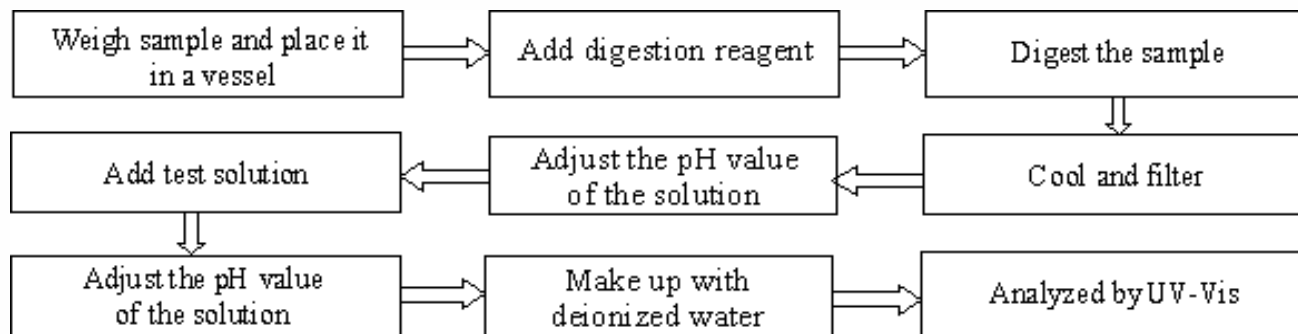
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



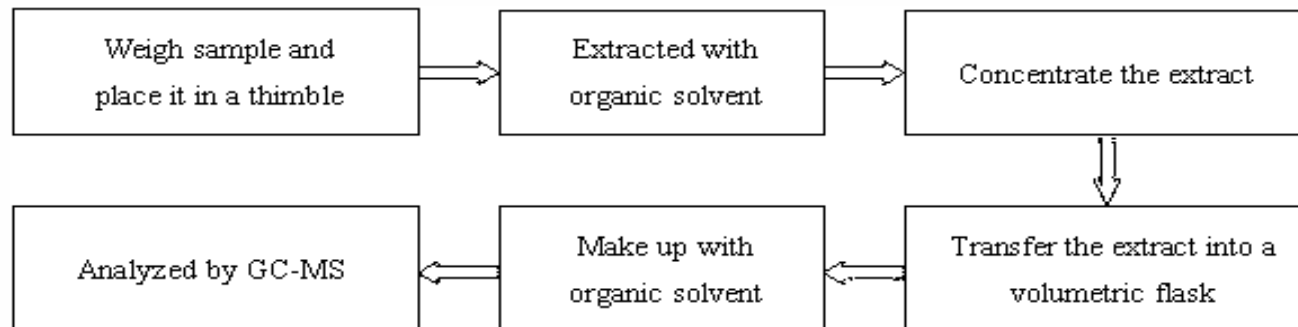
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

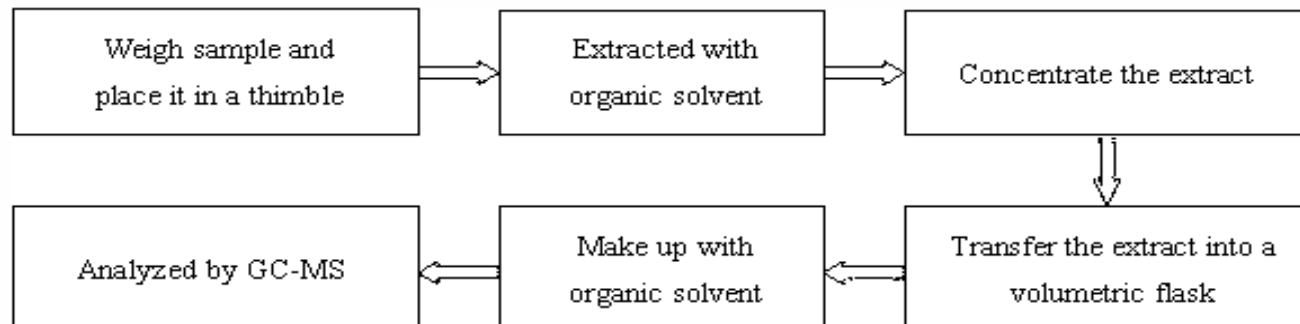


Test Report

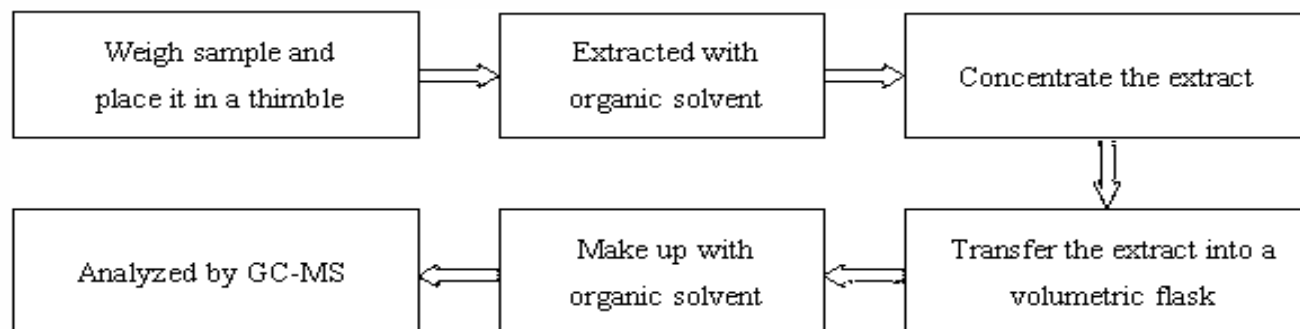
Report No. A2190175998101019

Page 6 of 7

5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

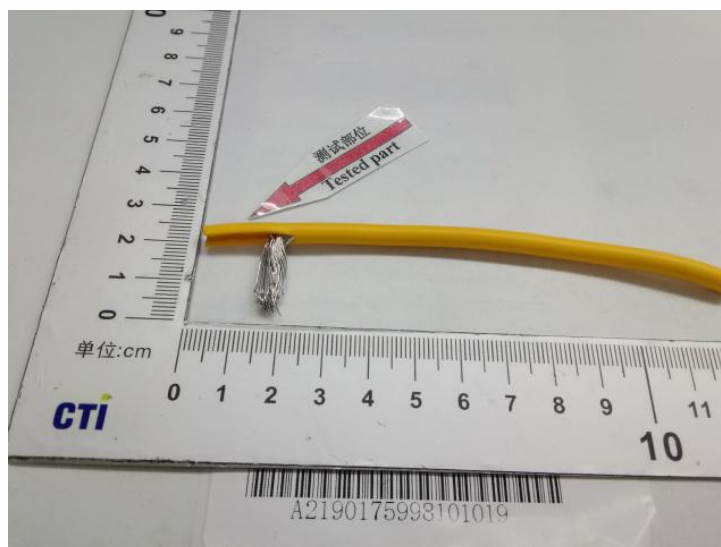


Test Report

Report No. A2190175998101019

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report



Page 1 of 7

Report No. A2190175998101013

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name RED PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101013

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101013

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101013

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	101 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Red wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

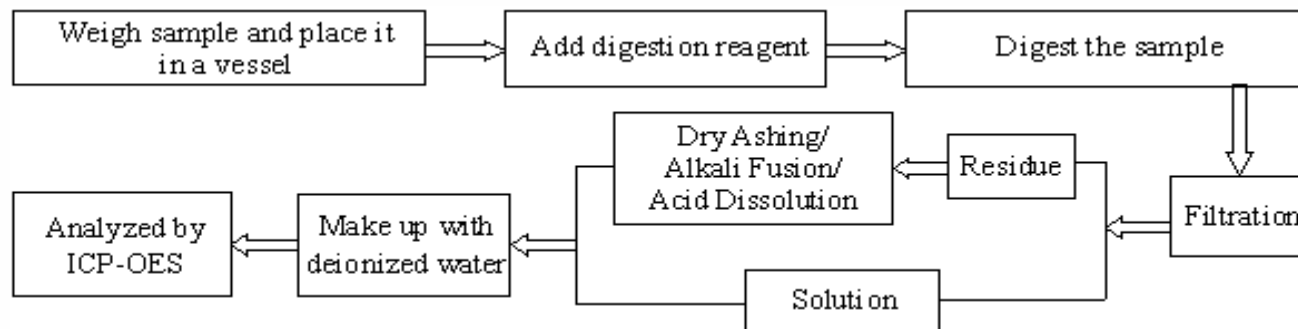
Test Report

Report No. A2190175998101013

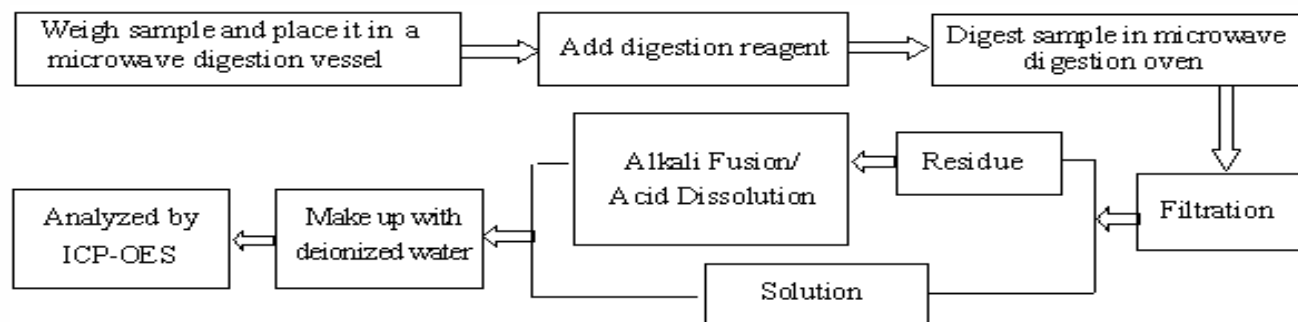
Page 5 of 7

Test Process

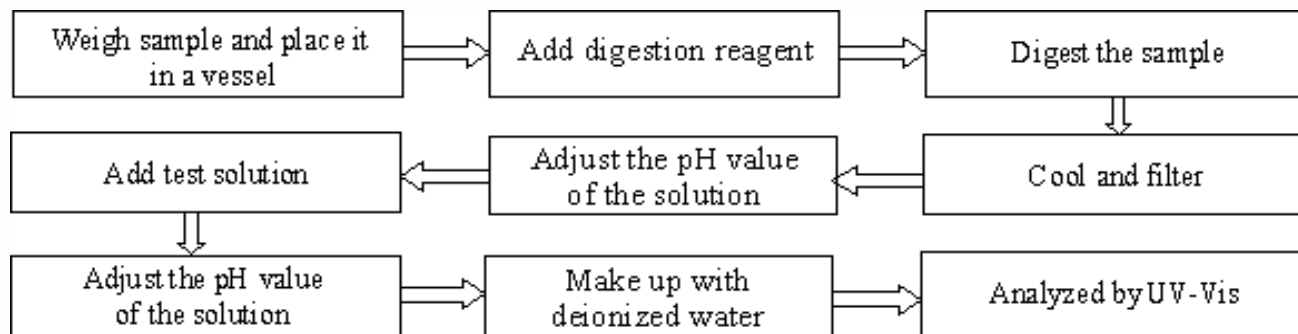
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



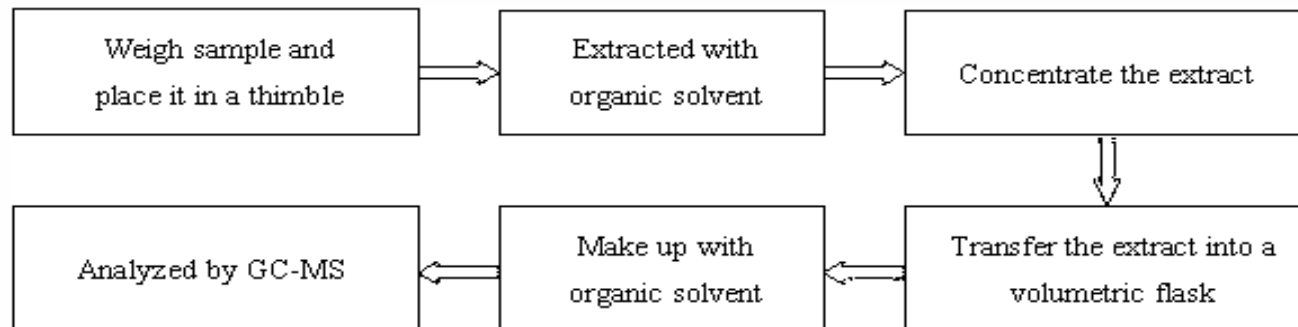
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

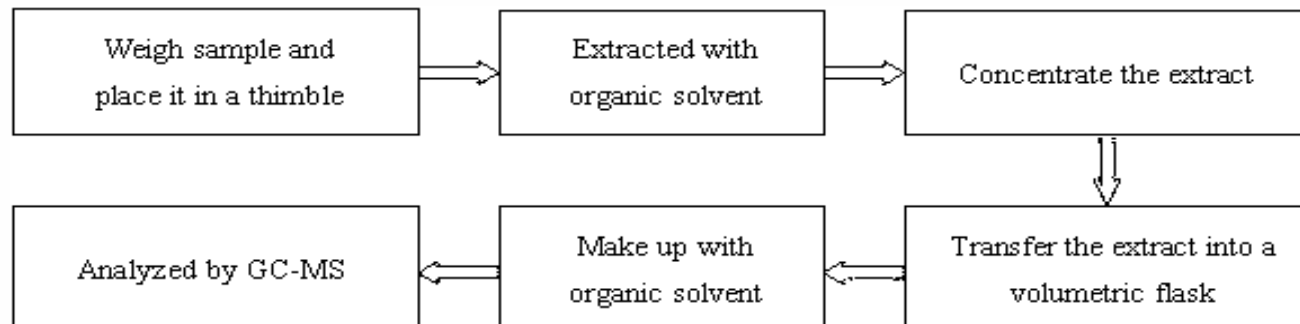


Test Report

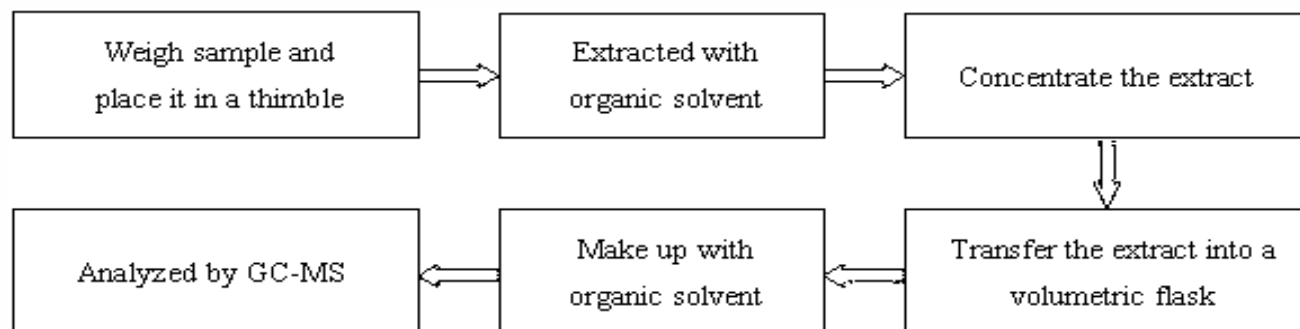
Report No. A2190175998101013

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

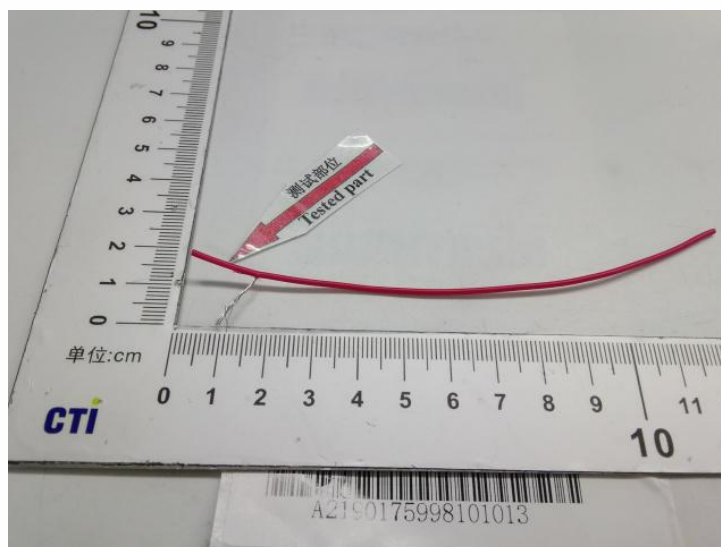


Test Report

Report No. A2190175998101013

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report



Page 1 of 7

Report No. A2190175998101010

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name BLACK PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101010

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101010

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101010

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	138 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Black wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

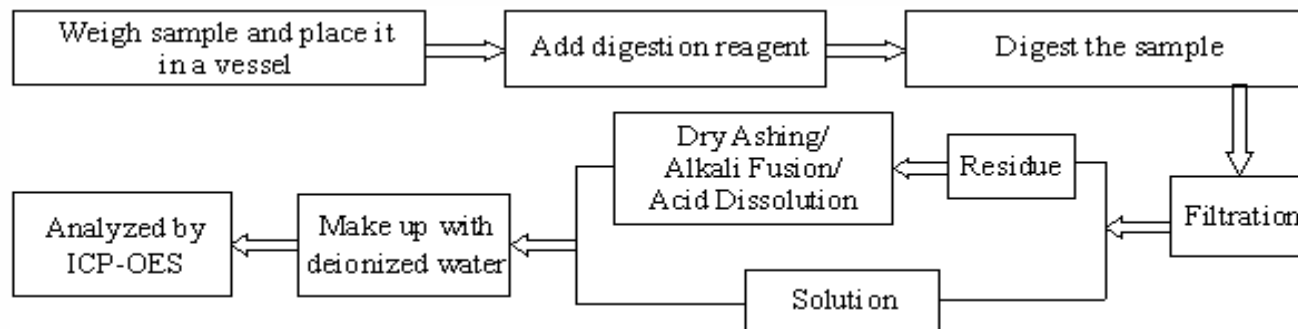
Test Report

Report No. A2190175998101010

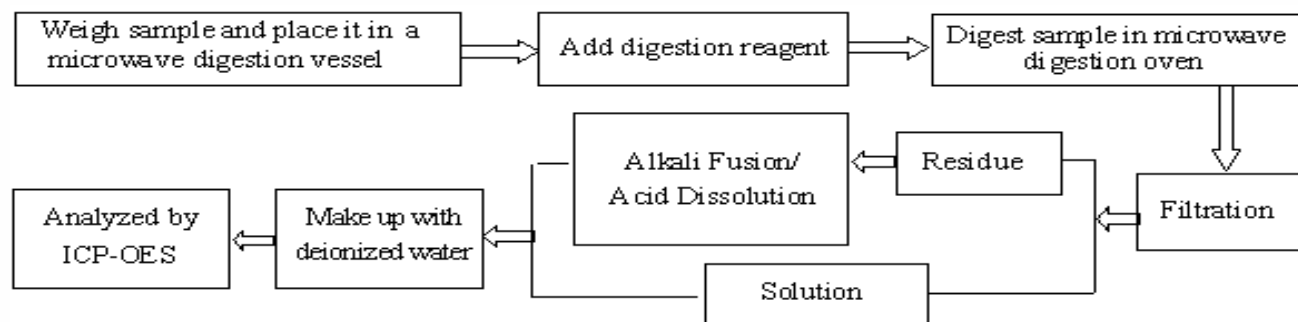
Page 5 of 7

Test Process

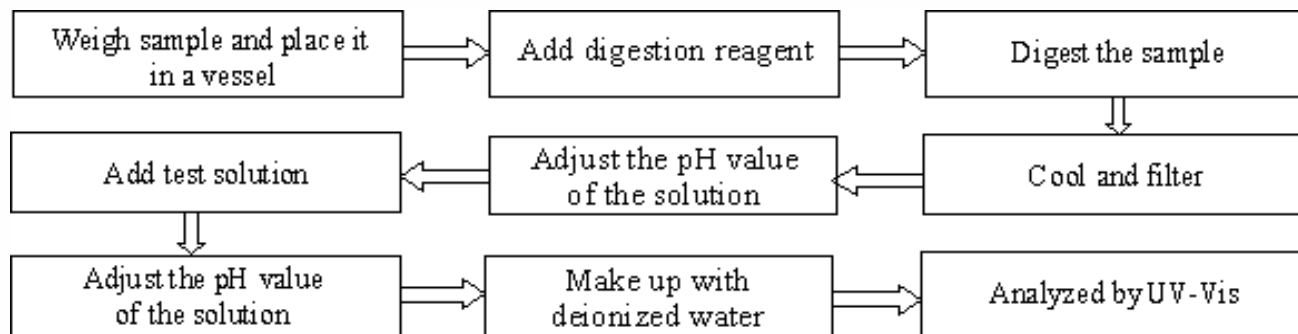
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



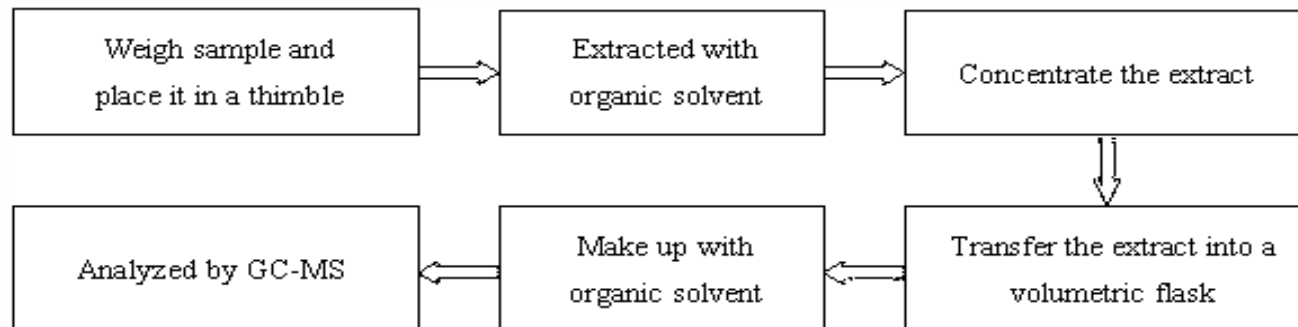
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

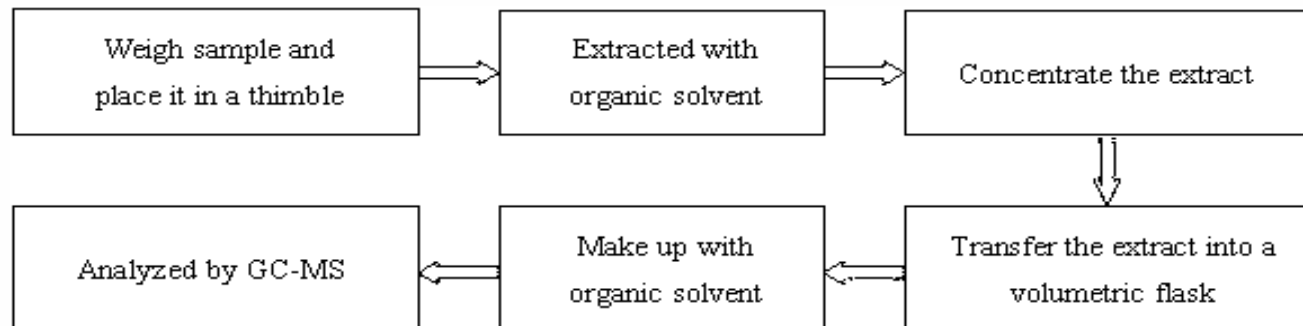


Test Report

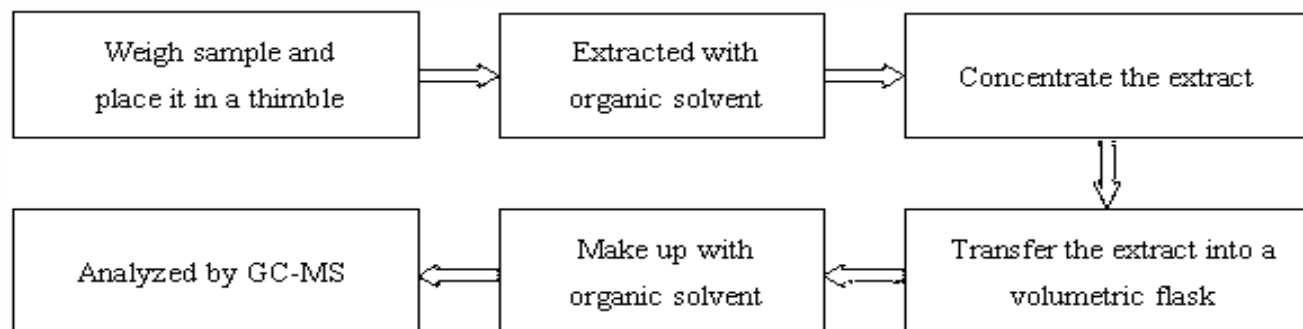
Report No. A2190175998101010

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

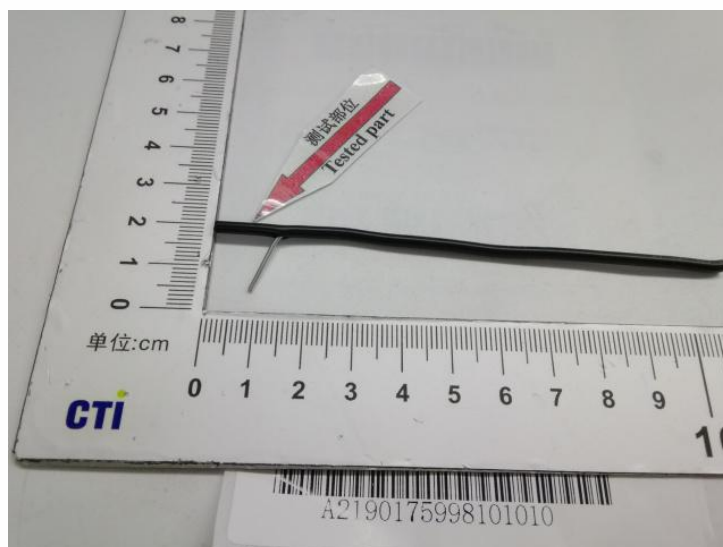


Test Report

Report No. A2190175998101010

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
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Test Report



Page 1 of 7

Report No. A2190175998101004

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name ORANGE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101004

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101004

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101004

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	88 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description Orange wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

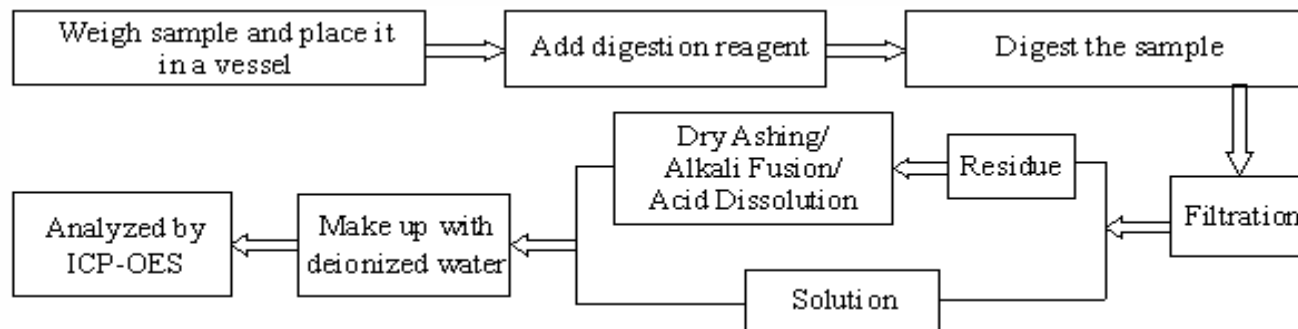
Test Report

Report No. A2190175998101004

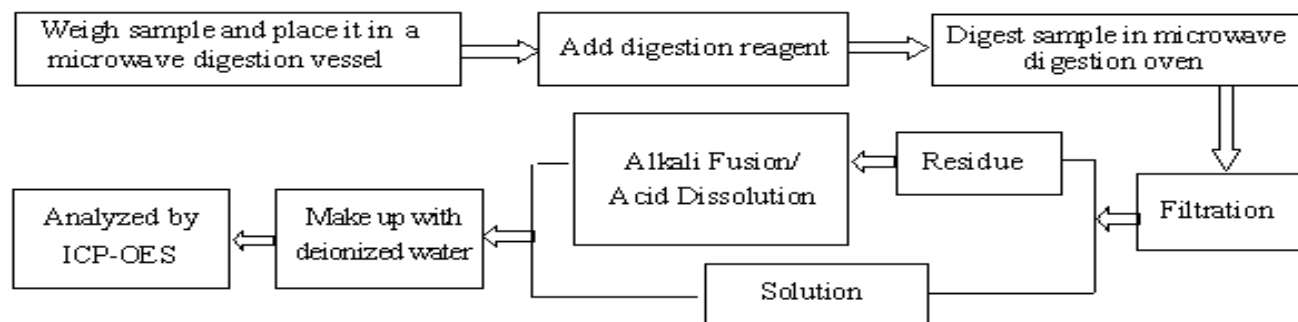
Page 5 of 7

Test Process

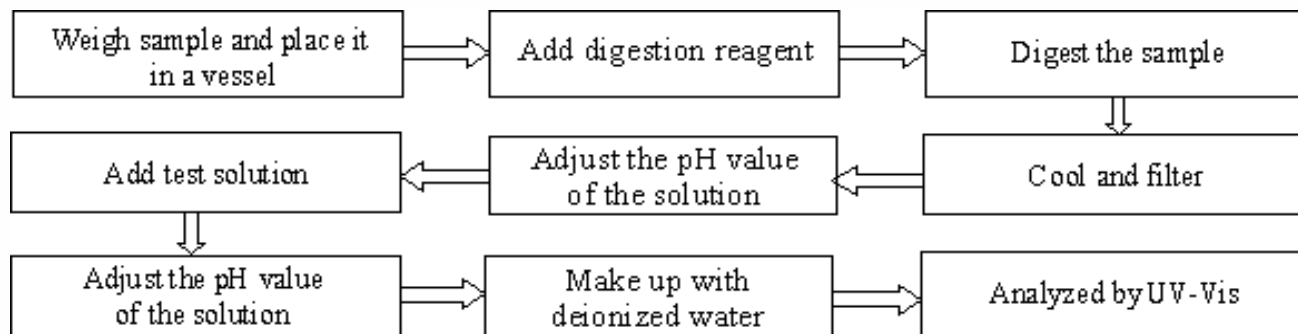
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



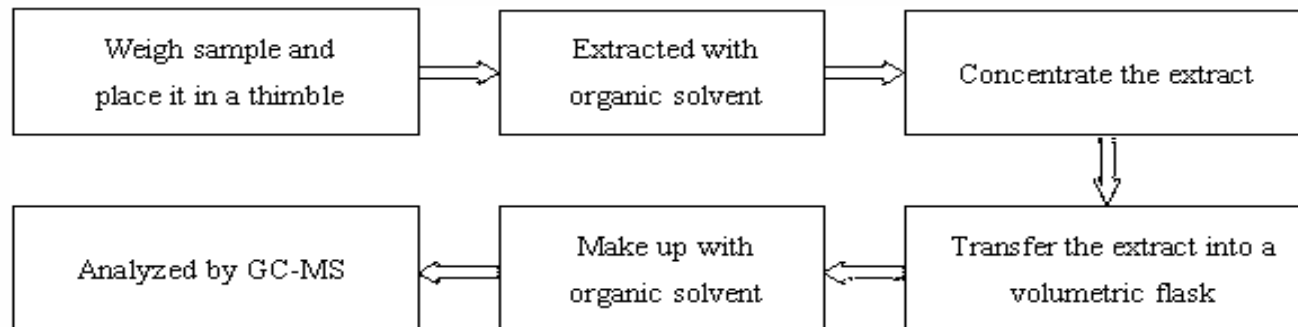
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

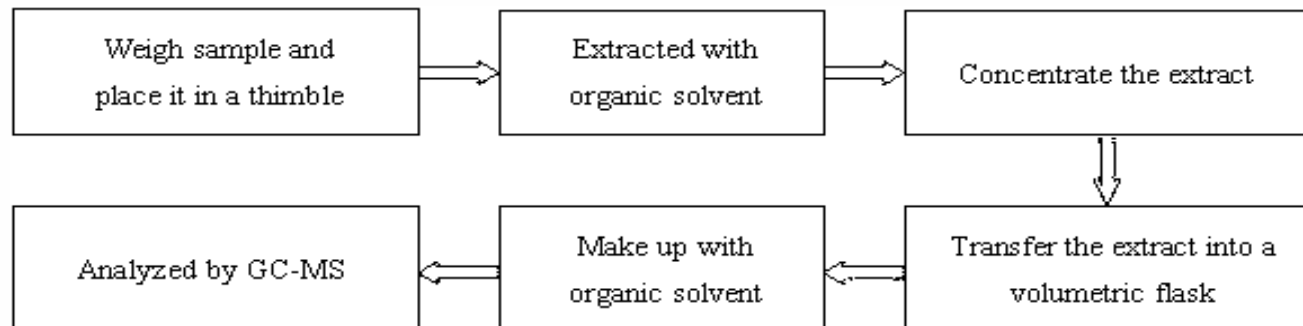


Test Report

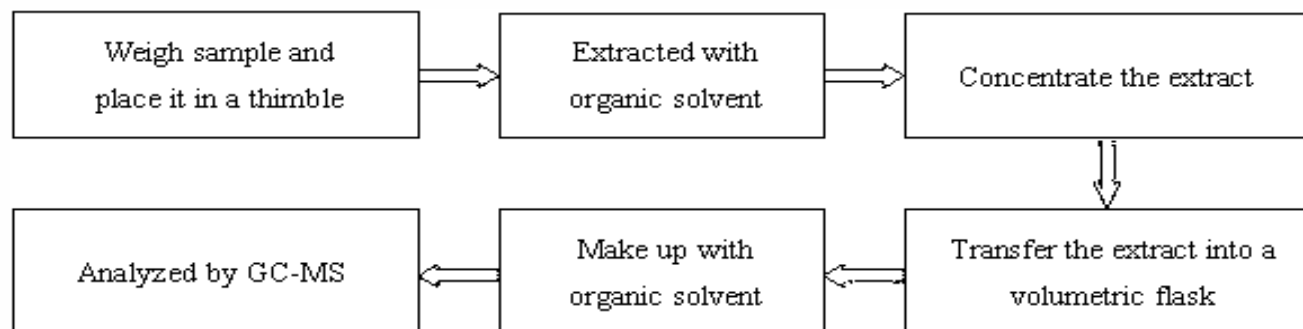
Report No. A2190175998101004

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)

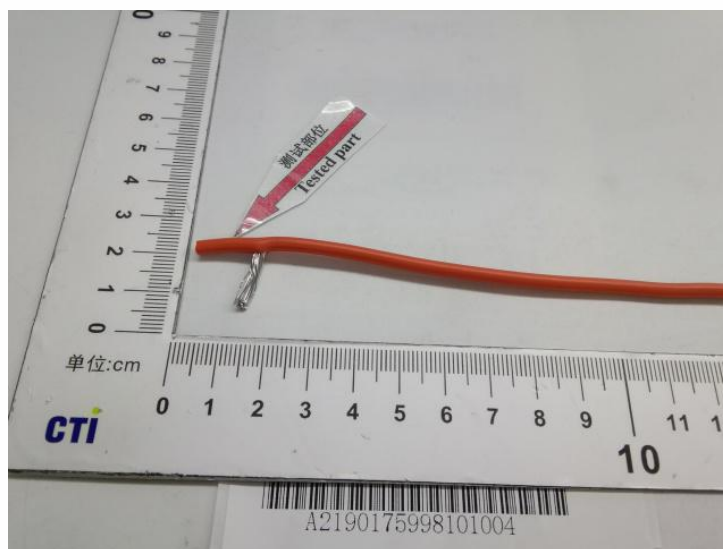


Test Report

Report No. A2190175998101004

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Photo(s) of the sample(s)



*** End of report ***

Statement:

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Test Report



Page 1 of 7

Report No. A2190175998101001

Applicant REIHSING(DONGGUAN) ELECTRIC WIRE AND CABLE CO.,LTD

Address NO.18 LANYUAN ROAD XINAN VILLAGE CHANGAN TOWN DONGGUAN CITY
GUANGDONG CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name WHITE PVC LF INSULATED WIRE

Part No. UL1015 LF WIRE

Client Reference Information UL1007,1015,1571,1061,1028,1032,1080, 1095,1569,1581,1674,1500,
1283,1285, 1011,1013,1497,1789,1685,1617,1672,1618,1010,1316,1429,
1430,1431,3443,3610,2468,2464,2444,20080,2555,2476,2697,
2733,2562,2096,1533,2547,20005,20276,2854,2851,1185,10070,
10198,SPT,(H)VSF,(H)VFF,(H)VCTF,(H)VCFK,H05V2-U, H05V2-K,
AV,AVS,AVSS,CCC60227IEC02(RV)06(RV)08(RV-90)52(RVV)53(RVV),
OR Other PVC insulated wire

Supplier Reihsing

Sample Received Date Jul. 15, 2019

Testing Period Jul. 15, 2019 to Jul. 18, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Hexabromocyclododecane (HBCDD) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Frank Zhang

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

Jul. 18, 2019

No. R338854670

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A2190175998101001

Page 2 of 7

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS

Test Report

Report No. A2190175998101001

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Test Report

Report No. A2190175998101001

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	92 mg/kg	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg

Sample/Part Description White wire jacket

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

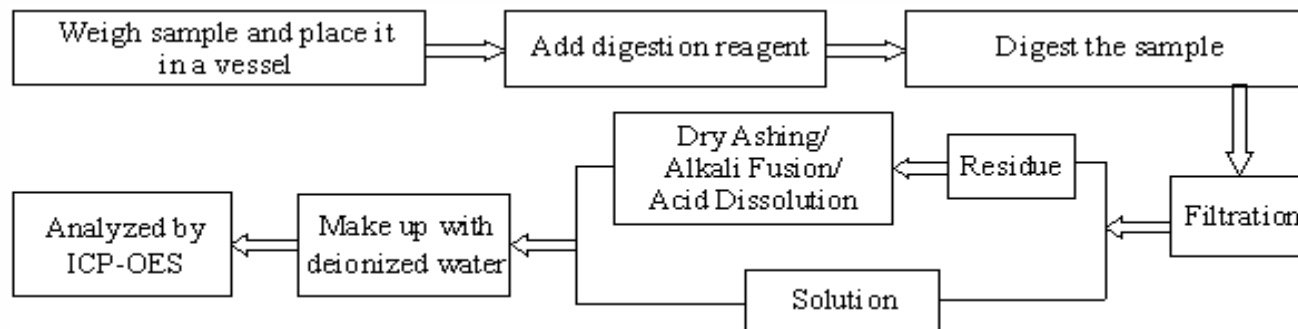
Test Report

Report No. A2190175998101001

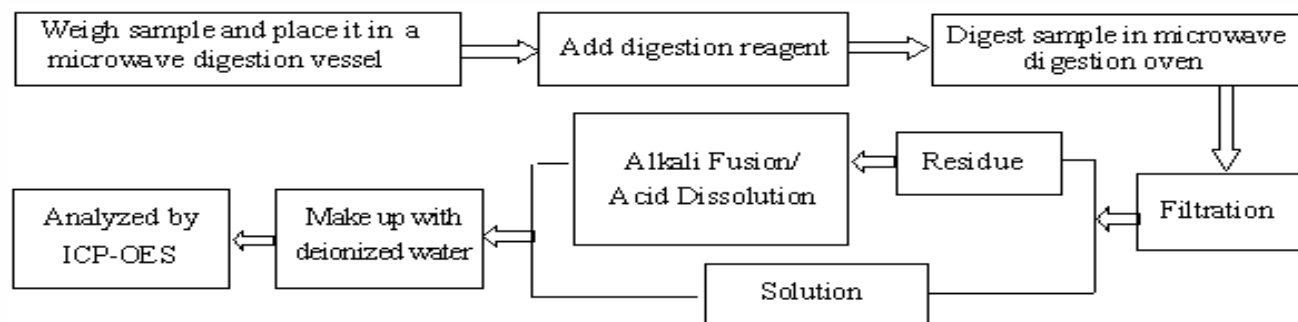
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Test Process

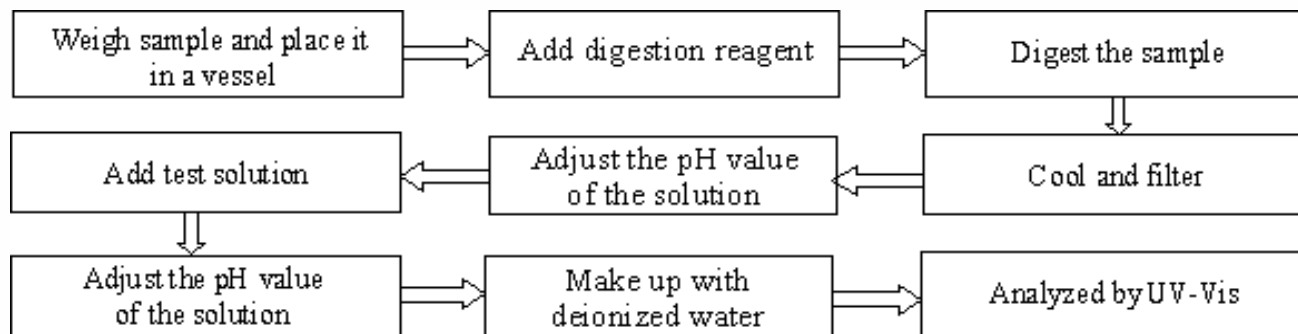
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



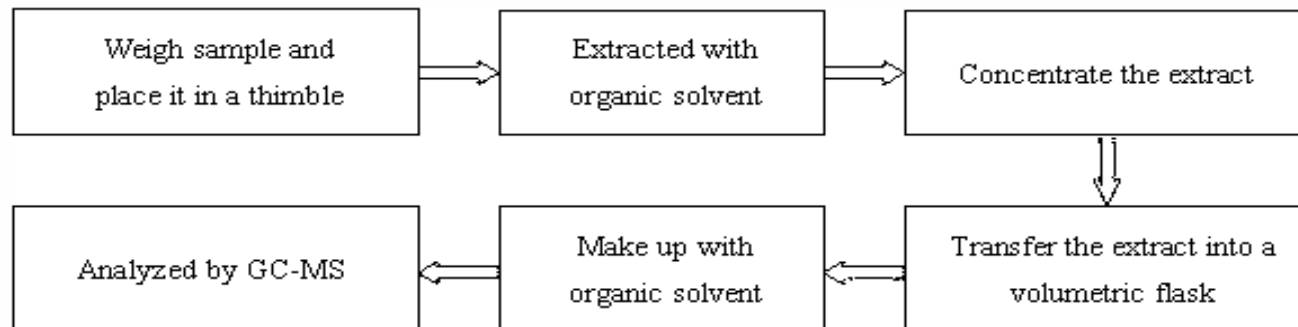
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

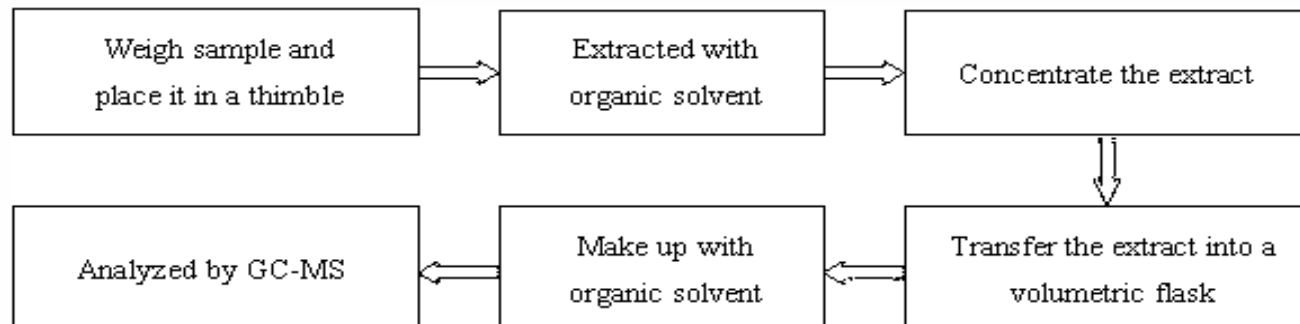


Test Report

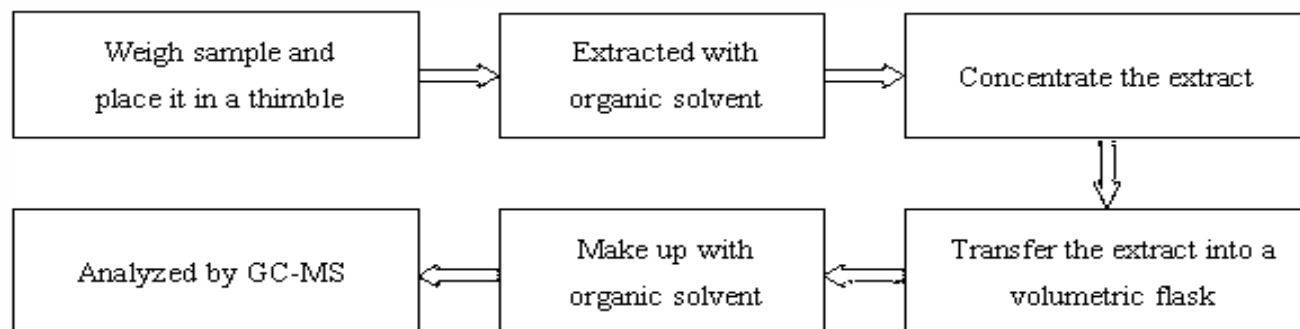
Report No. A2190175998101001

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5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Hexabromocyclododecane (HBCDD)



Test Report

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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report (SVHC)

No. CANEC1901488301

Date: 30 Jan 2019

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-02
Client Ref. Info. : I-PE-02;I-TPE-02;I-PP-02; I-PU-02; I-RU-02; I-TPR-02;I-PPE-02
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



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Guangzhou Branch Testing Center Chemical Laboratory.

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu
Approved Signatory



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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.001	Black liquid	6
SN2	CAN19-014883.004	Black liquid	181
SN3	CAN19-014883.007	Black liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	004 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	007 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	004
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	004
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	004
I	4	Anthracene	120-12-7	0.050	004
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	004
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	004
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	004
I	8	Cobalt dichloride*	7646-79-9	0.005	004
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	004
I	10	Diarsenic trioxide*	1327-53-3	0.005	004
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	004
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4, 3194-55-6	0.050	004
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	004
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	004
I	15	Triethyl arsenate*	15606-95-8	0.005	004
II	16	2,4-Dinitrotoluene	121-14-2	0.050	004
II	17	Acrylamide	79-06-1	0.050	004
II	18	Anthracene oil**	90640-80-5	0.050	004
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	004



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	004
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	004
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	004
II	23	Diisobutyl phthalate	84-69-5	0.050	004
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	004
II	25	Lead chromate*	7758-97-6	0.005	004
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	004
II	27	Pitch, coal tar, high temp. **	65996-93-2	0.050	004
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	004
III	29	Ammonium dichromate*	7789-09-5	0.005	004
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	004
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	004
III	32	Potassium chromate*	7789-00-6	0.005	004
III	33	Potassium dichromate*	7778-50-9	0.005	004
III	34	Sodium chromate*	7775-11-3	0.005	004
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	004
III	36	Trichloroethylene	79-01-6	0.050	004
IV	37	2-Ethoxyethanol	110-80-5	0.050	004
IV	38	2-Methoxyethanol	109-86-4	0.050	004



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	004
IV	40	Chromium trioxide*	1333-82-0	0.005	004
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	004
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	004
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	004
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	004
V	45	1,2,3-trichloropropane	96-18-4	0.050	004
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	004
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	004
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	004
V	49	2-ethoxyethyl acetate	111-15-9	0.050	004
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	004
V	51	Strontium chromate*	7789-06-2	0.005	004
VI	52	1,2-Dichloroethane	107-06-2	0.050	004
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	004
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	004
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	004
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	004
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	004
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	004
VI	60	Calcium arsenate*	7778-44-1	0.005	004
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	004
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	004
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	004
VI	64	Lead dipicrate*	6477-64-1	0.005	004
VI	65	Lead styphnate*	15245-44-0	0.005	004
VI	66	N,N-dimethylacetamide	127-19-5	0.050	004
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	004
VI	68	Phenolphthalein	77-09-8	0.050	004
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	004
VI	70	Trilead diarsenate*	3687-31-8	0.005	004
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	004
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	004
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	004
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	004
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	004
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	004
VII	78	Diboron trioxide*	1303-86-2	0.005	004
VII	79	Formamide	75-12-7	0.050	004
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	004
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	004
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	004
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	004
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	004
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	004
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	004
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	004
VIII	88	1-Bromopropane	106-94-5	0.050	004
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	004
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	004
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	004
VIII	93	4-Aminoazobenzene	60-09-3	0.050	004
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	004
VIII	95	4-Nonylphenol, branched and linear	-	0.050	004
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	004
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	004
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	004
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	004
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	004
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	004
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	004
VIII	103	Diethyl sulphate	64-67-5	0.050	004
VIII	104	Diisopentylphthalate	605-50-5	0.050	004
VIII	105	Dimethyl sulphate	77-78-1	0.050	004
VIII	106	Dinoseb	88-85-7	0.050	004
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	004
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	004
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	004
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	004
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	004
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	004
VIII	114	Lead cyanamidate*	20837-86-9	0.005	004
VIII	115	Lead dinitrate*	10099-74-8	0.005	004
VIII	116	Lead monoxide*	1317-36-8	0.005	004
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	004
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	004
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	004
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	004
VIII	121	Methoxyacetic acid	625-45-6	0.050	004
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	004
VIII	123	N,N-dimethylformamide	68-12-2	0.050	004
VIII	124	N-Methylacetamide	79-16-3	0.050	004
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	004
VIII	126	o-Aminoazotoluene	97-56-3	0.050	004
VIII	127	o-Toluidine	95-53-4	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosfluorotridecanoic acid	72629-94-8	0.050	004
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	004
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	004
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	004
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	004
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	004
VIII	134	Tetraethyllead*	78-00-2	0.005	004
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	004
VIII	136	Tricosfluorododecanoic acid	307-55-1	0.050	004
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	004
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	004
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	004
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	004
IX	141	Cadmium oxide*	1306-19-0	0.005	004
IX	142	Cadmium*	7440-43-9	0.005	004
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	004
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	004
X	145	Cadmium sulphide*	1306-23-6	0.005	004
X	146	Dihexyl phthalate	84-75-3	0.050	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	004
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	004
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	004
X	150	Lead di(acetate)*	301-04-2	0.005	004
X	151	Trixylyl phosphate	25155-23-1	0.050	004
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	004
XI	153	Cadmium chloride*	10108-64-2	0.005	004
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	004
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	004
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	004
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	004
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	004
XII	159	Cadmium fluoride*	7790-79-6	0.005	004
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	004



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	004
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	004
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	004
XIV	164	1,3-propanesultone	1120-71-4	0.050	004
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	004
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	004
XIV	167	Nitrobenzene	98-95-3	0.050	004
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	004
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	004
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	004
XVI	171	4-Heptylphenol, branched and linear	-	0.050	004



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XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	004
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	004
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	004
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	004
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	004
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	004
XVIII	178	Cadmium carbonate*	513-78-0	0.005	004
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	004
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	004
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	004
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	007
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	007
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	007
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	007
XIX	186	Disodium octaborate*	12008-41-2	0.005	007



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Test Report (SVHC)

No. CANEC1901488301

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	007
XIX	188	Ethylenediamine	107-15-3	0.050	007
XIX	189	Lead*	7439-92-1	0.005	007
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	007
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	007
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	001
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	001
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	001
XX	195	Fluoranthene	206-44-0	0.050	001
XX	196	Phenanthrene	85-01-8	0.050	001
XX	197	Pyrene	129-00-0	0.050	001



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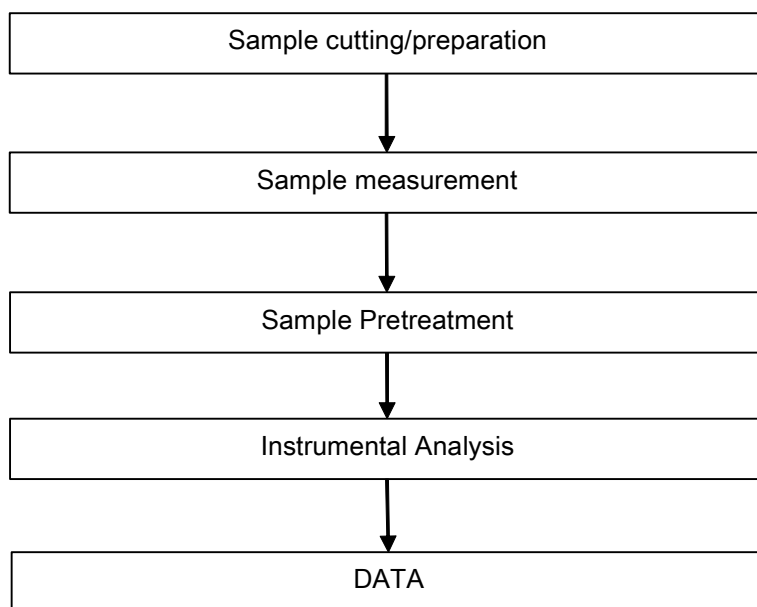
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ATTACHMENTS

SVHC Testing Flow Chart



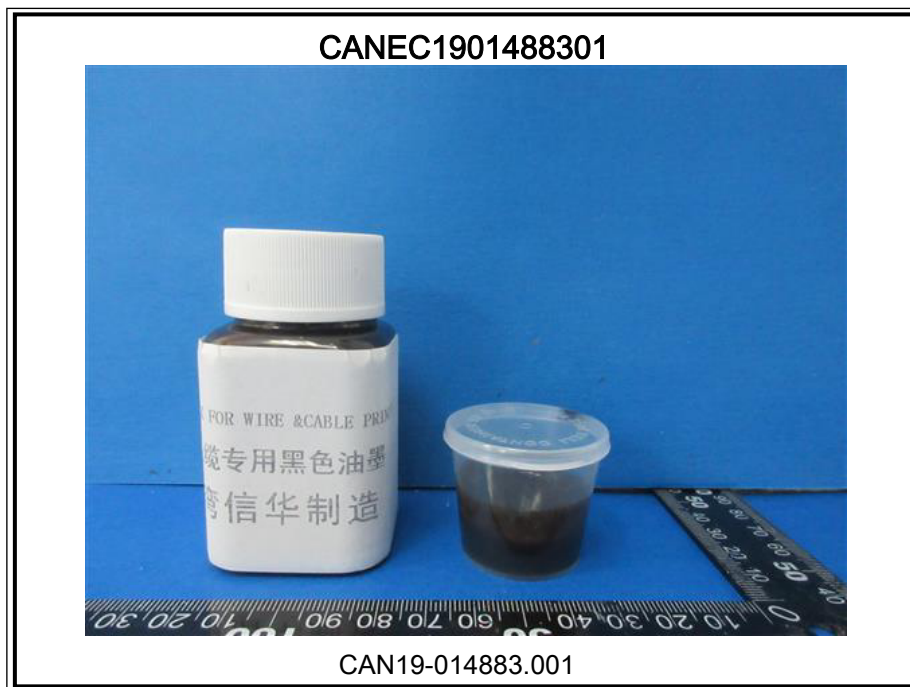
Test Report (SVHC)

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Sample photo:



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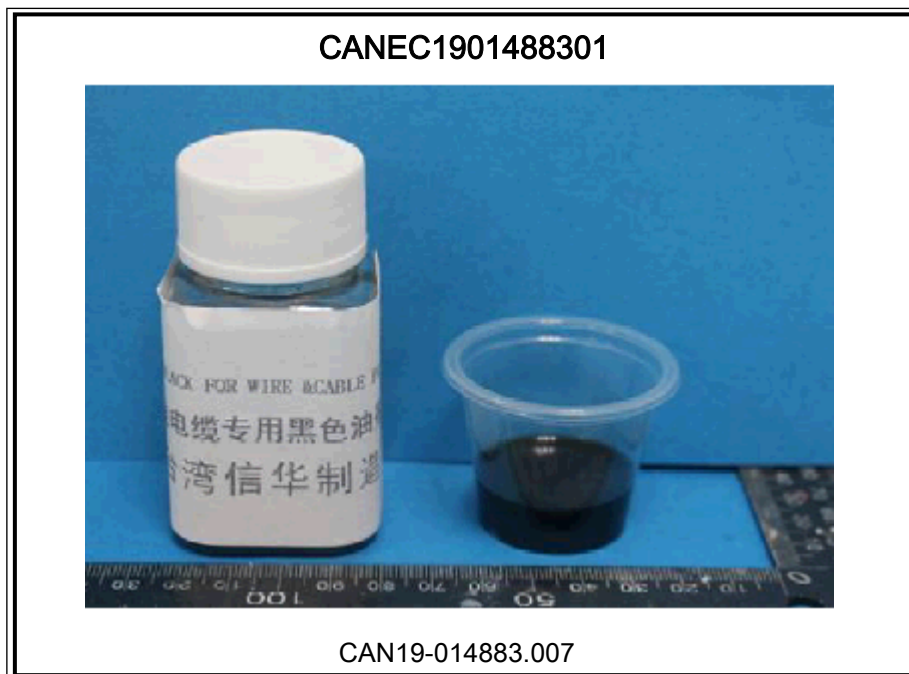
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Test Report (SVHC)

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Test Report

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Date: 12 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-01

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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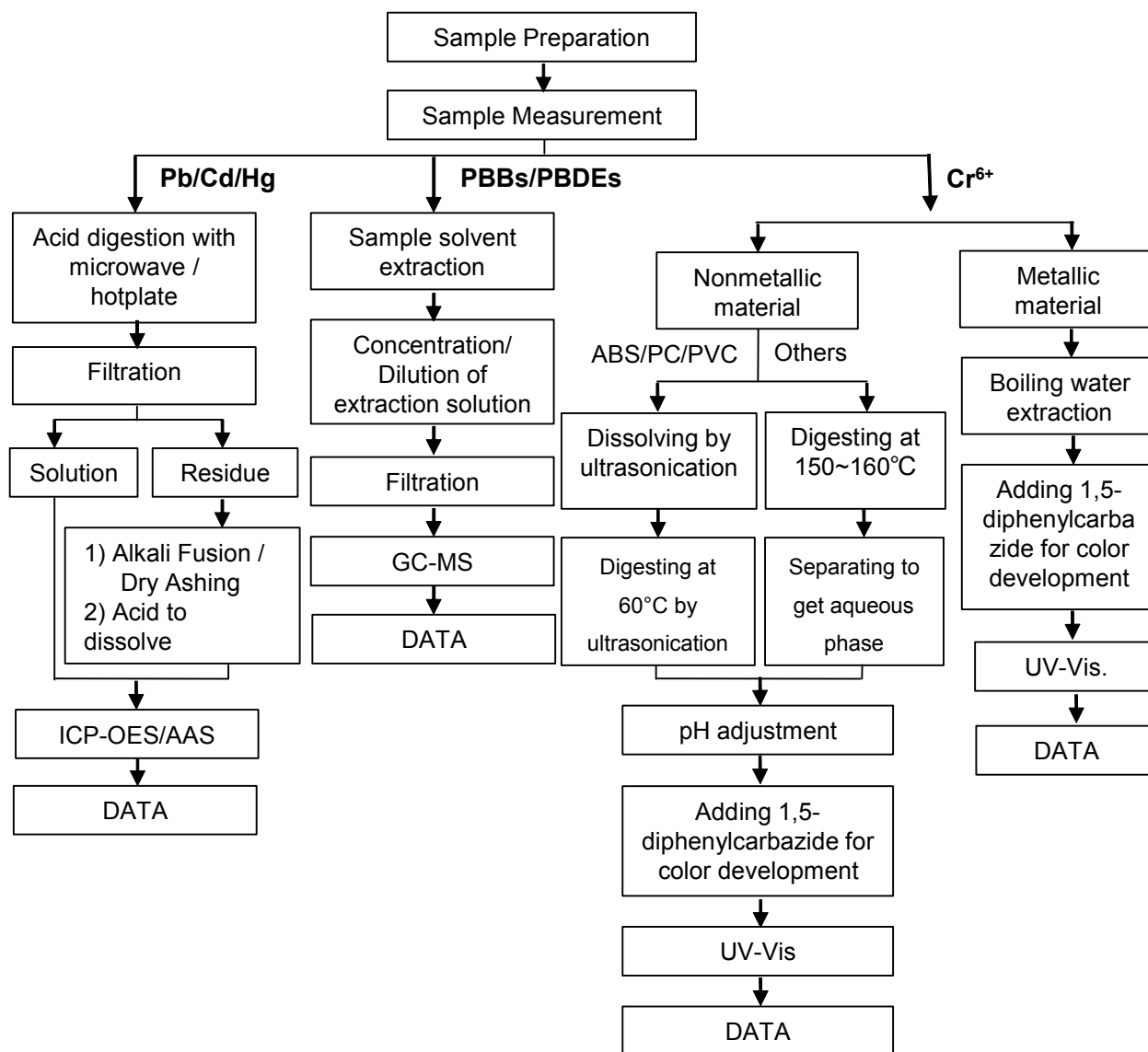
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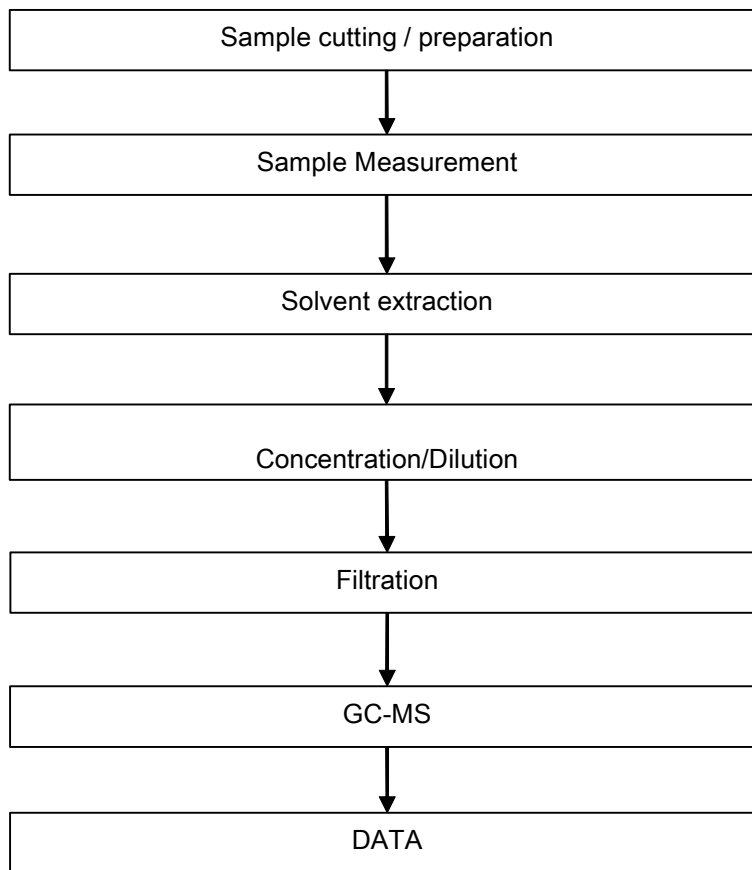
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1910676507

Date: 12 Jun 2019

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Sample photo:



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Test Report

No. CANEC1904032401

Date: 21 Mar 2019

Page 1 of 7

DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1904032401

Date: 21 Mar 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.001	Copper colored metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

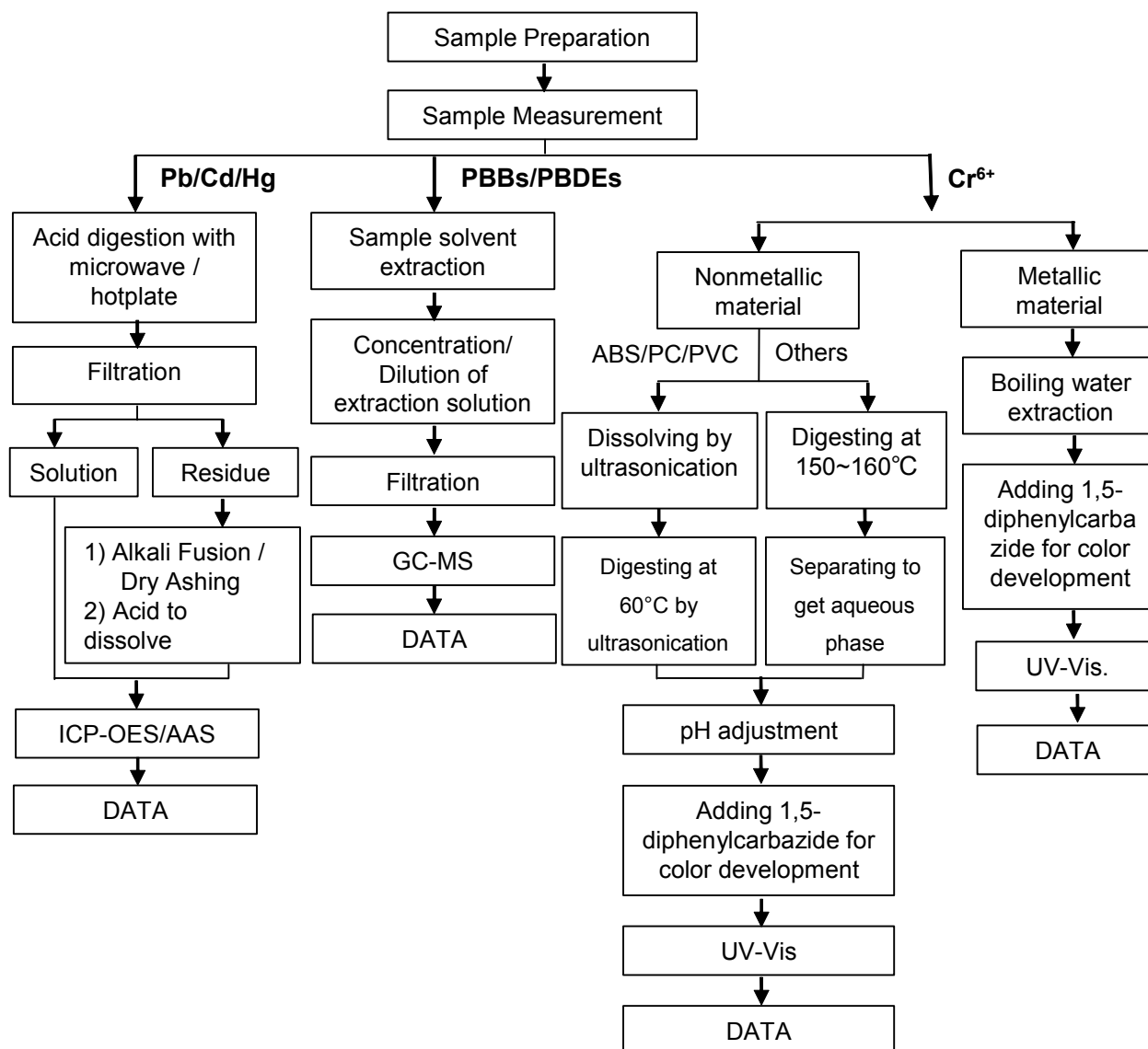
<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Beryllium (Be)	mg/kg	5	ND



ATTACHMENTS

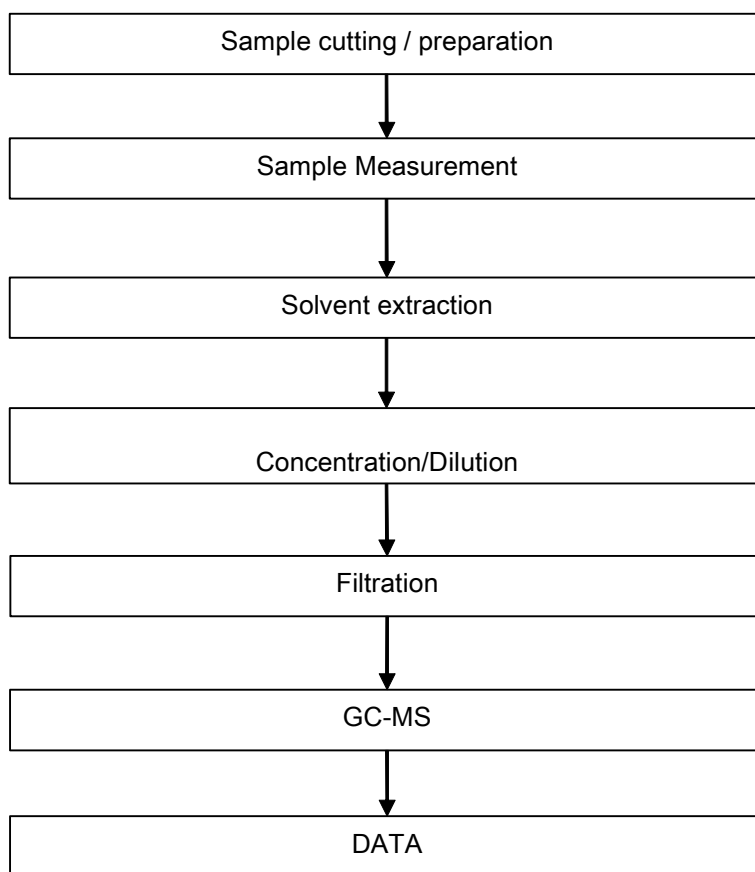
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



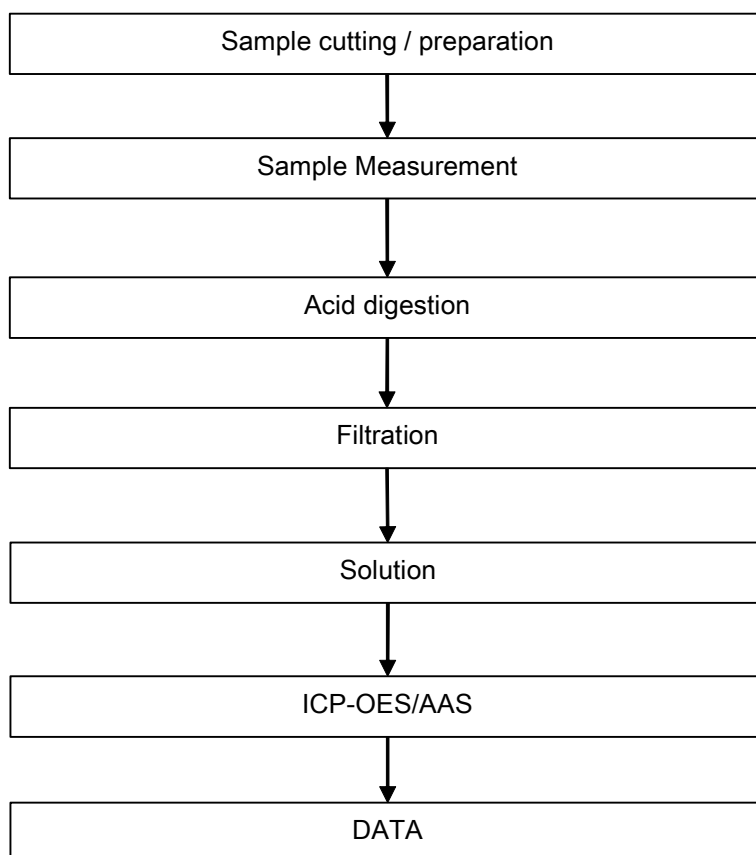
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Phthalates Testing Flow Chart



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Elementary Testing Flow Chart



Test Report

No. CANEC1904032401

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Sample photo:



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Test Report (SVHC)

No. CANEC1904032403

Date: 21 Mar 2019

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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD
QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BARE COPPER WIRE,
TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and ninety seven (197) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Additional One (1) Substances of Very High Concern (SVHC) identified by the notification of WTO on Feb 7, 2019.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.003	Copper colored metal wire(a)+silvery plated metal wire(b)

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result:(Additional SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Add. = Additional identified SVHC
10. Composite test has been performed in equal proportion for the components/material per client requested. And the result is calculated using the minimum sample weight.



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) ^Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
Add.	198	4-tert-butylphenol (PTBP)	98-54-4	0.050



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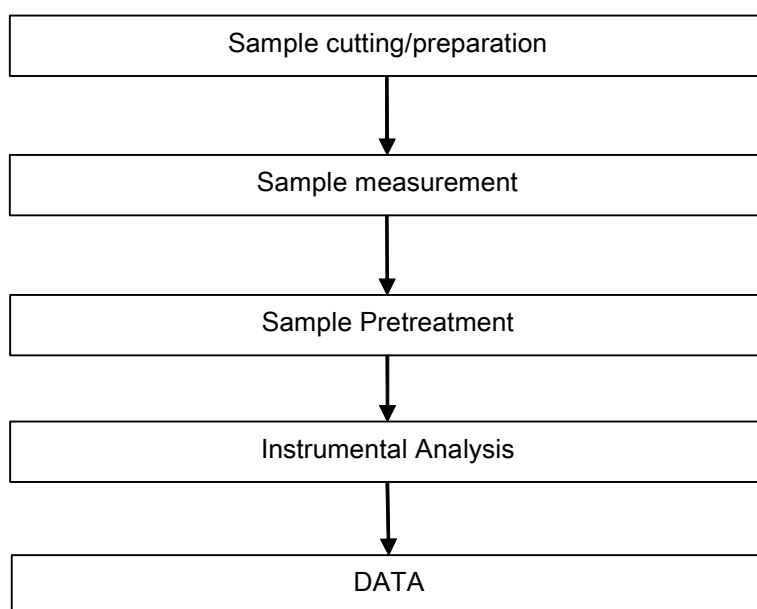
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ATTACHMENTS

SVHC Testing Flow Chart



Test Report (SVHC)

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Sample photo:



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Guangzhou Branch Testing Center Chemical Laboratory

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DONGGUAN LUCKY FLY CONDUCTOR CO.,LTD

QIAO ZI REGION CHANG PING TOWN DONG GUAN CITY GUANG DONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : TINNED COPPER WIRE

SGS Job No. : CP19-011773 - GZ

Date of Sample Received : 15 Mar 2019

Testing Period : 15 Mar 2019 - 21 Mar 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet, Shi
Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-040324.002	Silvery plated metal wire

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	002
Beryllium (Be)	mg/kg	5	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

PFOS (Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS.

Test Item(s)	CAS NO.	Unit	MDL	002
Perfluorooctane Sulfonates (PFOS)^	-	mg/kg	10	ND

Notes :

(1) ^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide,



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N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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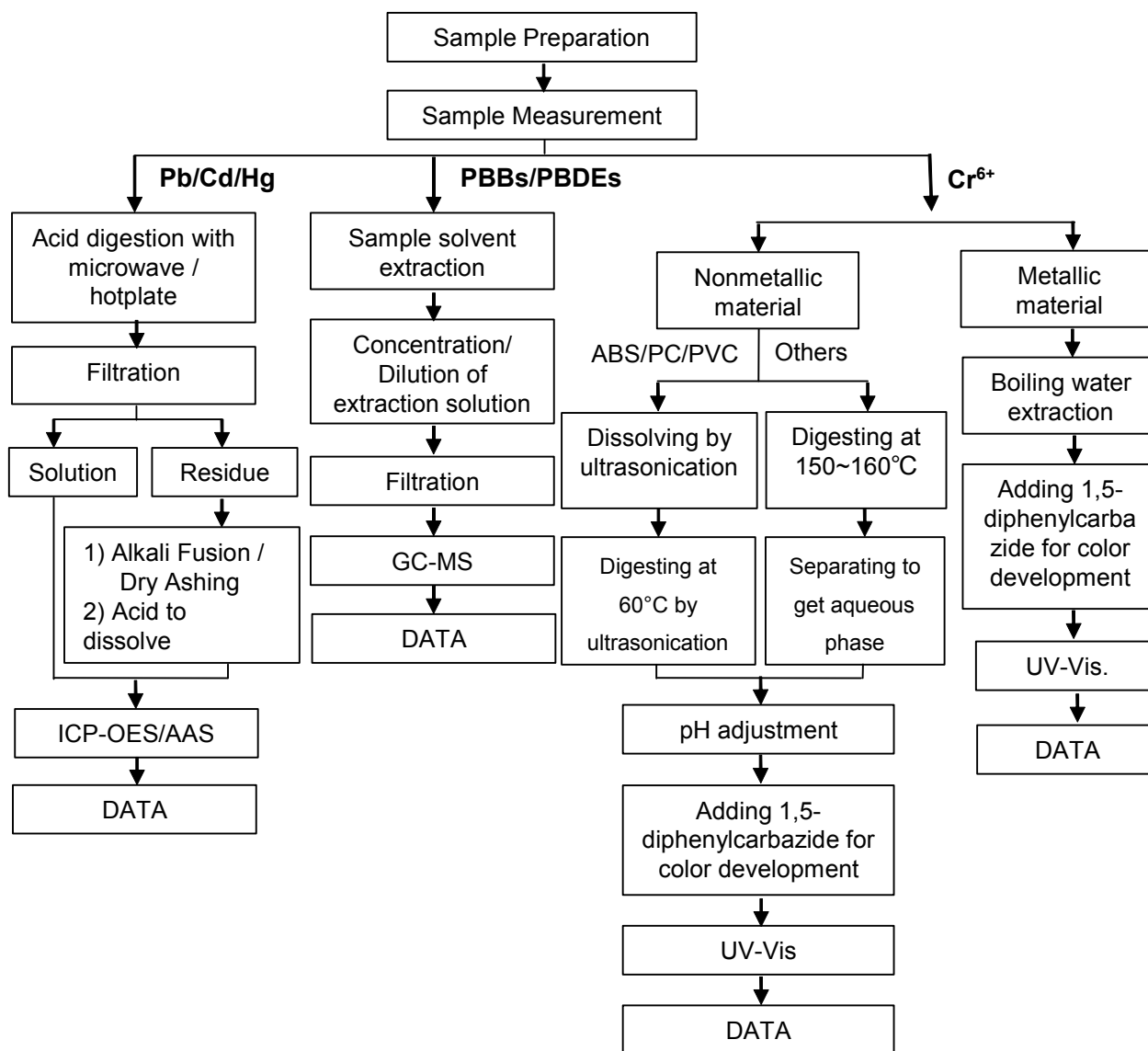
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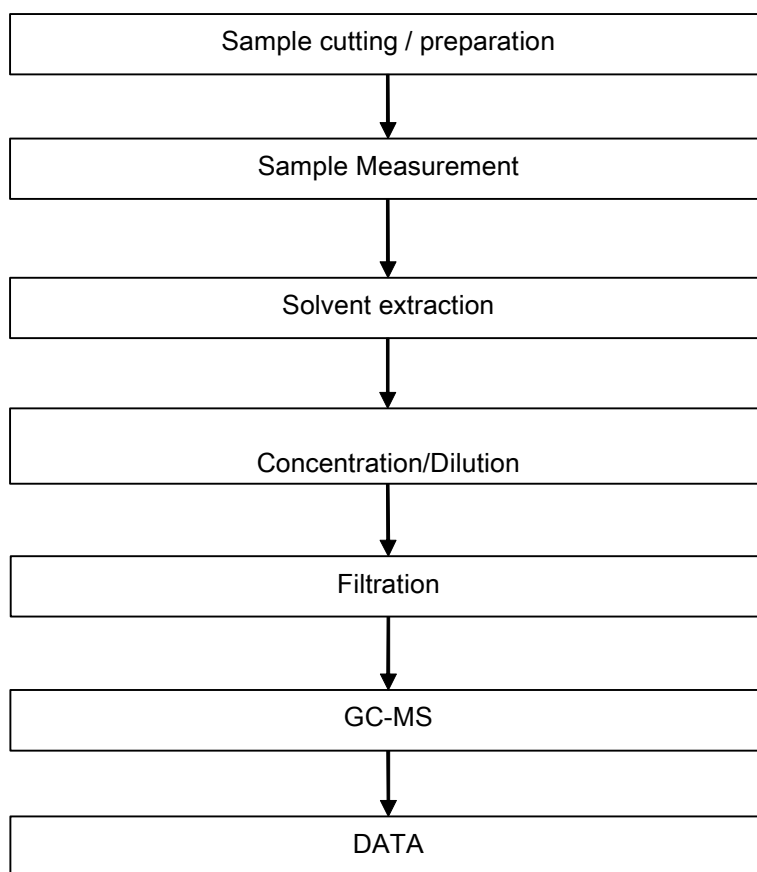
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



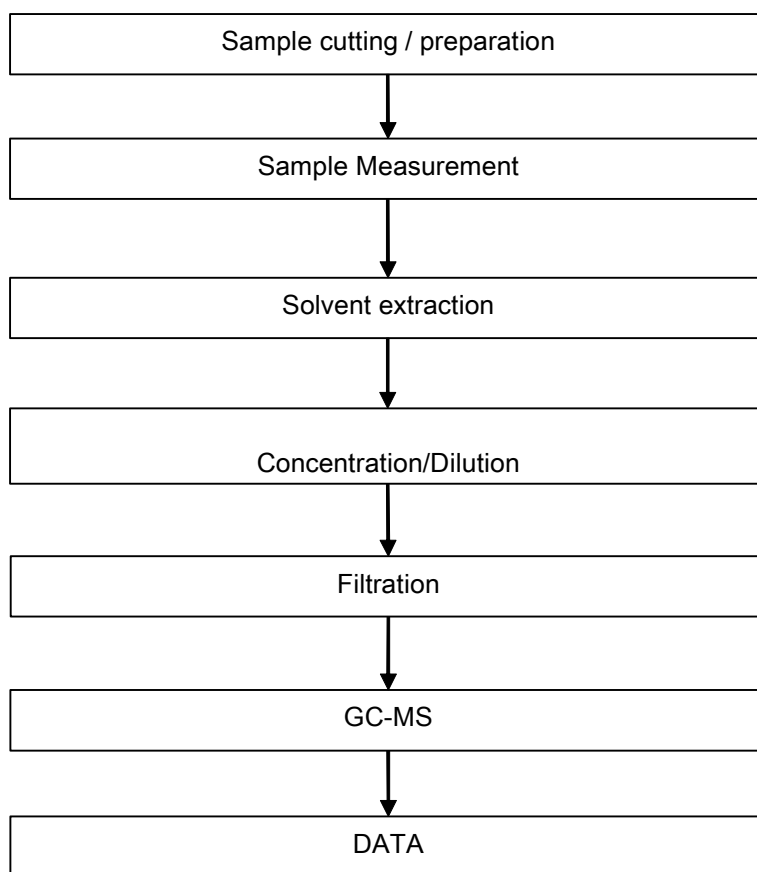
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Phthalates Testing Flow Chart



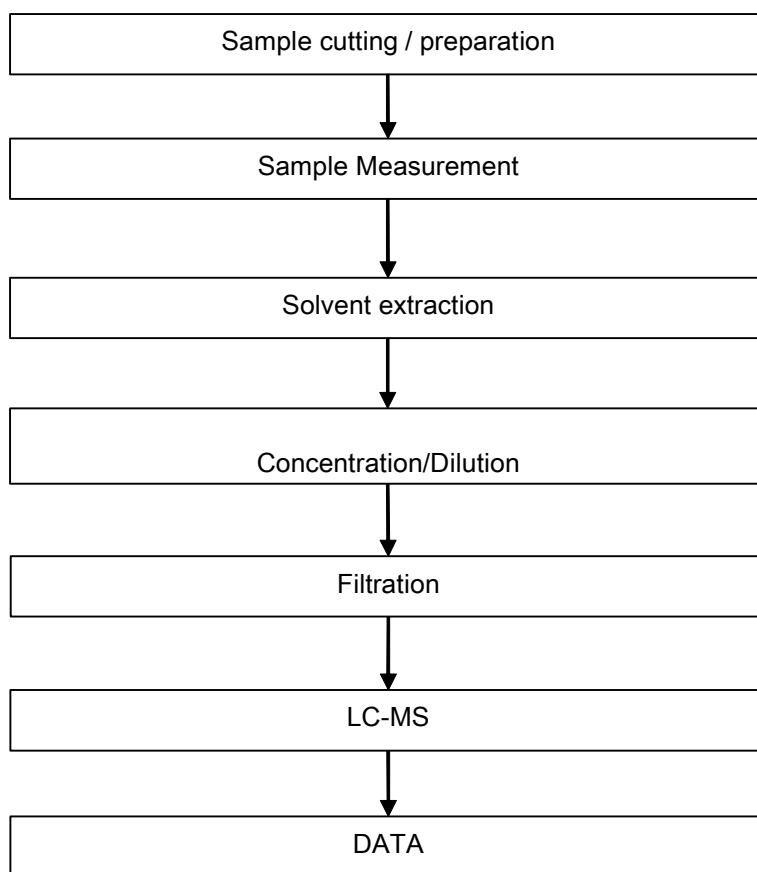
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PAHs Testing Flow Chart



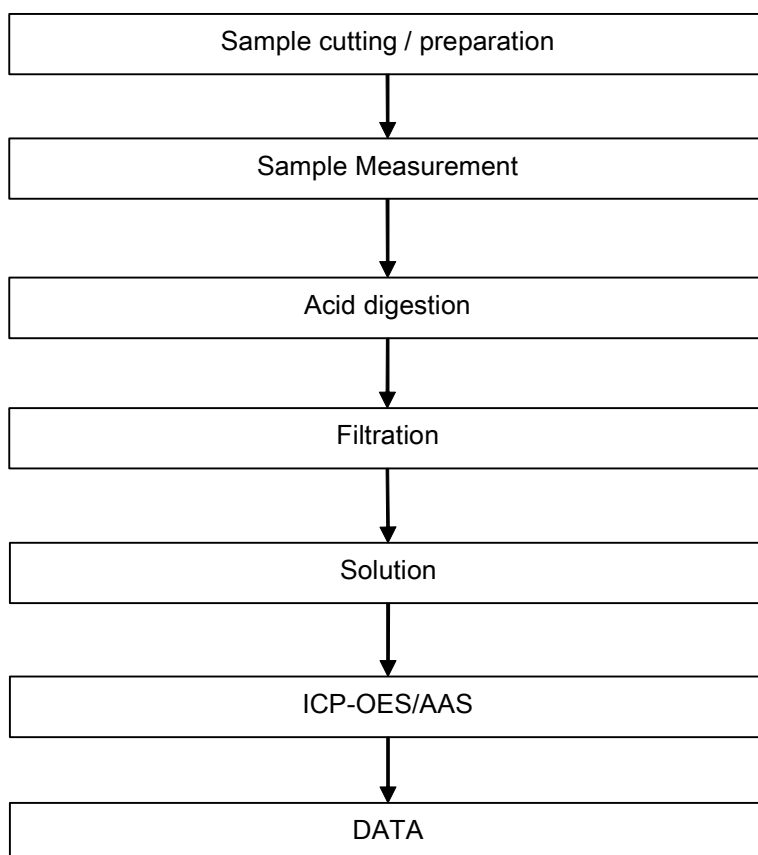
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PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report (SVHC)

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SINWA LASER TECHNOLOGY CO.,LTD.
50.WU KONG 5 TH RD.,WU KU INDUSTRIAL PARK.TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : INK WHITE FOR WIRE &CABLE PRINTING

SGS Job No. : CP19-003784 - SZ
Model No. : I-PVC-01
Client Ref. Info. : I-PE-01;I-TPE-01; I-PP-01; I-PU-01; I-RU-01; I-TPR-01;I-PPE-01
Date of Sample Received : 22 Jan 2019
Testing Period : 22 Jan 2019 - 30 Jan 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) One hundred and eighty one (181) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(ii) Ten (10) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.
(iii) Six (6) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------



Test Report (SVHC)

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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Kelly Qu

Kelly Qu
Approved Signatory



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Test Report (SVHC)

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description	No. of SVHC Tested
SN1	CAN19-014883.002	White liquid	6
SN2	CAN19-014883.005	White liquid	181
SN3	CAN19-014883.008	White liquid	10

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	002 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	005 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	008 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario. **
The test result is based on the calculation of selected marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the total boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
7. ☆CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
9. Results & photo(s) of this report refer to test report CANEC18044466.
10. Results & photo(s) of this report refer to test report CANEC18142276.



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050	005
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050	005
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050	005
I	4	Anthracene	120-12-7	0.050	005
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050	005
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050	005
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050	005
I	8	Cobalt dichloride*	7646-79-9	0.005	005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005	005
I	10	Diarsenic trioxide*	1327-53-3	0.005	005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050	005
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) $^{\Delta}$	25637-99-4, 3194-55-6	0.050	005
I	13	Lead hydrogen arsenate*	7784-40-9	0.005	005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005	005
I	15	Triethyl arsenate*	15606-95-8	0.005	005
II	16	2,4-Dinitrotoluene	121-14-2	0.050	005
II	17	Acrylamide	79-06-1	0.050	005
II	18	Anthracene oil**	90640-80-5	0.050	005
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050	005
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050	005
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050	005
II	23	Diisobutyl phthalate	84-69-5	0.050	005
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005	005
II	25	Lead chromate*	7758-97-6	0.005	005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005	005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050	005
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050	005
III	29	Ammonium dichromate*	7789-09-5	0.005	005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005	005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005	005
III	32	Potassium chromate*	7789-00-6	0.005	005
III	33	Potassium dichromate*	7778-50-9	0.005	005
III	34	Sodium chromate*	7775-11-3	0.005	005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005	005
III	36	Trichloroethylene	79-01-6	0.050	005
IV	37	2-Ethoxyethanol	110-80-5	0.050	005
IV	38	2-Methoxyethanol	109-86-4	0.050	005

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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005	005
IV	40	Chromium trioxide*	1333-82-0	0.005	005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005	005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005	005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005	005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005	005
V	45	1,2,3-trichloropropane	96-18-4	0.050	005
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050	005
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050	005
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050	005
V	49	2-ethoxyethyl acetate	111-15-9	0.050	005
V	50	Hydrazine	7803-57-8, 302-01-2	0.050	005
V	51	Strontium chromate*	7789-06-2	0.005	005
VI	52	1,2-Dichloroethane	107-06-2	0.050	005
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050	005
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050	005
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050	005
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VI	57	Arsenic acid*	7778-39-4	0.005	005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050	005
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050	005
VI	60	Calcium arsenate*	7778-44-1	0.005	005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005	005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050	005
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005	005
VI	64	Lead dipicrate*	6477-64-1	0.005	005
VI	65	Lead styphnate*	15245-44-0	0.005	005
VI	66	N,N-dimethylacetamide	127-19-5	0.050	005
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005	005
VI	68	Phenolphthalein	77-09-8	0.050	005
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005	005
VI	70	Trilead diarsenate*	3687-31-8	0.005	005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005	005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050	005
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050	005



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050	005
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050	005
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050	005
VII	77	4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol§	561-41-1	0.050	005
VII	78	Diboron trioxide*	1303-86-2	0.005	005
VII	79	Formamide	75-12-7	0.050	005
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005	005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050	005
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050	005
VII	83	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050	005
VII	84	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050	005
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005	005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050	005
VIII	87	1,2-Diethoxyethane	629-14-1	0.050	005
VIII	88	1-Bromopropane	106-94-5	0.050	005
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050	005
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050	005
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050	005
VIII	93	4-Aminoazobenzene	60-09-3	0.050	005
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050	005
VIII	95	4-Nonylphenol, branched and linear	-	0.050	005
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050	005
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005	005
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050	005
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050	005
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,14166-21-3	0.050	005
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050	005
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050	005
VIII	103	Diethyl sulphate	64-67-5	0.050	005
VIII	104	Diisopentylphthalate	605-50-5	0.050	005
VIII	105	Dimethyl sulphate	77-78-1	0.050	005
VIII	106	Dinoseb	88-85-7	0.050	005
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005	005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005	005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	109	Furan	110-00-9	0.050	005
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050	005
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050	005
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050	005
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005	005
VIII	114	Lead cyanamidate*	20837-86-9	0.005	005
VIII	115	Lead dinitrate*	10099-74-8	0.005	005
VIII	116	Lead monoxide*	1317-36-8	0.005	005
VIII	117	Lead oxide sulfate*	12036-76-9	0.005	005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005	005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005	005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005	005
VIII	121	Methoxyacetic acid	625-45-6	0.050	005
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050	005
VIII	123	N,N-dimethylformamide	68-12-2	0.050	005
VIII	124	N-Methylacetamide	79-16-3	0.050	005
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050	005
VIII	126	o-Aminoazotoluene	97-56-3	0.050	005
VIII	127	o-Toluidine	95-53-4	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050	005
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005	005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005	005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005	005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005	005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005	005
VIII	134	Tetraethyllead*	78-00-2	0.005	005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005	005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050	005
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005	005
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005	005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050	005
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050	005
IX	141	Cadmium oxide*	1306-19-0	0.005	005
IX	142	Cadmium*	7440-43-9	0.005	005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050	005
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050	005
X	145	Cadmium sulphide*	1306-23-6	0.005	005
X	146	Dihexyl phthalate	84-75-3	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050	005
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050	005
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050	005
X	150	Lead di(acetate)*	301-04-2	0.005	005
X	151	Trixylyl phosphate	25155-23-1	0.050	005
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050	005
XI	153	Cadmium chloride*	10108-64-2	0.005	005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005	005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005	005
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050	005
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050	005
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050	005
XII	159	Cadmium fluoride*	7790-79-6	0.005	005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050	005
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050	005
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050	005
XIV	164	1,3-propanesultone	1120-71-4	0.050	005
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050	005
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050	005
XIV	167	Nitrobenzene	98-95-3	0.050	005
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8,4149-60-4	0.050	005
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050	005
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050	005
XVI	171	4-Heptylphenol, branched and linear	-	0.050	005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7,335-76-2,3830-45-3	0.050	005
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050	005
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050	005
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050	005
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050	005
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005	005
XVIII	178	Cadmium carbonate*	513-78-0	0.005	005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005	005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050	005
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050	005
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050	008
XIX	183	Benzo[ghi]perylene	191-24-2	0.050	008
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050	008
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050	008
XIX	186	Disodium octaborate*	12008-41-2	0.005	008



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Batch	No.	Substance Name	CAS No.	RL (%)	Sample ID
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050	008
XIX	188	Ethylenediamine	107-15-3	0.050	008
XIX	189	Lead*	7439-92-1	0.005	008
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050	008
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050	008
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050	002
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050	002
XX	194	Benzo[k]fluoranthene	207-08-9	0.050	002
XX	195	Fluoranthene	206-44-0	0.050	002
XX	196	Phenanthrene	85-01-8	0.050	002
XX	197	Pyrene	129-00-0	0.050	002



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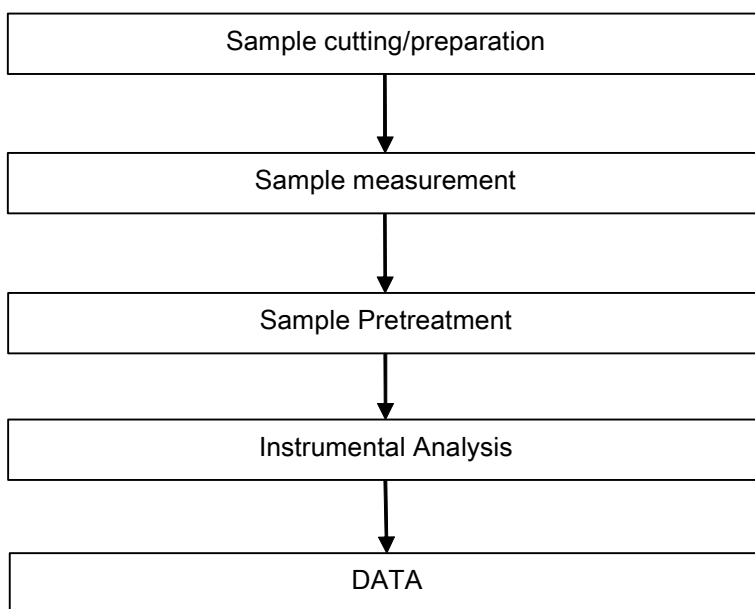
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ATTACHMENTS

SVHC Testing Flow Chart



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Sample photo:



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Test Report

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50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

This report is to supersede test report CANEC1910676513

The following sample(s) was/were submitted and identified on behalf of the clients as : INK BLACK FOR WIRE&CABLE PRINTING

SGS Job No. : CP19-029729 - SZ

Client Ref. Info. : I-PVC-02

Date of Sample Received : 05 Jun 2019

Testing Period : 05 Jun 2019 - 12 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Merry Lv
Approved Signatory



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Test Report

No. CANEC1910676519

Date: 21 Jun 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-106765.003	Black liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



SGS-CSTC Scientific Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1910676519

Date: 21 Jun 2019

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Test Item(s)	Limit	Unit	MDL	003
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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 Guangzhou Branch Testing Center Chemical Laboratory.

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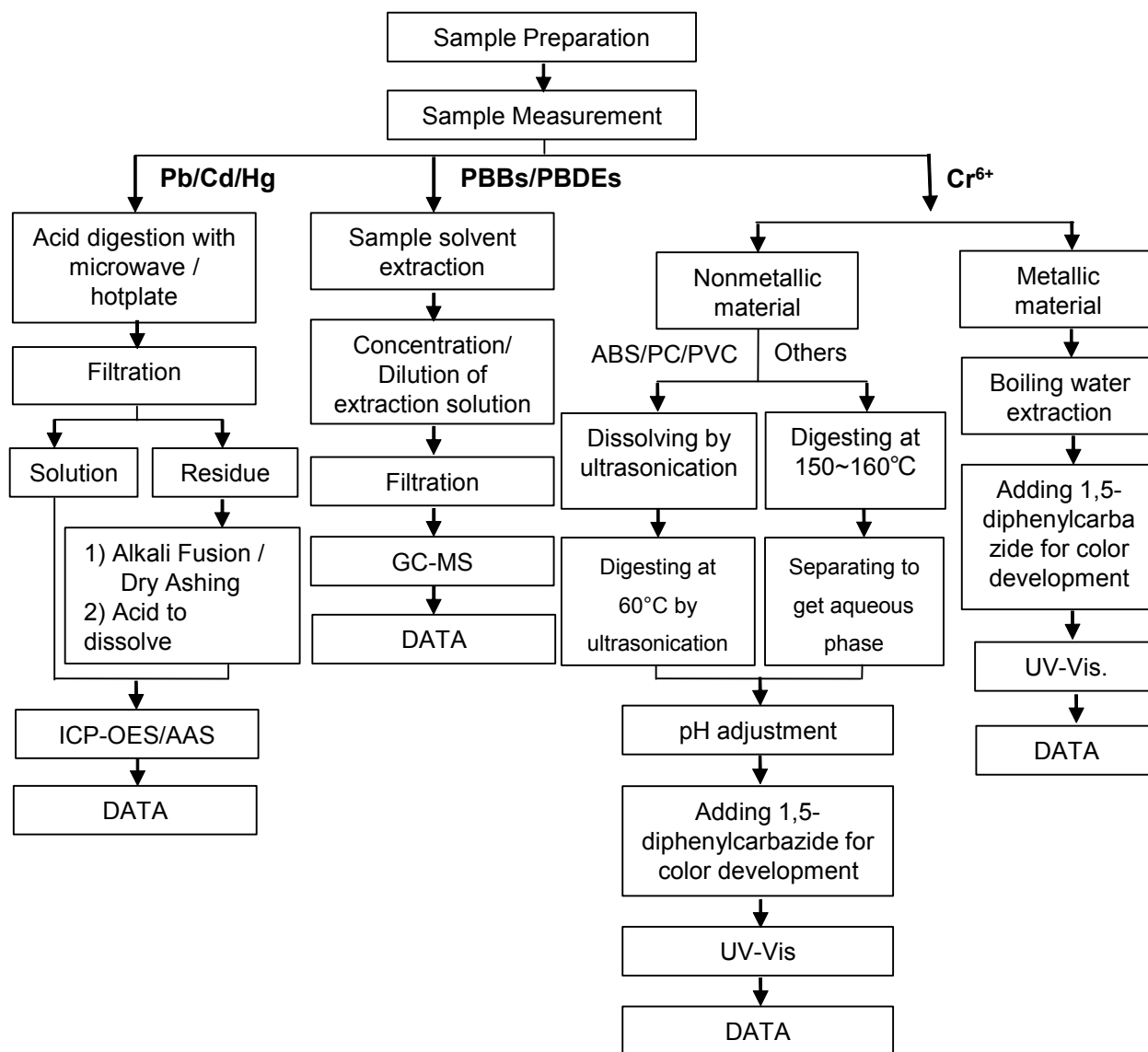
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ATTACHMENTS

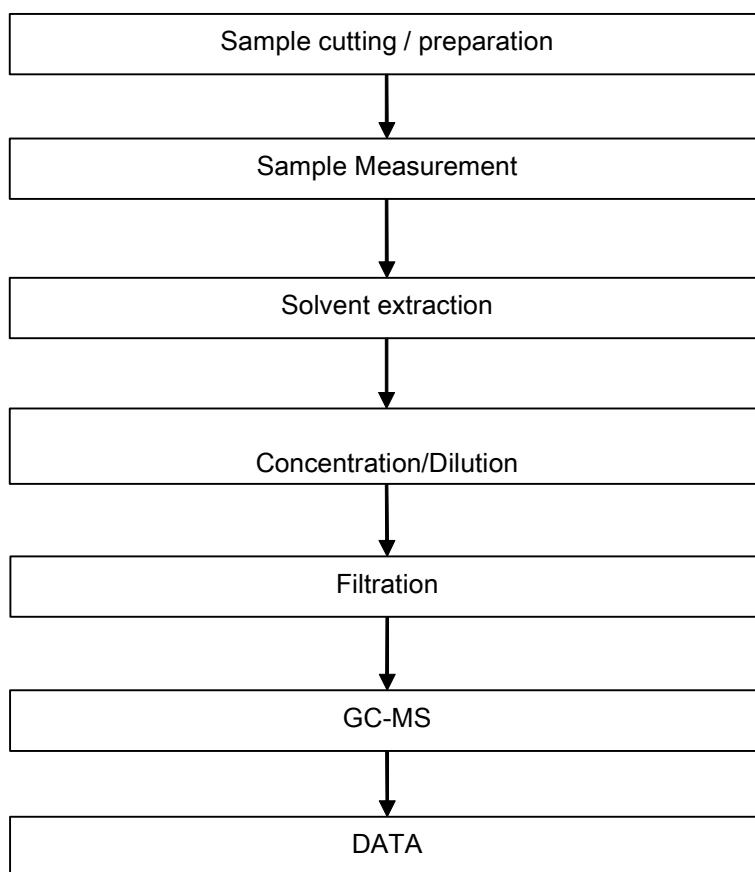
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1910676519

Date: 21 Jun 2019

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Sample photo:

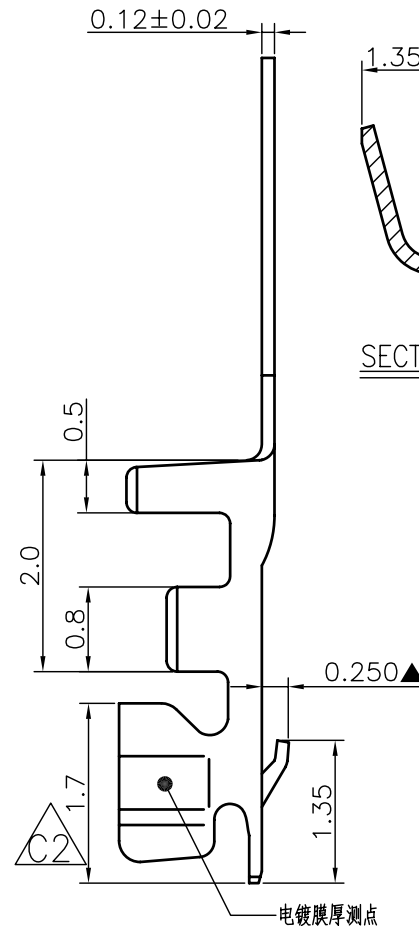
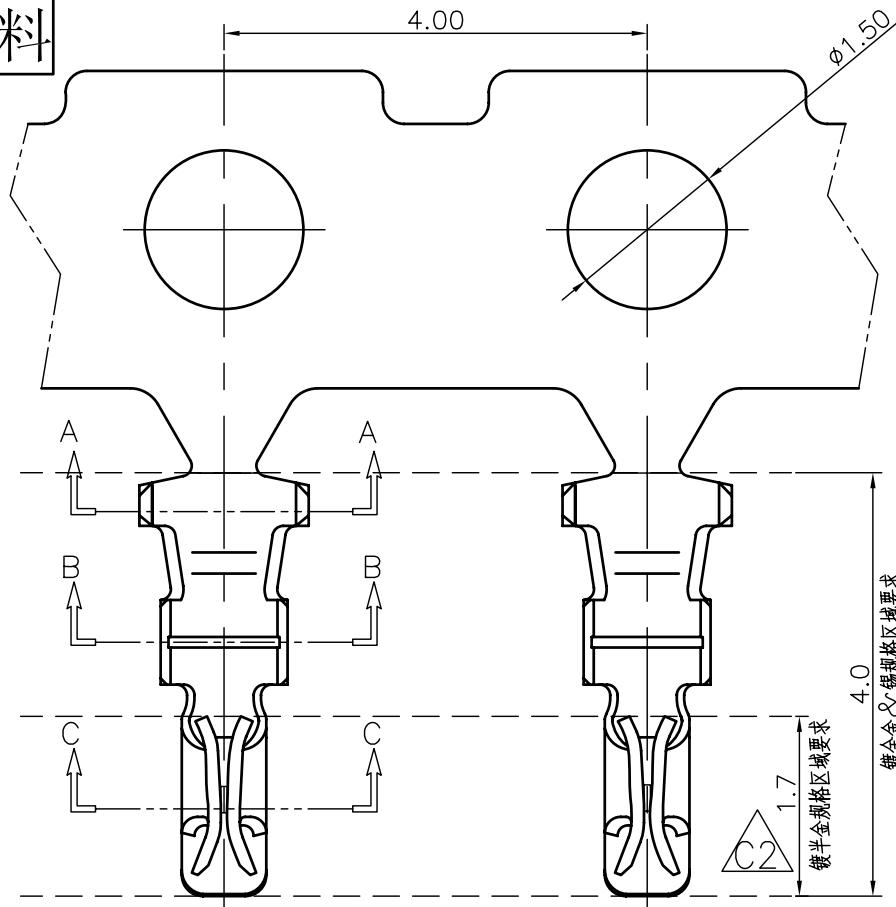


SGS authenticate the photo on original report only

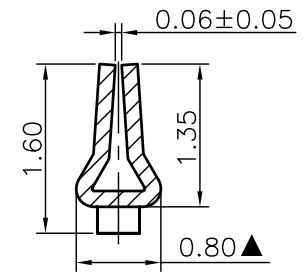
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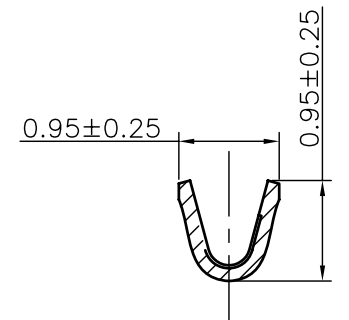
环保物料



SECTION A-A



SECTION C-C



SECTION B-B

Specification & Ordering Information:

Options	Part No	Wire Range	Insulation O.D.	Material	Finish	Qty/reel
1	11002TOP-2E-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Tin-plated 80μ"Min	2,0000 PCS
2	11002TOP-5X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Overall.	2,0000 PCS
3	11002TOP-0X-S-NK	AWG #28~#32	0.80mm(max)	Phosphor Bronze	Gold Plated on Contact Area.	2,0000 PCS

Note:11002TOP-XX-S-NK

0A--Gold-flash 0B--2μ" 0C--3μ" 0D--4μ" 0E--5μ" 5A--Gold-flash 5B--2μ" 5C--3μ" 5D--4μ" 5E--5μ"
0F--10μ" 0G--15μ" 0H--30μ" 0I--50μ" 5F--10μ" 5G--15μ" 5H--30μ" 5I--50μ"

C3	11.05.31	TR1105310082	EAST	唐海江	一般公差 GENERAL TOLERANCE	绘图 DR.	EAST	JCTC 东莞市胜蓝电子有限公司 富 强 电 子 厂	料号 PART NO.
C2	10.08.05	TR1007270049	EAST	唐海江	X.X ±0.25 X' ±5°	校对 CHK.	唐海江		11002TOP-XX-S-NK
C1	09.12.21	修改电镀码料号,增加Mark码	EAST	唐海江	X.XX ±0.15 X.X' ±2°	审核 CHK.	梁友连		文件编号 NUMBER
C0	09.12.09	换图框发行	EAST	唐海江	X.XXX ±0.08 ▲ MAJOR DIM.	核准 APPD.	王志刚		ENDE05
版次REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.	单位 UNIT mm	JST1.0端子 松端		比例 SCALE	1/1
A		B		C		D		E	
								F	
								SHEET 1/1	
								版次 REV. C3	

环保物料

Specifications:
Rated Voltage : 50V AC/DC
Rated Current : 1A AC,DC
Withstand Voltage : 500V AC/minute
Contact Resistance : 20mΩ(MAX.)
Insulation Resistance : 100MΩ(MIN.)
Temperature Range : -25°C~+85°C

Dimensional Ordering Information:			
Circuits Part No	Dimensions		
	A	B	C
2P	1.00	2.40	5.00
3P	2.00	3.40	6.00
4P	3.00	4.40	7.00
5P	4.00	5.40	8.00
6P	5.00	6.40	9.00
7P	6.00	7.40	10.00
8P	7.00	8.40	11.00
9P	8.00	9.40	12.00
10P	9.00	10.40	13.00
11P	10.00	11.40	14.00
12P	11.00	12.40	15.00
13P	12.00	13.40	16.00
14P	13.00	14.40	17.00
15P	14.00	15.40	18.00
16P	15.00	16.40	19.00
17P	16.00	17.40	20.00
18P	17.00	18.40	21.00
19P	18.00	19.40	22.00
20P	19.00	20.40	23.00
21P	20.00	21.40	24.00
24P	23.00	24.40	27.00
30P	29.00	30.40	33.00

11002H00-NPX-HF-NK
① ② ③④ ⑤ ⑥

- ① Series No.
- ② H90 : Side Contact
H00 : Up Contact
- ③ No. of Circuits
- ④ A: Product color (A--Y)
Blank : Natural type
- ⑤ HF : Halogen Free
- ⑥ Blank: Mark NK: No Mark

Suitable for JCTC 11002 series terminal

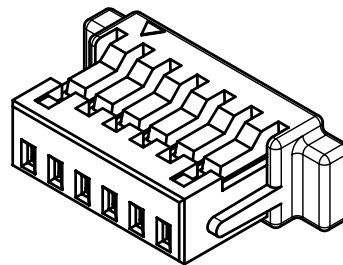
Part No.	Material	Color
11002H00-NP	PBT,UL94V-0	Natural(White)
11002H00-NPA	PBT,UL94V-0	Black
11002H00-NPC	Nylon 66,UL94V-0	Red
11002H00-NPE	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF	Nylon 66,UL94V-0	Black

Part No.	Material	Color
11002H00-NP-NK	PBT,UL94V-0	Natural(White)
11002H00-NPA-NK	PBT,UL94V-0	Black
11002H00-NPC-NK	Nylon 66,UL94V-0	Red
11002H00-NPE-NK	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF-NK	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF-NK	Nylon 66,UL94V-0	Black

C4	12.07.24	将18P主体厚度由2.08改为2.11	龚友连	王志刚	一般公差 GENERAL TOLERANCE		绘图 DR.	欧阳小强	JCTC® 东莞市胜蓝电子有限公司 TERMINAL & CONNECTORS — 富强电子厂 — 品名 TITLE JST 1.00mm PITCH HOUSING	料号 PART NO. 11002H00-NPX-XX-XX		
C3	11.07.19	主体增加“HF”	龚友连	王志刚	X.X ±0.25	X' ±5'	校对 CHK.	龚友连		文件编号 NUMBER ENDE05		
C2	10.11.25	新增黑色无齿规格	龚友连	王志刚	X.XX ±0.15	X.X' ±2'	审核 CHK.	龚友连		比例 SCALE		
C1	10.07.06	新增24P,30P规格	龚友连	王志刚	X.XXX ±0.08	▲ MAJOR DIM.	核准 APPD.	王志刚		SHEET 1/1		
版次 REV.	日期 DATE	变更内容 DESCRIPTION	审核 CHK.	核准 APPD.	单位 UNIT mm					版次 REV. C4		

Rated Voltage : 50V AC/DC
Rated Current : 1A AC,DC
Withstand Voltage : 500V AC/minute
Contact Resistance : 20mΩ(MAX.)
Insulation Resistance : 100MΩ(MIN.)
Temperature Range : -25°C~+85°C

Dimensional Ordering Information:			
Circuits Part No	Dimensions		
	A	B	C
2P	1.00	2.40	5.00
3P	2.00	3.40	6.00
4P	3.00	4.40	7.00
5P	4.00	5.40	8.00
6P	5.00	6.40	9.00
7P	6.00	7.40	10.00
8P	7.00	8.40	11.00
9P	8.00	9.40	12.00
10P	9.00	10.40	13.00
11P	10.00	11.40	14.00
12P	11.00	12.40	15.00
13P	12.00	13.40	16.00
14P	13.00	14.40	17.00
15P	14.00	15.40	18.00
16P	15.00	16.40	19.00
17P	16.00	17.40	20.00
18P	17.00	18.40	21.00
19P	18.00	19.40	22.00
20P	19.00	20.40	23.00
21P	20.00	21.40	24.00
24P	23.00	24.40	27.00
30P	29.00	30.40	33.00

 $18P \sim 2.11$

11002H00-NPX-HF-NK

① ② ③④ ⑤ ⑥

① Series No.

② H90 : Side Contact
H00 : Up Contact

③ No. of Circuits

④ A: Product color (A—Y)
Blank : Natural type




⑤ HF : Halogen Free

⑥ Blank: Mark NK: No Mark

Suitable for JCTC 11002 series terminal

Part No.	Material	Color
11002H00-NP	PBT,UL94V-0	Natural(White)
11002H00-NPA	PBT,UL94V-0	Black
11002H00-NPC	Nylon 66,UL94V-0	Red
11002H00-NPE	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF	Nylon 66,UL94V-0	Black

Part No.	Material	Color
11002H00-NP-NK	PBT,UL94V-0	Natural(White)
11002H00-NPA-NK	PBT,UL94V-0	Black
11002H00-NPC-NK	Nylon 66,UL94V-0	Red
11002H00-NPE-NK	Nylon 66,UL94V-0	Yellow
11002H00-NP-HF-NK	Nylon 66,UL94V-0	Natural(White)
11002H00-NPA-HF-NK	Nylon 66,UL94V-0	Black

8	C4	12.07.24	将18P主体厚度由2.08改为2.11	龚友连	王志刚	一般公差 GENERAL TOLERANCE		绘 图 DR.	欧阳小强	<div> 东莞市胜蓝电子有限公司</div> <div>TERMINAL & CONNECTORS — 富强 电子厂 —</div>	料号 PART NO. 11002H00-NPX-XX-XX						
	C3	11.07.19	主体增加“HF”	龚友连	王志刚	X.X ±0.25	X' ±5'	校 对 CHK.	龚友连		文件编号 NUMBER ENDE05						
	C2	10.11.25	新增黑色无齿规格	龚友连	王志刚	X.XX ±0.15	X.X" ±2'	审 核 CHK.	龚友连								
	C1	10.07.06	新增24P,30P规格	龚友连	王志刚	X.XXX ±0.08	▲ MAJOR DIM.										
	版本REV.	日期 DATE	变 更 内 容 DESCRIPTION	审 核 CHK.	核 准 APPD.	单位 UNIT mm	 		核 准 APPD.		王志刚	品 名TITLE JST 1.00mm PITCH HOUSING	比例SCALE 1/1	SHEET 1/1	版次 REV. C4		
A			B			C			D			E			F		

**ECBT2.E338796****Connectors for Use in Data, Signal, Control and Power Applications - Component**[Page Bottom](#)**Connectors for Use in Data, Signal, Control and Power Applications - Component**[See General Information for Connectors for Use in Data, Signal, Control and Power Applications - Component](#)**DONGGUAN CITY SHENGLAN ELECTRONICS CO LTD**

E338796

Hexin Rd

Shatou District

Changan

Dongguan, Guangdong 523846 CHINA

Connectors, Model(s) Cat. No. 11002H00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 17, 18, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W00, follow by -2X, follow by 5, 6, 8, 9, 10, 12, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11002W90, follow by -2X, follow by 5, 6, 8, 9, 10, 15, 20, 25, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 11004H, followed by -2x10 or -2x15, followed by PL.

Cat. No. 11006H00, followed by -2X10, -2X15 or -2X20, followed by P.

Cat. No. 11252H, followed by -2x, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11252W, followed by -2X, followed by 5, 10, 15 or 20, followed by P.

Cat. No. 11253H, followed by -20 or -30, followed by P.

Cat. No. 11253W, followed by -20 or -30, followed by P.

Cat. No. 11258H00, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow A thru Z or 1 thru 9.

Cat. No. 11258W90, follow by -S, follow by -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -20, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 11500H00, followed by -2 thru -15, followed by P.

Cat. No. 11500W00, followed by -2 thru -15, followed by P.

Cat. No. 12002H00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W00, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12002W90, follow by -2 thru -16, follow by P, follow by A thru Z or 1 thru 9, follow by -L, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9.

Cat. No. 12003H, followed by -2x, followed by 2 thru 17, followed by P.

Cat. No. 12009H00, followed by -2X2, -2X3 or -2X4, followed by P.

Cat. No. 12504H00, followed by -2 thru -15, followed by P, followed by -L.

Cat. No. 12505H00, followed by -2 thru -15 or -20, followed by P.

Cat. No. 12505W00, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12505W90, follow by -2 thru -15, follow by P, follow by A thru Z or 1 thru 9, follow by -A thru -Z or -1 thru -9, follow by -A thru -Z or -1 thru -9, follow by A thru Z or 1 thru 9, follow by -A thru -Z, follow by A thru Z.

Cat. No. 12541H, followed by -2x, followed by 1 thru 20, followed by P.

Cat. No. 12543H, followed by -2 thru -20, followed by P.

Cat. No. 12547H00, followed by -3 thru -8, followed by P.

Cat. No. 13502W90, followed by -2P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 13962H00, 13962W00 and 13962W90, followed by -2P thru -10P, followed by A thru Z, followed by -A thru -Z, or -0 thru -9, followed by -A thru -Z, or -0 thru -9.

Cat. No. 22001H, followed by -2 thru -16, followed by P.

Cat. No. 22501H, followed by -2 thru -14, followed by P.

Cat. Nos. 10500H and 10500W, followed by -41 or -51, followed by P.

Cat. Nos. 11001H and 11001W, followed by -30, followed by P.

Cat. Nos. 11002H and 11002W, followed by -2 thru -20, followed by P.

Cat. Nos. 11003H and 11003W, followed by -2 thru -30, followed by P.

Cat. Nos. 11005H and 11005W, followed by -2X, followed by 2 thru 25, followed by P.

Cat. Nos. 11251H and 11251W, followed by -2 thru -15, followed by P.

Cat. Nos. 11254H00, 12006H, 12006W, 12504H and 12504W, followed by -2 thru -15, followed by P.

Cat. Nos. 11255H, 11255W, 11256H and 11256W, followed by -2 thru -30, followed by P.

Cat. Nos. 11257H, follow by -4 thru -15, followed by PL.

Cat. Nos. 11257W, 12503H00 and 12503W00, follow by -2 thru -15, followed by P.

Cat. Nos. 11501H and 11501W, followed by -2 thru -13, followed by P.

Cat. Nos. 11501H00 and 11501W00, followed by -14 or -15, followed by P.

Cat. Nos. 12001H and 12001W, followed by -2 thru -16, followed by P.

Cat. Nos. 12002H and 12002W, followed by -2x, followed by 2 thru 15, followed by P.

Cat. Nos. 12004H, 12004W and 12005W, follow by -2 thru -16, followed by P.

Cat. Nos. 12005H, follow by -2 thru -16, followed by PL.

Cat. Nos. 12501H and 12501W, followed by -2 thru -16, followed by P.

Cat. Nos. 12502H and 12502W, followed by -2 thru -15, followed by P.

Cat. Nos. 50801H and 50801W, follow by -2 thru -24, followed by P.

Cat. Nos. 51274H-7P and 51275H-7P.

Marking: Company name and model designation on the device or carton.

Last Updated on 2014-04-25

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Nylon 66 UL 94V-0 Natural color housing

SGS Job No. : CP19-049304 - SZ
 Tested Sample Info. : Nylon 66 UL 94V-0 Natural color housing
 Client Ref. Info. : PLEASE SEE REMARK
 Date of Sample Received : 05 Sep 2019
 Testing Period : 05 Sep 2019 - 17 Sep 2019
 Test Requested : Selected test(s) as requested by client.
 Test Method : Please refer to next page(s).
 Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS
Elementary Analysis	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
Red Phosphor	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Phthalate	See Results
Phthalate(s)	See Results
European Regulation POPs (EU) 2019/1021- Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	PASS
PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)	See Results



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Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Jessie Li

Jessie Li
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-175989.003	White material

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-004-01, with reference to US EPA Method 3052:1996), analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	003
Antimony (Sb)	mg/kg	10	ND
Tin (Sn)	mg/kg	5	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : SGS In-house method (GZTC CHEM-TOP-065, with reference to US EPA Method 3540C:1996), analysis was performed by GC-MS&HPLC-MS.

Test Item(s)	Unit	MDL	003
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Red Phosphor



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Test Method : SGS In-house method (GZTC CHEM-TOP-215-01), analysis was performed by PY-GC/MS/ICP-OES.

Test Item(s)	Unit	MDL	003
Red phosphorus	mg/kg	500	ND

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Acenaphthylene(ANY)	208-96-8	mg/kg	0.1	ND
Acenaphthene(ANA)	83-32-9	mg/kg	0.1	ND
Fluorene(FLU)	86-73-7	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 7 PAHs Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	-	mg/kg	-	ND
Sum of 18 PAHs	-	mg/kg	-	ND



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AFPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene Mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene, phenanthrene, pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

Hexabromocyclododecane (HBCDD)

Test Method : SGS in house method (GZTC CHEM-TOP-073, with reference to US EPA Method 3550C: 2007), analysis was performed by GC-MS.

Test Item(s)

Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)

Unit MDL 003
mg/kg 10 ND



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Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%(w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%(w/w)	0.003	ND
Di(2-ethylhexyl)adipate (DEHA)	103-23-1	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%(w/w)	0.003	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND
Diisooctyl Phthalate (DIOP)	27554-26-3	%(w/w)	0.010	ND
Dipropyl Phthalate (DPrP)	131-16-8	%(w/w)	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%(w/w)	0.003	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	%(w/w)	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%(w/w)	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%(w/w)	0.003	ND
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	%(w/w)	0.01	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.01	ND
Di-n-heptyl Phthalate (DnHpP)	3648-21-3	%(w/w)	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%(w/w)	0.003	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(w/w)	0.003	ND

Notes :

(1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) No2018/2005 amending Annex XVII of REACH Regulation (EC) No 1907/2006:

i) Shall not be used as substances or in mixtures, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.

ii) Shall not be placed on the market in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.



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In addition, DIBP shall not be placed on the market after 7 July 2020 in toys or childcare articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material.

iii) shall not be placed on the market after 7 July 2020 in articles, individually or in any combination of DBP, BBP, DEHP & DIBP, in concentrations equal to or greater than 0.1 % by weight of the plasticised material in the articles.

Please refer to Regulation (EU) No 2018/2005 to get more detail information.

(2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information.

Phthalate(s)

Test Method : With reference to SGS in house method (SGS-CCL-TOP-042-41) , analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Phthalic acid, mono-2-ethylhexyl ester(MEHP)	4376-20-9	%(w/w)	0.003	ND

European Regulation POPs (EU) 2019/1021– Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS / GC-ECD.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	1500	mg/kg	50	ND
Comment				PASS
Alkanes C14-C17, chloro (medium -chain chlorinated paraffins) (MCCPs)	-	mg/kg	50	ND

PFOA & PFOS (Perfluorooctanoic acid & Perfluorooctane sulfonates)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS / GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA)	335-67-1	mg/kg	0.01	ND
Perfluorooctane Sulfonates (PFOS)^		mg/kg	0.01	ND



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Notes :

(1) ^: PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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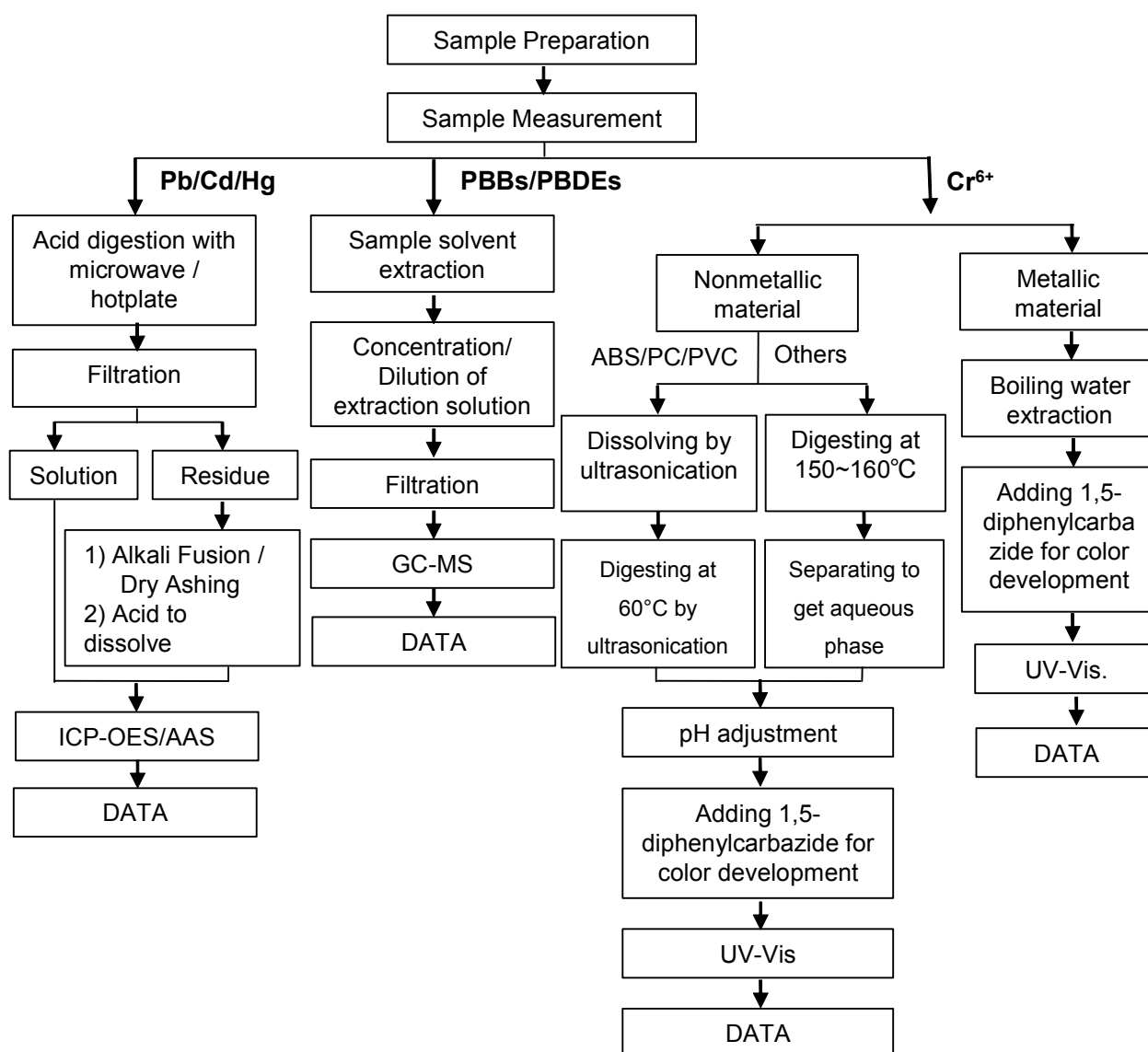
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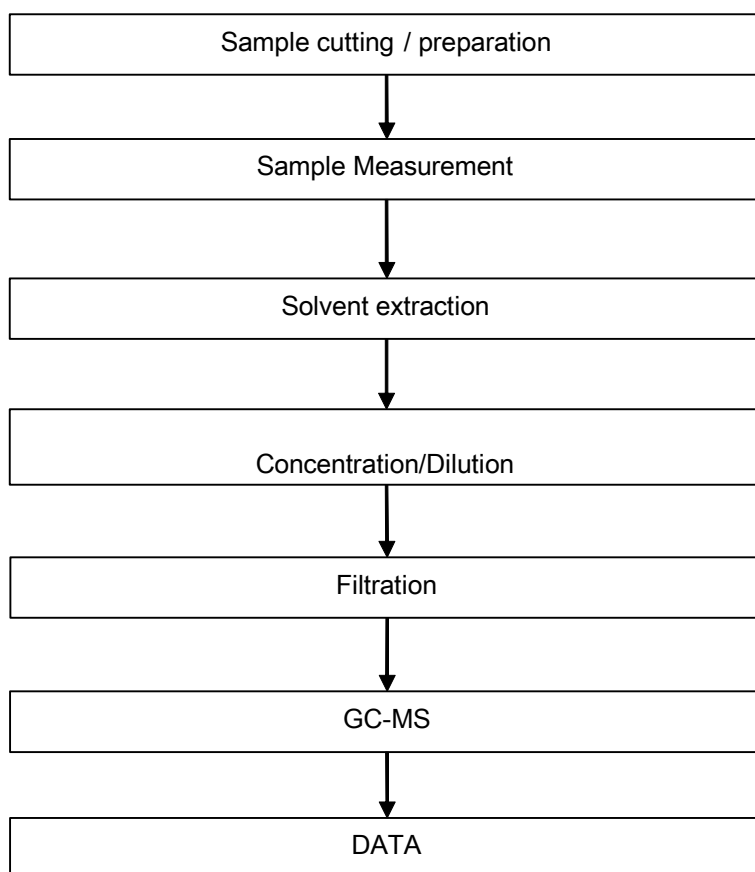
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



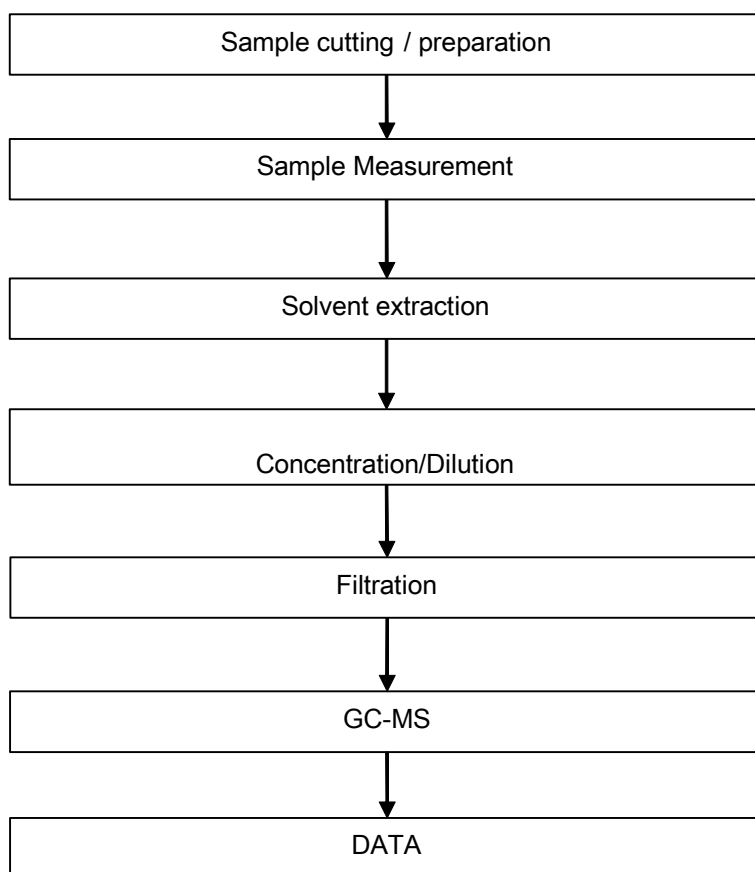
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Phthalates Testing Flow Chart



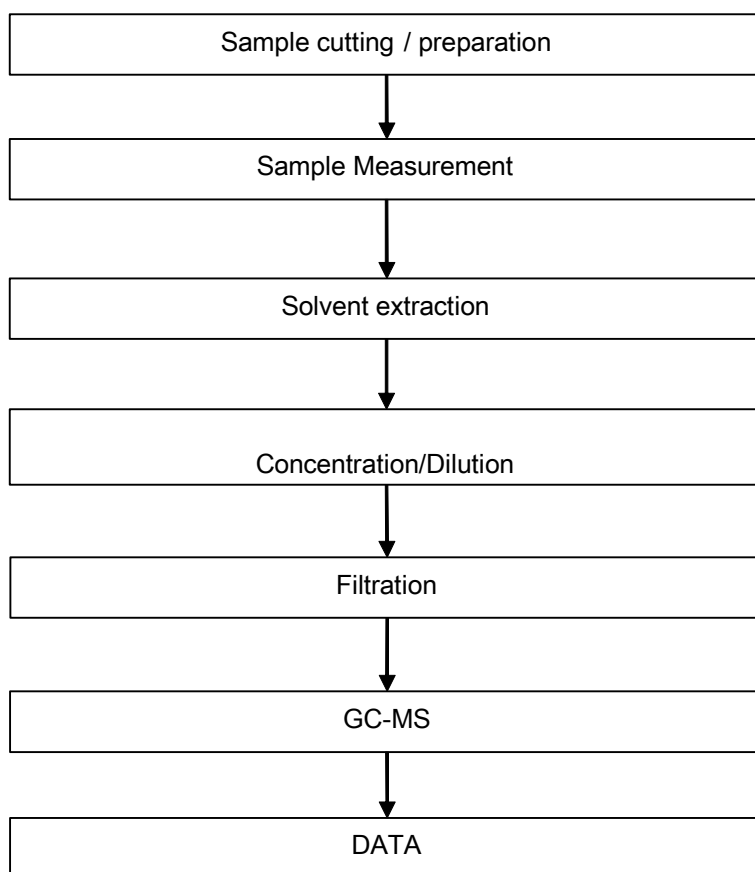
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HBCDD Testing Flow Chart



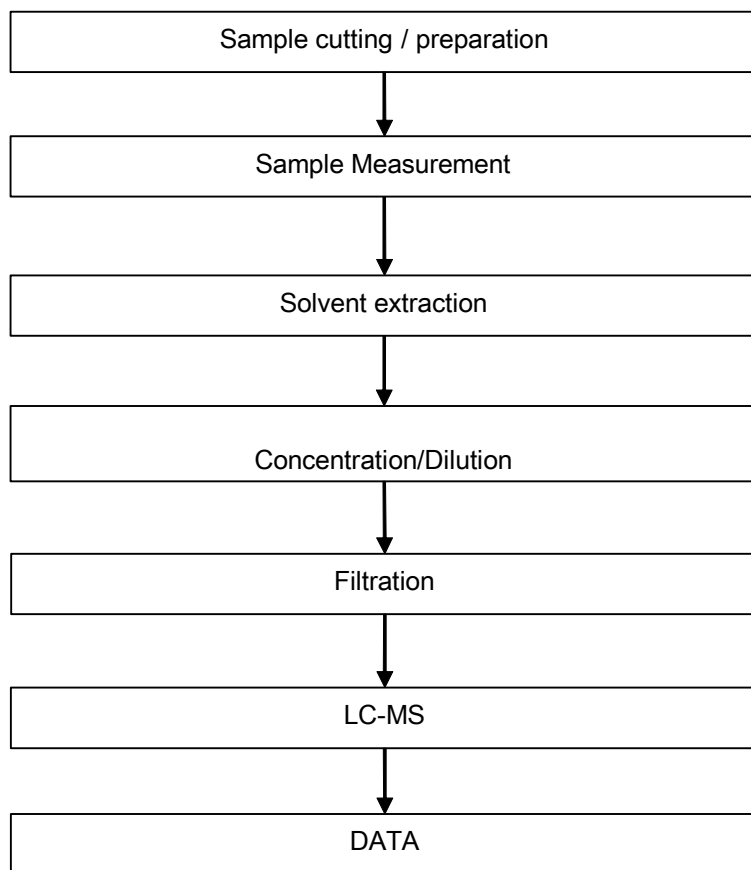
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PAHs Testing Flow Chart



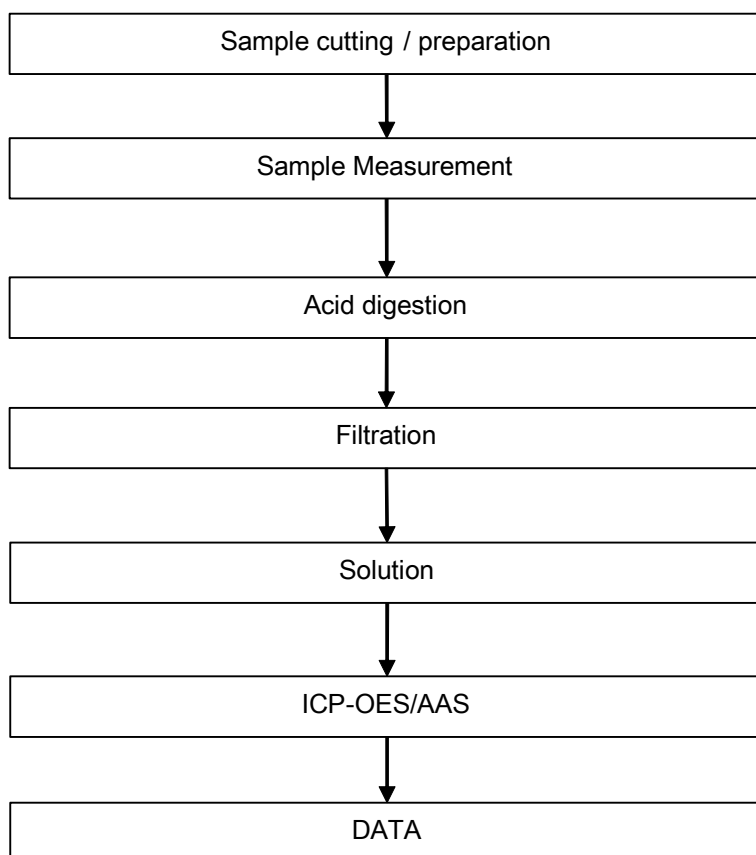
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PFOA / PFOS Testing Flow Chart



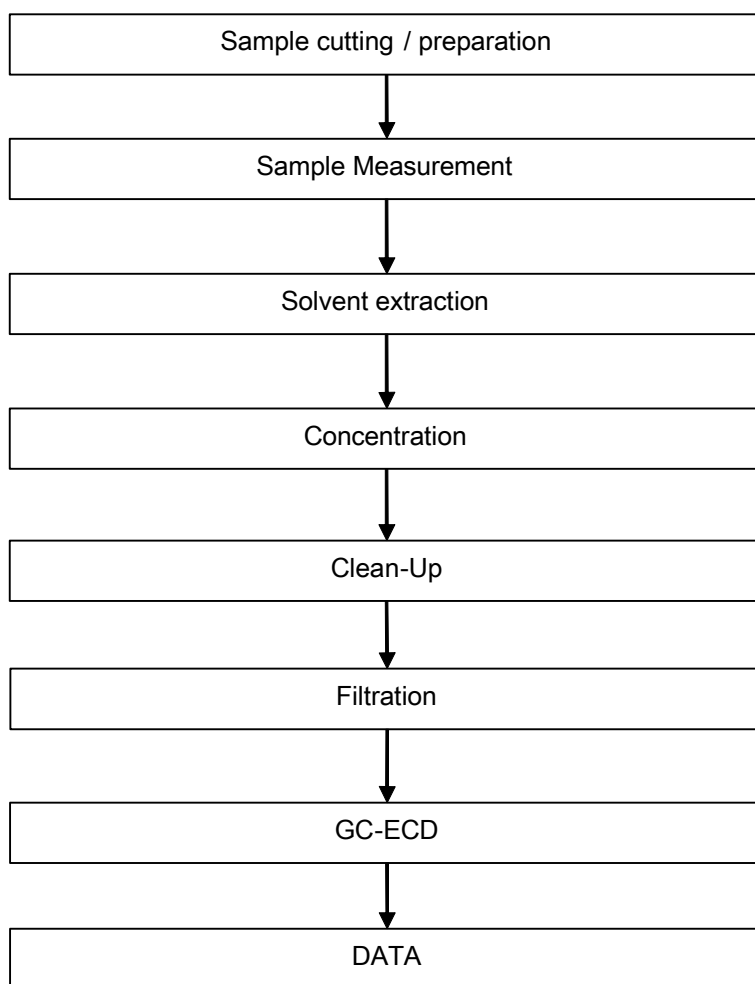
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Elementary Testing Flow Chart



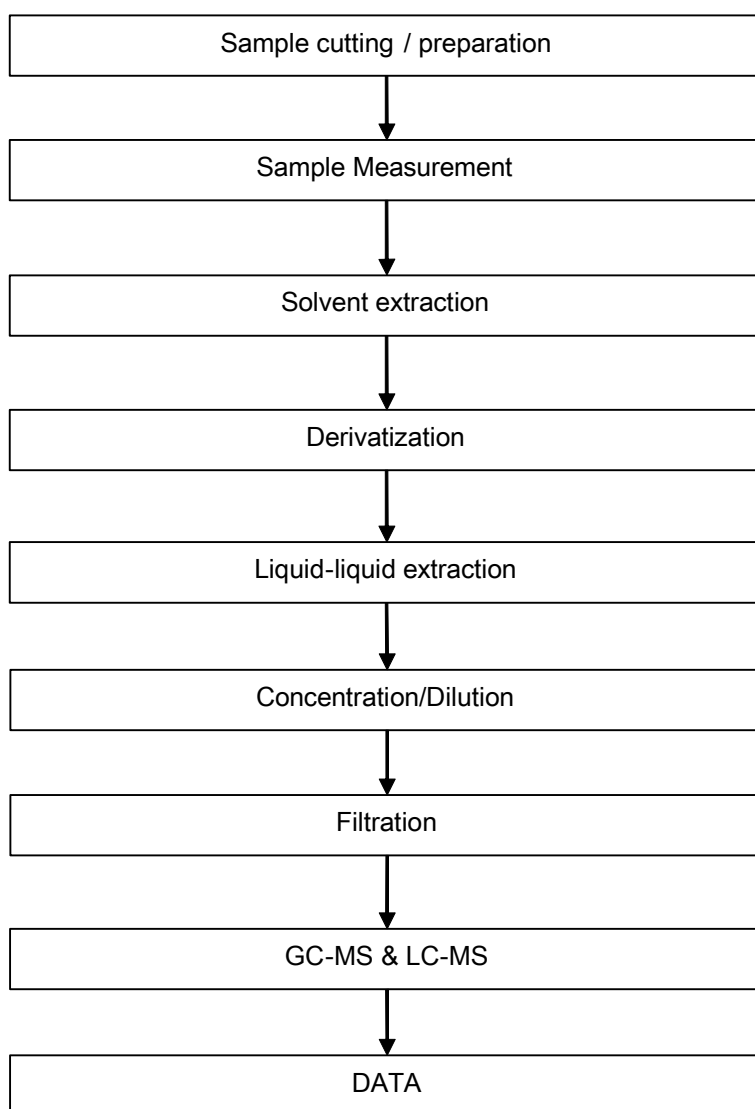
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SCCP/MCCP/LCCP Testing Flow Chart



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TBBP-A Testing Flow Chart



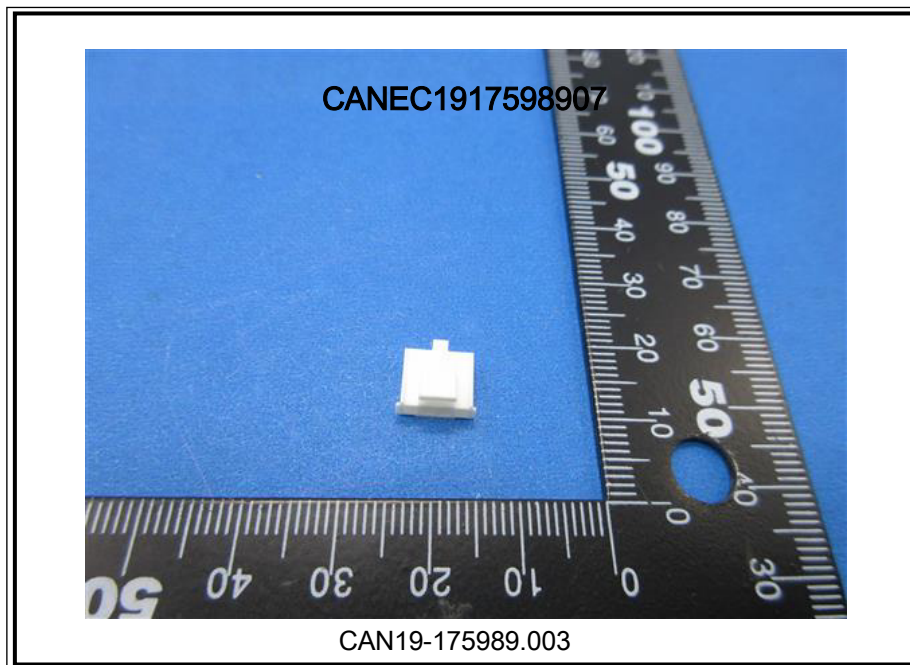
Test Report

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



Test Report

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Date: 13 Nov 2019

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SHENGLAN TECHNOLOGY CO.,LTD.

NO.4HECING ROAD SHATOU SOUTHERN DISTRICT CHANGAN TOWN DONGGUAN CITY GUANGDONG PROVINCE 523863 CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Phosphor copper nickel plating tin-plated terminal

SGS Job No. : CP19-059002 - SZ
 Model No. : 12001
 Client Ref. Info. : PLEASE SEE REMARK
 Date of Sample Received : 04 Nov 2019
 Testing Period : 04 Nov 2019 - 12 Nov 2019
 Test Requested : Selected test(s) as requested by client.
 Test Method : Please refer to next page(s).
 Test Results : Please refer to next page(s).
 Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
 SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie
 Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
 Guangzhou Branch Testing Center Chemical Laboratory.

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-216501.006	Silvery metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	006
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	9
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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Elementary Analysis

Test Method : SGS In-house method (GZTC CHEM-TOP-009-01, with reference to US EPA Method 3050B:1996), analysis was performed by ICP-OES.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>006</u>
Beryllium (Be)	mg/kg	5	ND

Perfluorooctanoic acid (PFOA) & Perfluorooctane sulfonates (PFOS)

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>006</u>
Perfluorooctanoic acid (PFOA)	335-67-1	µg/m ²	1.0	ND
Perfluorooctane Sulfonates (PFOS)^	-	µg/m ²	1.0	ND

Notes :

^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamide, N-Ethylperfluorooctane sulfonamide, N-Methylperfluorooctane sulfonamidoethanol and N-Ethylperfluorooctane sulfonamidoethanol.



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Phosphor copper nickel plating tin-plated pin needle



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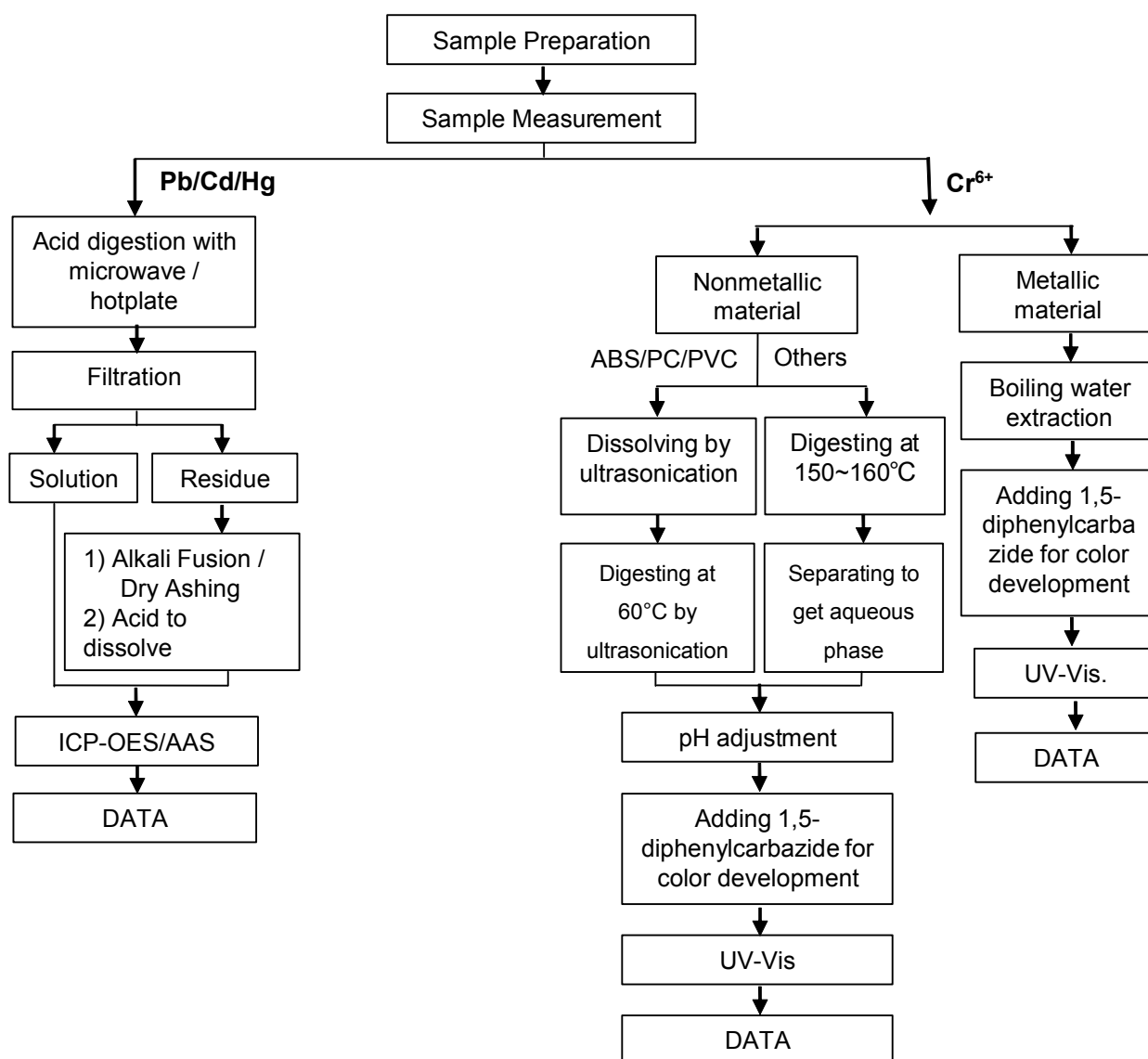
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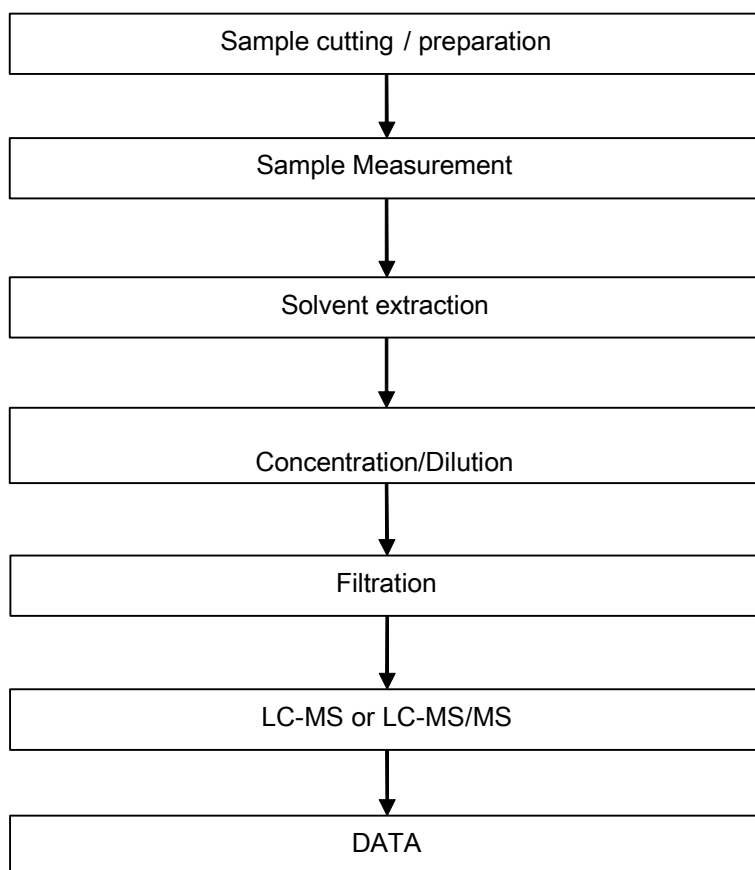
Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



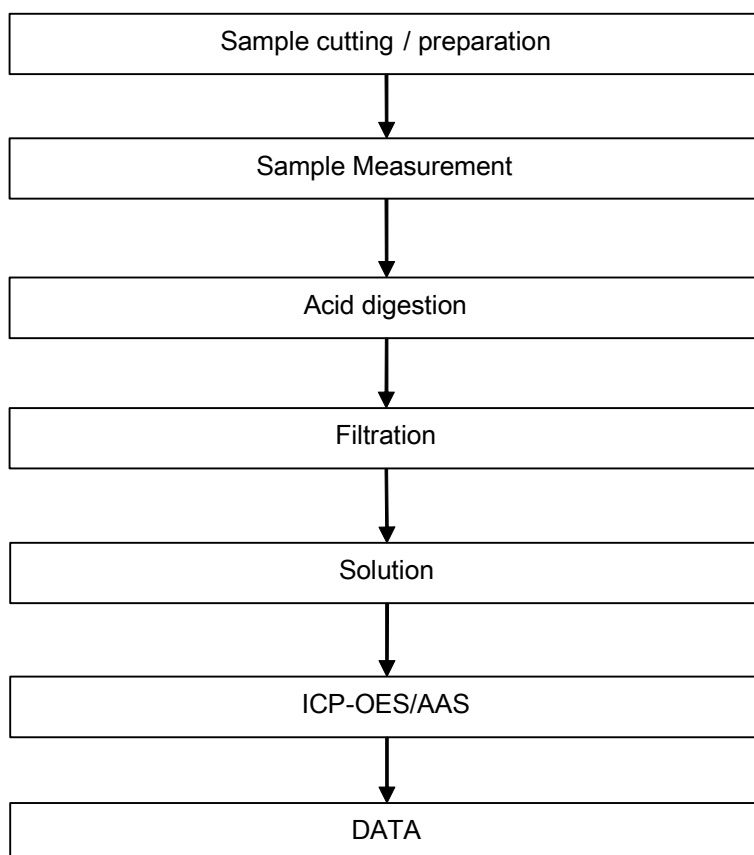
ATTACHMENTS

PFOA / PFOS Testing Flow Chart



ATTACHMENTS

Elementary Testing Flow Chart



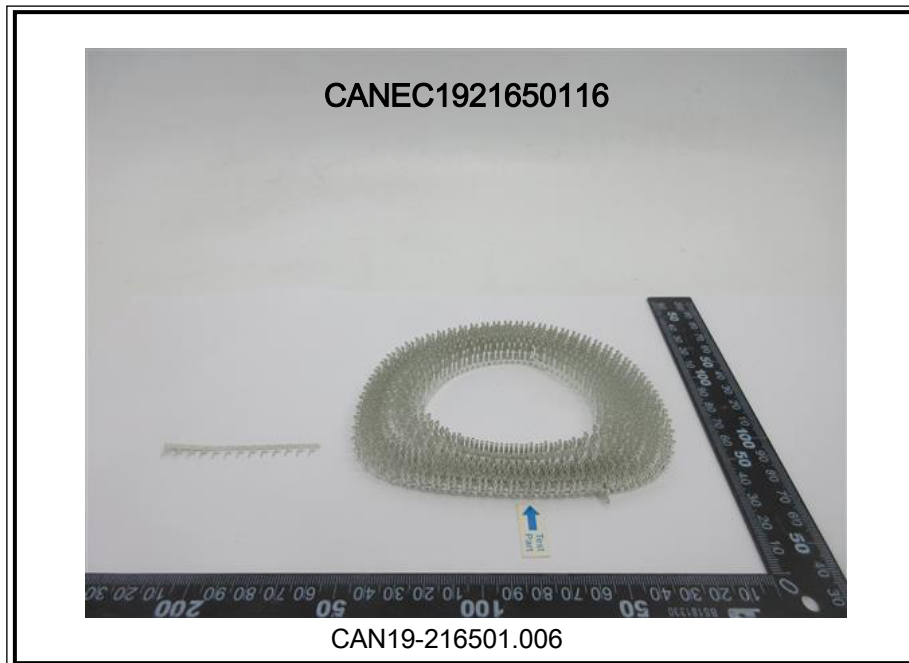
Test Report

No. CANEC1921650116

Date: 13 Nov 2019

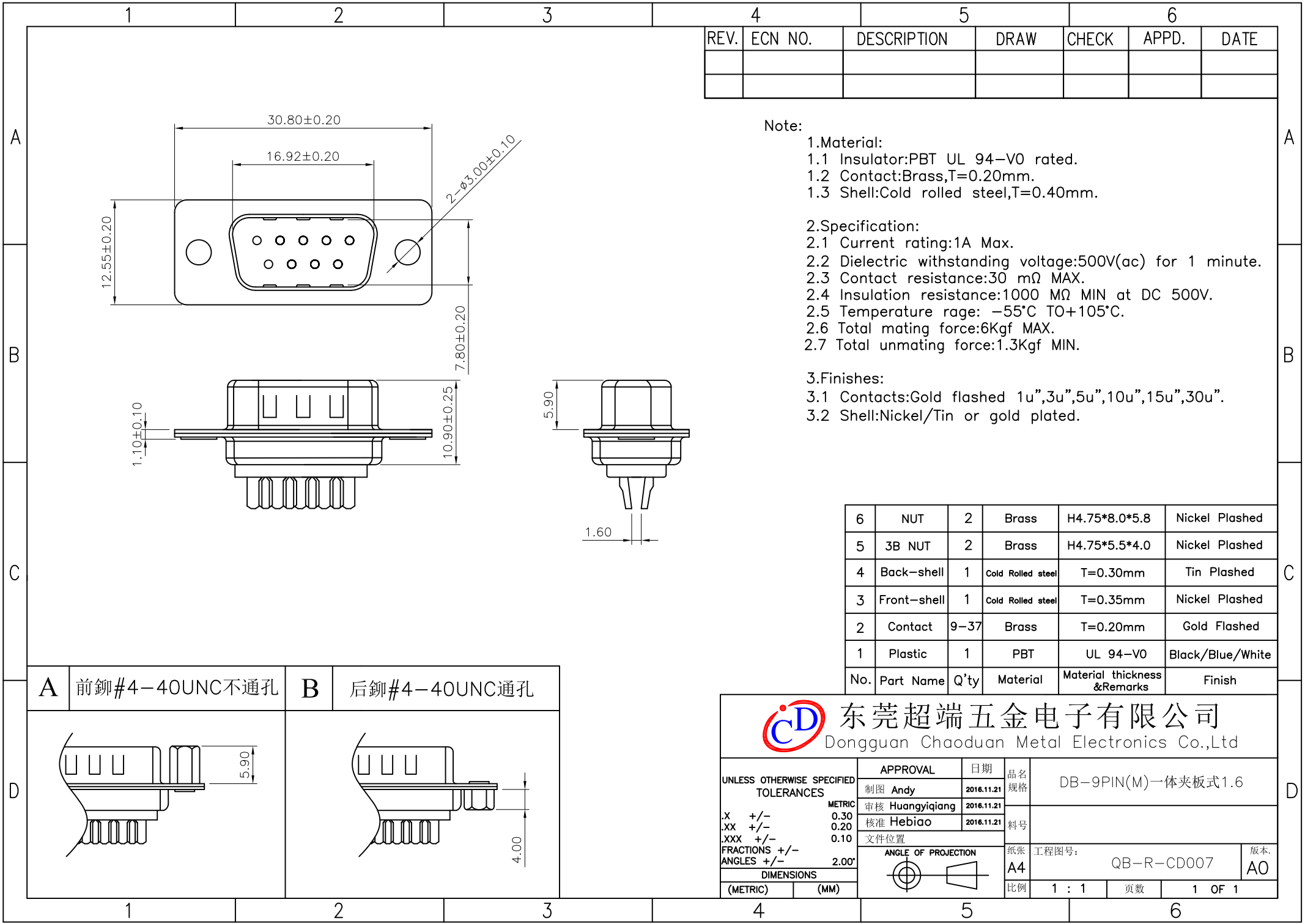
Page 8 of 8

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



REV.	ECN NO.	DESCRIPTION	DRAW	CHECK	APPD.	DATE

Note:

1.Material:

1.1 Insulator:PBT UL 94-V0 rated.

1.2 Contact:Brass,T=0.20mm.

1.3 Shell:Cold rolled steel,T=0.40mm.

2.Specification:

2.1 Current rating:1A Max.

2.2 Dielectric withstanding voltage:500V(ac) for 1 minute.

2.3 Contact resistance:30 mΩ MAX.

2.4 Insulation resistance:1000 MΩ MIN at DC 500V.

2.5 Temperature rage: -55°C TO+105°C.

2.6 Total mating force:6Kgf MAX.


2.7 Total unmating force:1.3Kgf MIN.

3.Finishes:

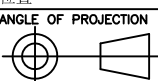
3.1 Contacts:Gold flashed 1u",3u",5u",10u",15u",30u".

3.2 Shell:Nickel/Tin or gold plated.

6	NUT	2	Brass	H4.75*8.0*5.8	Nickel Plashed
5	3B NUT	2	Brass	H4.75*5.5*4.0	Nickel Plashed
4	Back-shell	1	Cold Rolled steel	T=0.30mm	Tin Plashed
3	Front-shell	1	Cold Rolled steel	T=0.35mm	Nickel Plashed
2	Contact	9-37	Brass	T=0.20mm	Gold Flashed
1	Plastic	1	PBT	UL 94-V0	Black/Blue/White
No.	Part Name	Q'ty	Material	Material thickness &Remarks	Finish



东莞超端五金电子有限公司
Dongguan Chaoduan Metal Electronics Co.,Ltd

UNLESS OTHERWISE SPECIFIED TOLERANCES	APPROVAL	日期	品名	DB-9PIN(M)一体夹板式1.6	
METRIC	制图 Andy	2016.11.21	规格		
.X +/- 0.30	审核 Huangyiqiang	2016.11.21	料号		
.XX +/- 0.20	核准 Hebiao	2016.11.21	文件位置		
.XXX +/- 0.10	文件位置		纸张	工程图号: QB-R-CD007	
FRACTIONS +/-	ANGLE OF PROJECTION		A4	版本: AO	
ANGLES +/- 2.00'			比例	1 : 1	页数 1 OF 1
DIMENSIONS					
(METRIC)	(MM)				

**QMFZ2.E361519**
Plastics - Component[Page Bottom](#)**Plastics - Component**[See General Information for Plastics - Component](#)**DONGGUAN BUNCH PLASTICS TECHNOLOGY CO LTD****E361519**

Langzhou Industrial Zone

No2 Rd Changping Town

Dongguan, Guangdong 523589 CHINA

		Min.		H	H	R T I		H	D	
		Thk	Flame	W	A	Elec	Mech	V	4	C
Material Dsg	Color	mm	Class	I	I		Imp Str	R	5	I
Polybutylene Terephthalate (PBT), glass reinforced, furnished as pellets.										
F530-15	NC, BK	1.0	V-0	-	-	75	75 75	-	-	-
		3.7	V-0	-	-	75	75 75			
Polybutylene Terephthalate (PBT), furnished as pieces.										
PBTVO+GF 6830-15	NC, WT, BK	1.6	V-0	-	-	75	75 75	-	-	-
	ALL	3.0	V-0	-	-	75	75 75			

Markings: Company name and material designation on container, wrapper or finished part.

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Test Report

No. CANEC1900481901

Date: 15 Jan 2019

Page 1 of 4

FOSHAN SHUNDA ZIHE TRADE CO.,LTD

LUZHOU INDUSTRIAL DEVELOPMENT ZONE,LECONG TOWN, SHUNDE DISTRICT,FOSHAN

The following sample(s) was/were submitted and identified on behalf of the clients as : SPCC

SGS Job No. : CP19-001207 - GZ

Client Ref. Info. : Used for:SPCD SPCE SPCEN

Date of Sample Received : 08 Jan 2019

Testing Period : 08 Jan 2019 - 14 Jan 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Zmguan

Zm guan
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1900481901

Date: 15 Jan 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-004819.001	Silver-grey metal

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



SGS-CSTC Shanghai Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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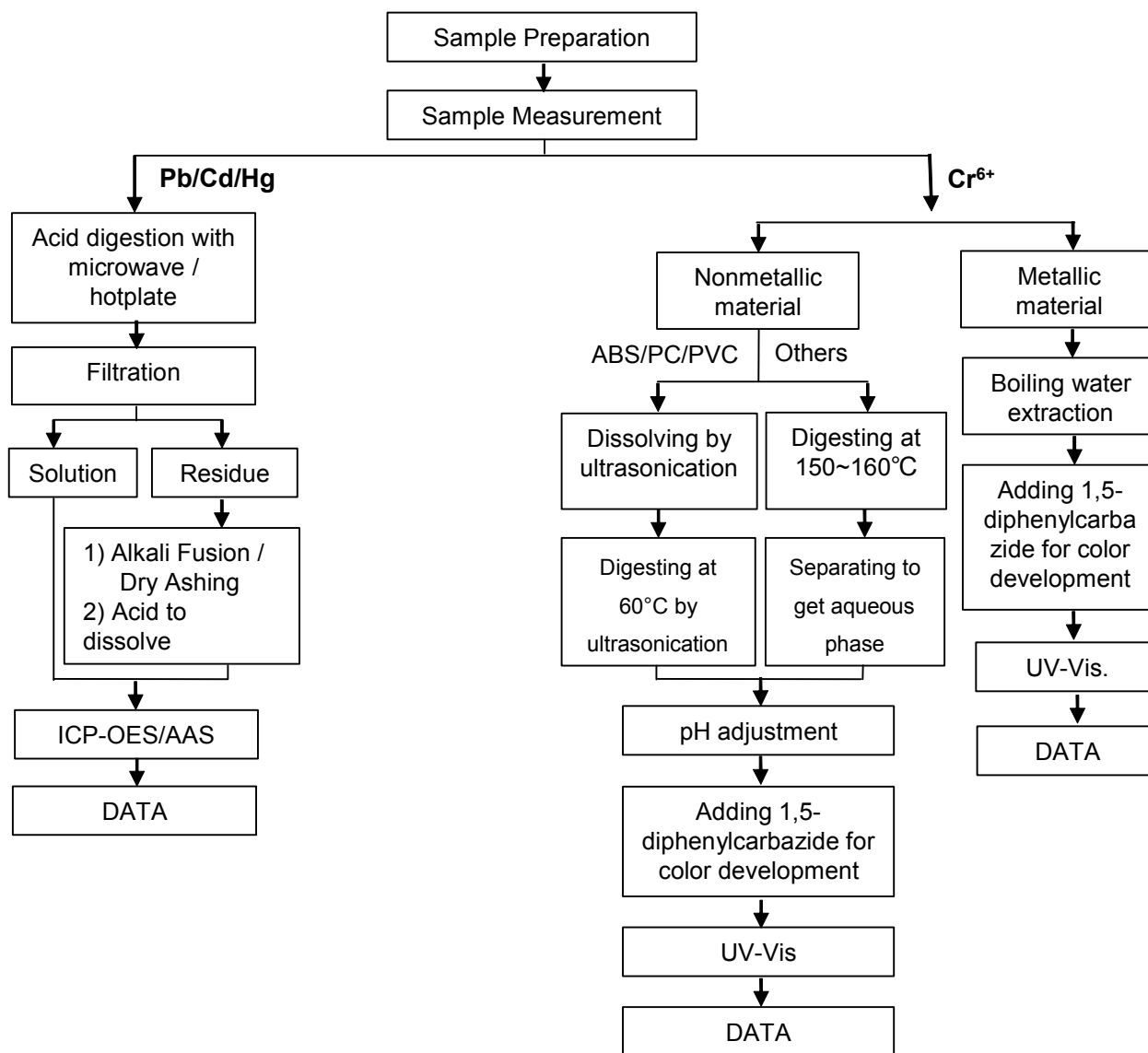
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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded).



Test Report

No. CANEC1900481901

Date: 15 Jan 2019

Page 4 of 4

Sample photo:



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*** End of Report ***

Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

Page 1 of 11

FOSHAN SHUNDA ZIHE TRADE CO.,LTD

LUZHOU INDUSTRIAL DEVELOPMENT ZONE,LECONG TOWN, SHUNDE DISTRICT,FOSHAN

The following sample(s) was/were submitted and identified on behalf of the clients as : SPCC

SGS Job No. : CP19-001207 - GZ

Client Ref. Info. : Used for:SPCD SPCE SPCEN

Date of Sample Received : 08 Jan 2019

Testing Period : 08 Jan 2019 - 14 Jan 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i)Sixty (60) inorganic substances and additional eleven (11) organic metallic substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jun 27, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Zm guan

Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

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Date: 15 Jan 2019

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-004819.001	Silver-grey metal

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, Analyzed by ICP-OES, UV-VIS.



Test Report (SVHC)

No. CANEC1900481903

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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.



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Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	Cobalt dichloride*	7646-79-9	0.005
I	2	Diarsenic pentaoxide*	1303-28-2	0.005
I	3	Diarsenic trioxide*	1327-53-3	0.005
I	4	Lead hydrogen arsenate*	7784-40-9	0.005
I	5	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	6	Triethyl arsenate*	15606-95-8	0.005
II	7	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	8	Lead chromate*	7758-97-6	0.005
II	9	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
III	10	Ammonium dichromate*	7789-09-5	0.005
III	11	Boric acid*	10043-35-3, 11113-50-1	0.005
III	12	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	13	Potassium chromate*	7789-00-6	0.005
III	14	Potassium dichromate*	7778-50-9	0.005
III	15	Sodium chromate*	7775-11-3	0.005
III	16	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
IV	17	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005
IV	18	Chromium trioxide*	1333-82-0	0.005



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Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
IV	19	Cobalt(II) carbonate*	513-79-1	0.005
IV	20	Cobalt(II) diacetate*	71-48-7	0.005
IV	21	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	22	Cobalt(II) sulphate*	10124-43-3	0.005
V	23	Strontium chromate*	7789-06-2	0.005
VI	24	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	25	Arsenic acid*	7778-39-4	0.005
VI	26	Calcium arsenate*	7778-44-1	0.005
VI	27	Dichromium tris(chromate) *	24613-89-6	0.005
VI	28	Lead diazide, Lead azide*	13424-46-9	0.005
VI	29	Lead dipicrate*	6477-64-1	0.005
VI	30	Lead styphnate*	15245-44-0	0.005
VI	31	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	32	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	33	Trilead diarsenate*	3687-31-8	0.005
VI	34	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	35	Diboron trioxide*	1303-86-2	0.005
VII	36	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VIII	37	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	38	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	39	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	40	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	41	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	42	Lead cyanamidate*	20837-86-9	0.005
VIII	43	Lead dinitrate*	10099-74-8	0.005
VIII	44	Lead monoxide*	1317-36-8	0.005
VIII	45	Lead oxide sulfate*	12036-76-9	0.005
VIII	46	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	47	Lead titanium trioxide*	12060-00-3	0.005
VIII	48	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	49	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	50	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	51	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	52	Silicic acid, lead salt*	11120-22-2	0.005
VIII	53	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	54	Tetraethyllead*	78-00-2	0.005
VIII	55	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	56	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005
VIII	57	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	58	Cadmium oxide*	1306-19-0	0.005
IX	59	Cadmium*	7440-43-9	0.005



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report (SVHC)

No. CANEC1900481903

Date: 15 Jan 2019

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
X	60	Cadmium sulphide*	1306-23-6	0.005
X	61	Lead di(acetate)*	301-04-2	0.005
XI	62	Cadmium chloride*	10108-64-2	0.005
XI	63	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	64	Sodium peroxometaborate*	7632-04-4	0.005
XII	65	Cadmium fluoride*	7790-79-6	0.005
XII	66	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XVIII	67	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	68	Cadmium carbonate*	513-78-0	0.005
XVIII	69	Cadmium hydroxide*	21041-95-2	0.005
XIX	70	Disodium octaborate*	12008-41-2	0.005
XIX	71	Lead*	7439-92-1	0.005



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Guangzhou Branch Testing Center Chemical Laboratory.

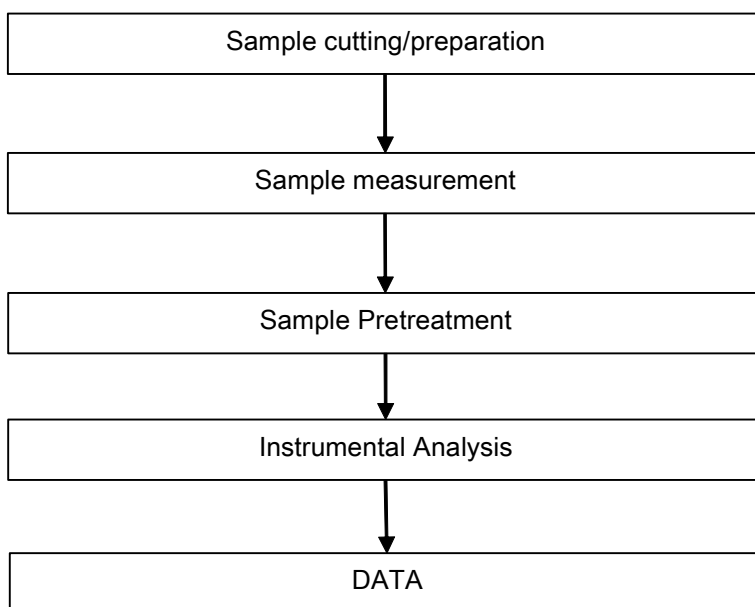
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SVHC Testing Flow Chart



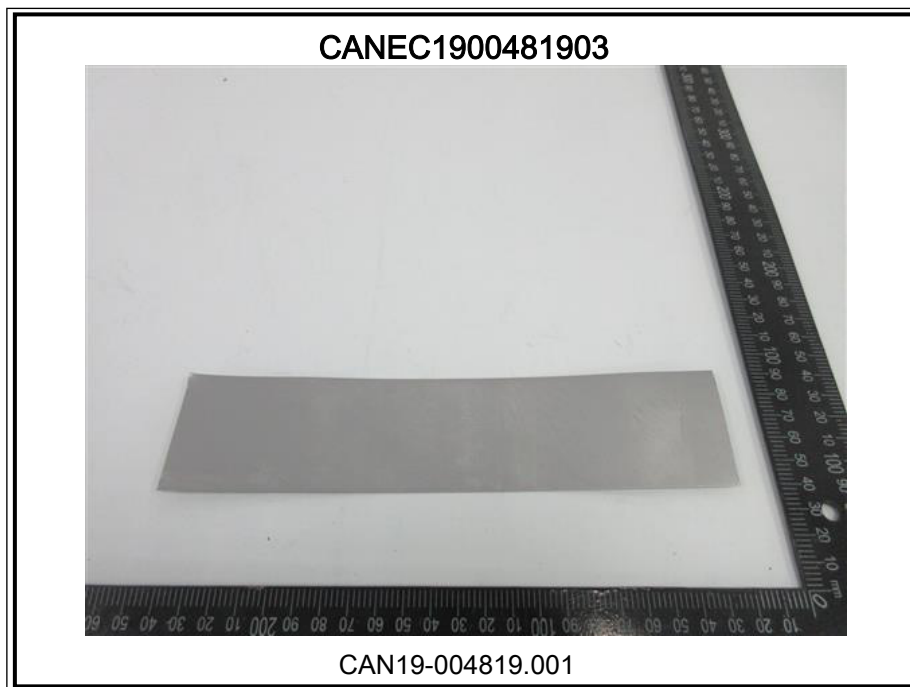
Test Report (SVHC)

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Sample photo:



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Test Report

No. SZXEC1900066305

Date: 16 Jan 2019

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SHENZHEN XIONG YUN TECHNOLOGY CO., LTD. (15 WORKSHOPS, XIONG YUN ELECTROPLATING)
FOURTH FLOOR, BUILDING B, MIAO YINGHUI INDUSTRIAL PARK, XIXIANG STREET, BAOAN DISTRICT,
SHENZHEN CITY.

The following sample(s) was/were submitted and identified on behalf of the clients as : METAL NICKEL
PLATING

SGS Job No. : RP19-000700 - SZ

Date of Sample Received : 11 Jan 2019

Testing Period : 11 Jan 2019 - 16 Jan 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead,
Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),
Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS
Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Tina

Tina Fan
Approved Signatory



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Test Report

No. SZXEC1900066305

Date: 16 Jan 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX19-000663.003	Silver-gray plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	65
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	003
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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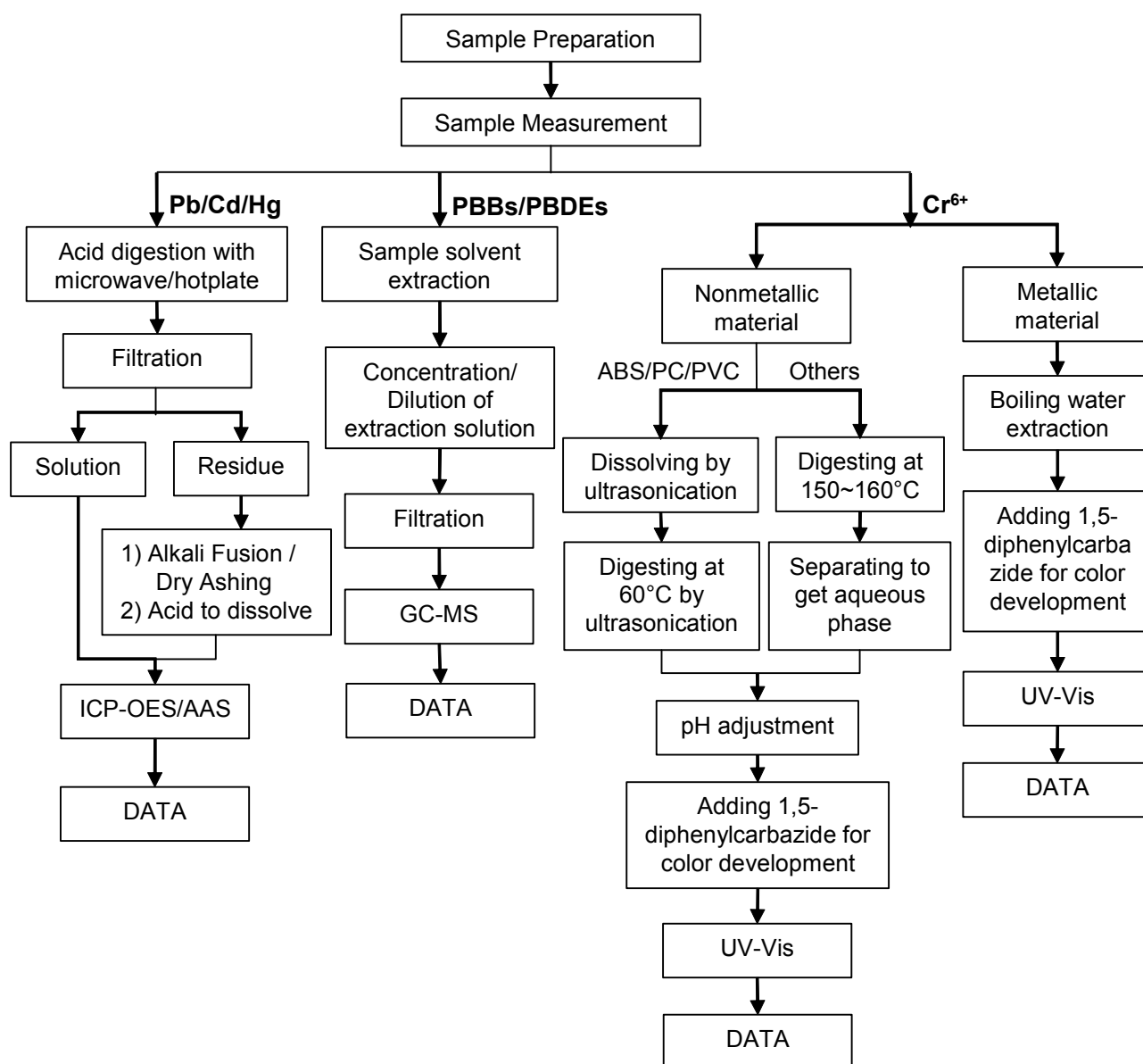
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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



Test Report

No. SZXEC1900066305

Date: 16 Jan 2019

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Sample photo:



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*** End of Report ***

Test Report

No. SZXEC1900066303

Date: 16 Jan 2019

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FOURTH FLOOR, BUILDING B, MIAO YINGHUI INDUSTRIAL PARK, XIXIANG STREET, BAOAN DISTRICT,
SHENZHEN CITY.

The following sample(s) was/were submitted and identified on behalf of the clients as : METAL GILDING

SGS Job No. : RP19-000700 - SZ

Date of Sample Received : 11 Jan 2019

Testing Period : 11 Jan 2019 - 16 Jan 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
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Tina

Tina Fan
Approved Signatory



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Test Report

No. SZXEC1900066303

Date: 16 Jan 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX19-000663.002	Silver-gray&golden plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	42
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. SZXEC1900066303

Date: 16 Jan 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl Phthalate (BBP)	1000	mg/kg	50	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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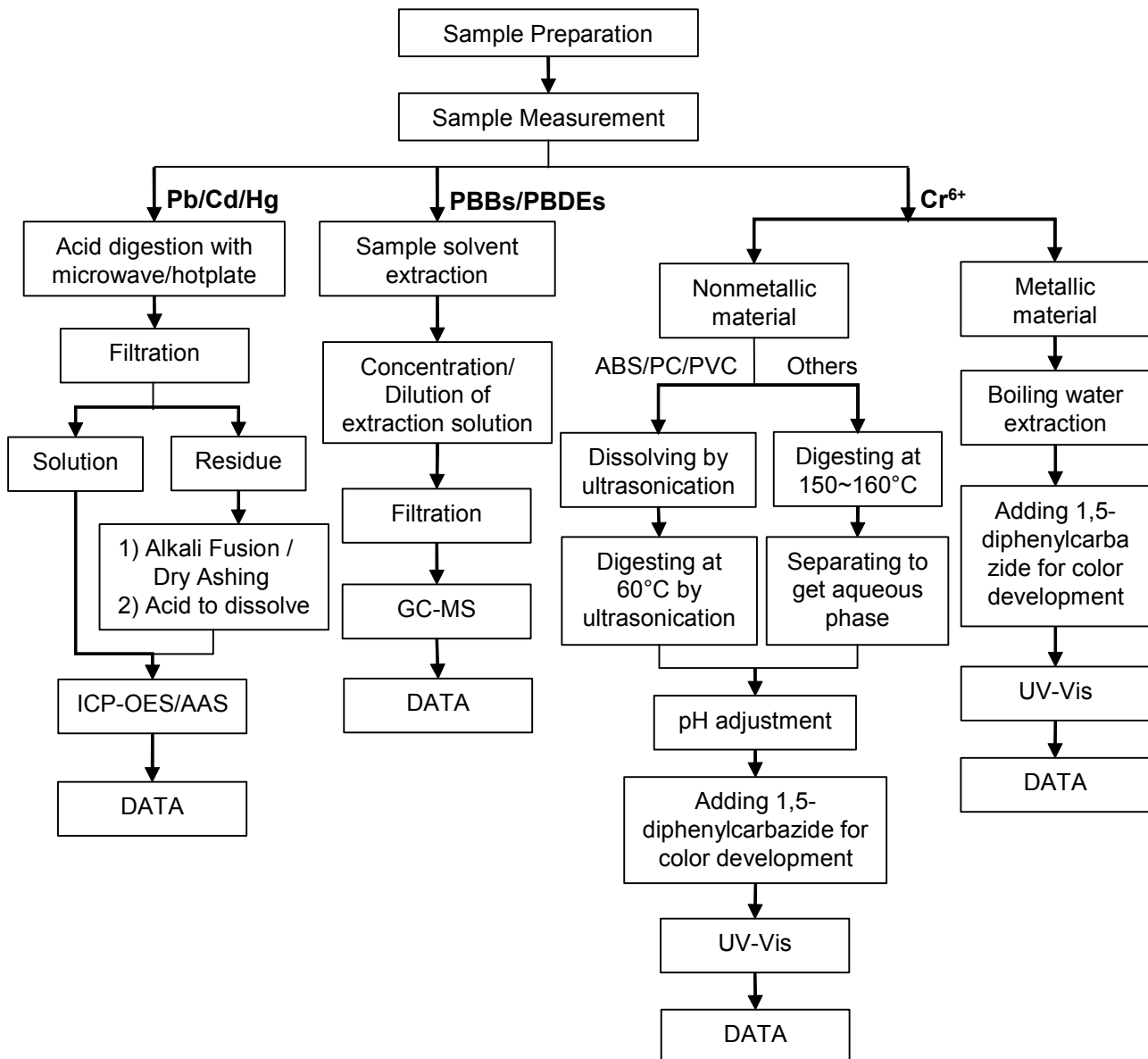
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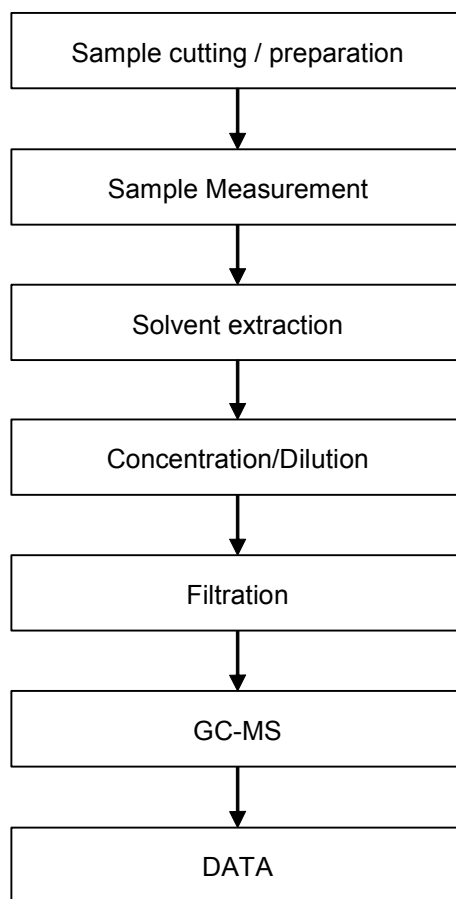
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



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Phthalates Testing Flow Chart



Test Report

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Sample photo:



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SHENZHEN XIONG YUN TECHNOLOGY CO., LTD. (15 WORKSHOPS, XIONG YUN ELECTROPLATING)
FOURTH FLOOR, BUILDING B, MIAO YINGHUI INDUSTRIAL PARK, XIXIANG STREET, BAOAN DISTRICT,
SHENZHEN CITY.

The following sample(s) was/were submitted and identified on behalf of the clients as : METAL TIN PLATING

SGS Job No. : RP19-000700 - SZ

Date of Sample Received : 11 Jan 2019

Testing Period : 11 Jan 2019 - 16 Jan 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Tina

Tina Fan
Approved Signatory



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Test Report

No. SZXEC1900066301

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX19-000663.001	Silvery plated metal

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	62
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
- b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
- c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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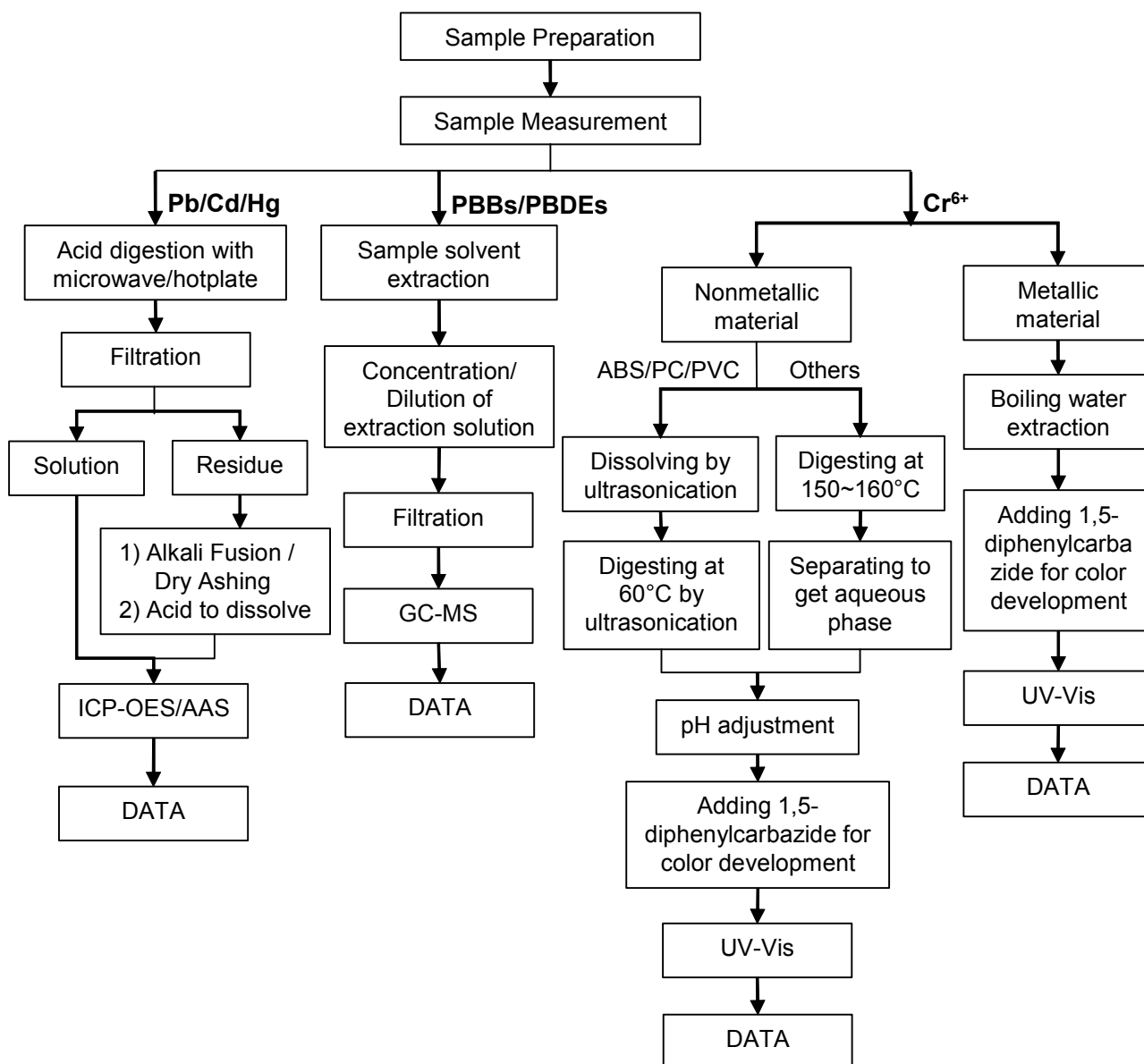
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



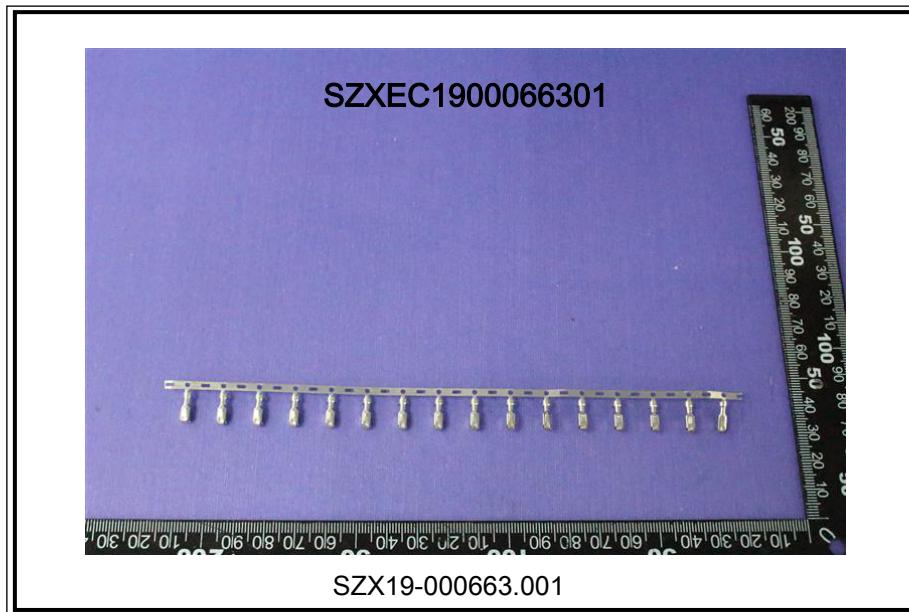
Test Report

No. SZXEC1900066301

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Sample photo:



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Test Report (SVHC)

No. CANEC1901586101

Date: 30 Jan 2019

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DONGGUAN BUNCH PLASTICS TECHNOLOGY CO.,LTD.
THE INDUSTRIAL ROAD TWO,LANGZHOU DISTRICT,CHANGPING TOWN,DONGGUAN CITY
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PBTVO+GF BK (BK NC BLUE GREEN RED GREY YELLOW) MIXTURE

SGS Job No. : CP19-004038 - GZ

Date of Sample Received : 23 Jan 2019

Testing Period : 23 Jan 2019 - 30 Jan 2019

Test Requested : As requested by client, SVHC screening is performed according to:
(i) Six (6) substances in the Public Consultation List of potential Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on, Sep 4, 2018 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the ruling of the Court of Justice of the European Union on the definition of an article under REACH, and the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the articles of the submitted sample.	PASS
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Jenny Jiang

Jenny Jiang
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-015861.001	Dk-green plastic

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-02, Analyzed by GC-MS and HPLC-DAD/MS.



Test Report (SVHC)

No. CANEC1901586101

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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



Test Report (SVHC)

No. CANEC1901586101

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit. All RL are based on homogenous material
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
NA^ = Upon further test verification on the specific detected element(s) of SVHC and also information provided from client, the possibility that the element(s) content originate from SVHC is very unlikely, even though their presence cannot be exclude entirely. It may be assumed that the detected element(s) have a non-SVHC source.



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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XX	1	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	2	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	3	Benzo[k]fluoranthene	207-08-9	0.050
XX	4	Fluoranthene	206-44-0	0.050
XX	5	Phenanthrene	85-01-8	0.050
XX	6	Pyrene	129-00-0	0.050



SGS-CSTC (Shanghai) Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory

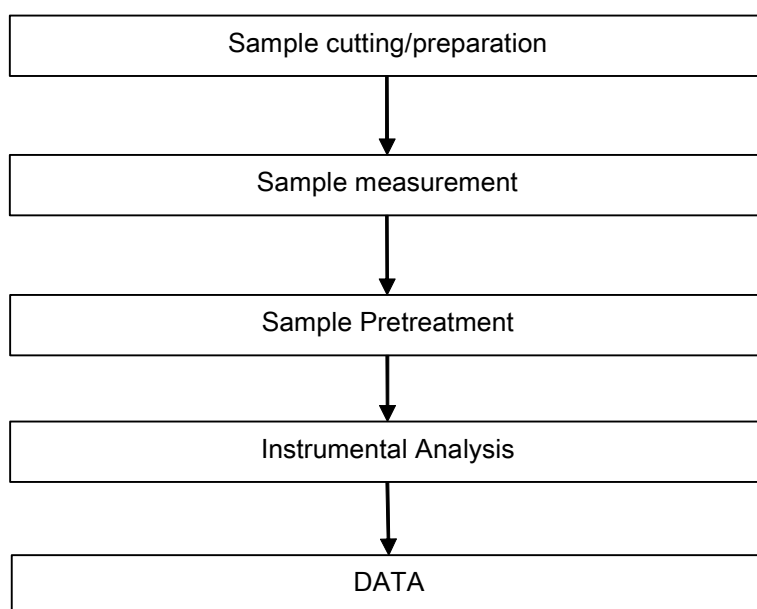
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ATTACHMENTS

SVHC Testing Flow Chart



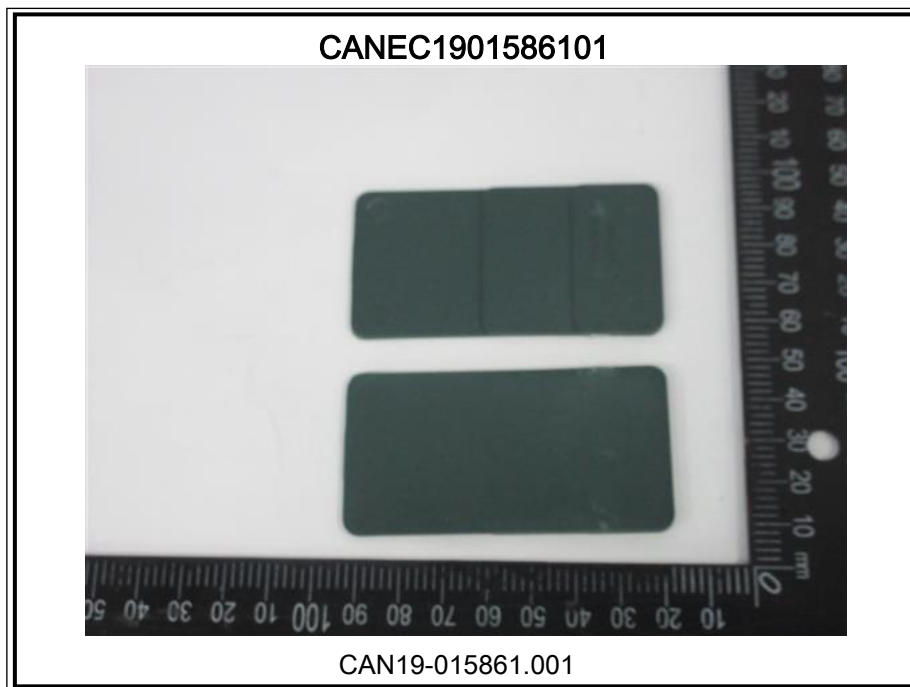
Test Report (SVHC)

No. CANEC1901586101

Date: 30 Jan 2019

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Sample photo:



SGS authenticate the photo on original report only

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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1900351602

Date: 10 Jan 2019

Page 1 of 6

DONGGUAN BUNCH PLASTICS TECHNOLOGY CO.,LTD.

THE INDUSTRIAL ROAD TWO,LANGZHOU DISTRICT,CHANGPING TOWN,DONGGUAN CITY
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PBTVO+GF BK (NC BK
BLUE GREEN RED GREY YELLOW) MIXTURE

SGS Job No. : CP19-000910 - GZ

Date of Sample Received : 07 Jan 2019

Testing Period : 07 Jan 2019 - 10 Jan 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



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Test Report

No. CANEC1900351602

Date: 10 Jan 2019

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-003516.002	Dk-green plastic sheet

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	16
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. CANEC1900351602

Date: 10 Jan 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25



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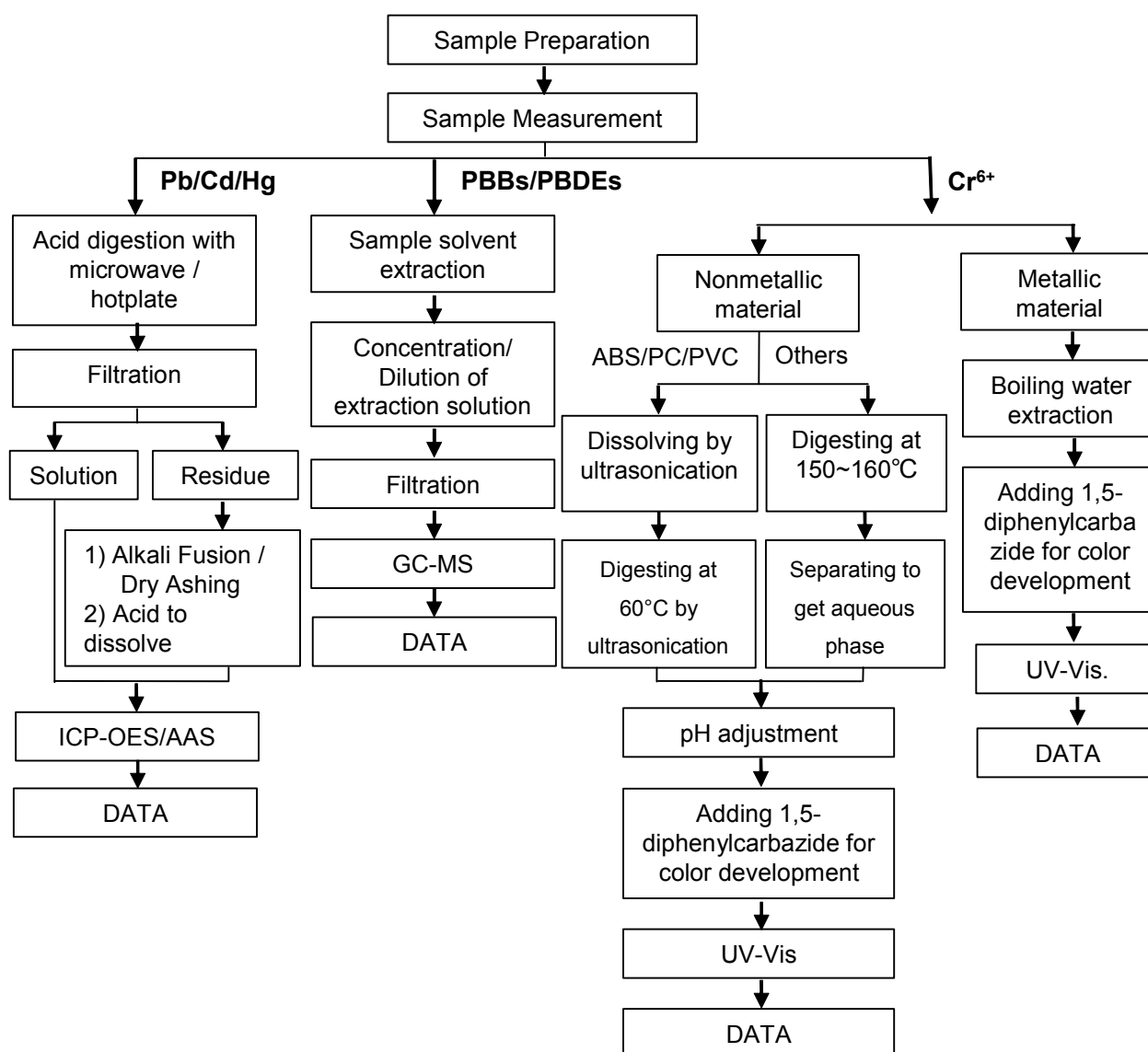
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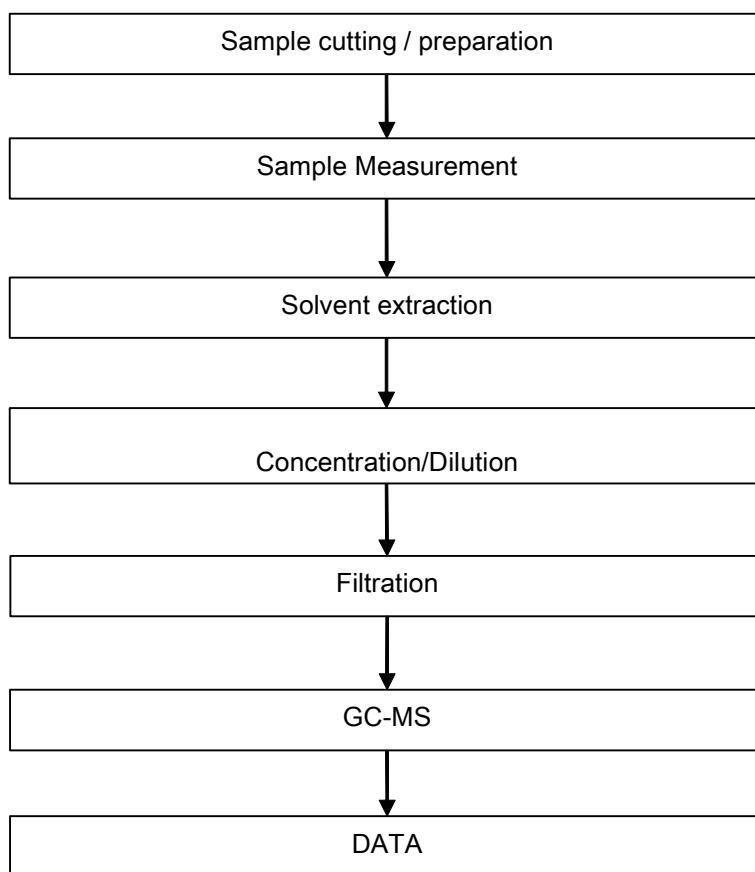
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



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Phthalates Testing Flow Chart



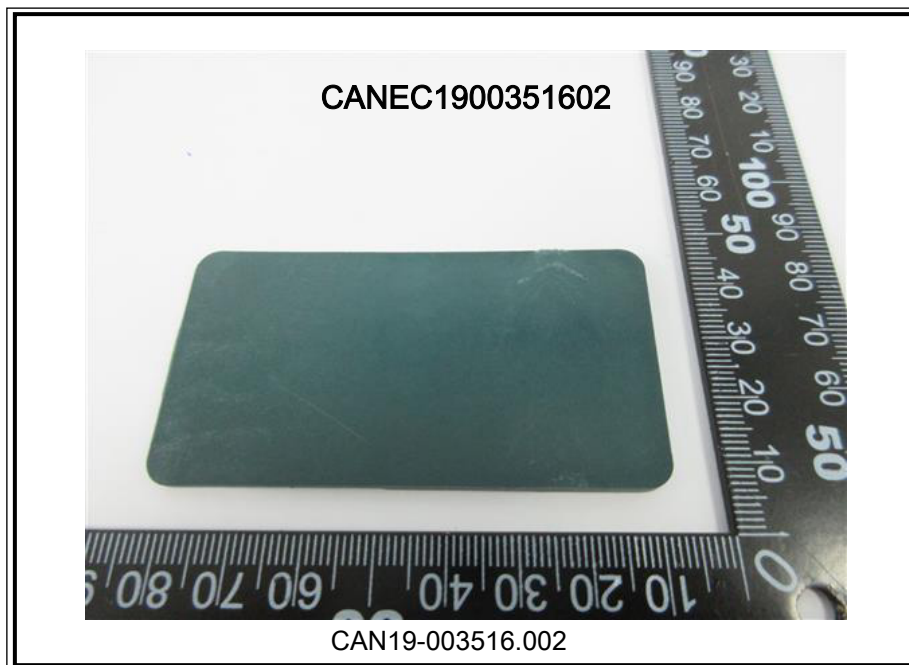
Test Report

No. CANEC1900351602

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Sample photo:



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Test Report (SVHC)

No. CANEC1910449305

Date: 10 Jun 2019

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DONGGUAN CITY DINGRONG METAL MATERIAL CO.,LTD.

BUILDING B, NIGU ROAD, SHA AO INDUSTRIAL ZONE, SHUTIAN COMMUNITY, HUMEN TOWN,

The following sample(s) was/were submitted and identified on behalf of the clients as : C2680

SGS Job No. : CP19-029132 - GZ

Date of Sample Received : 03 Jun 2019

Testing Period : 03 Jun 2019 - 10 Jun 2019

Test Requested : As requested by client, SVHC screening is performed according to:

- (i) One hundred and ninety seven (197) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 15, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
- (ii) Additional One (1) Substances of Very High Concern (SVHC) identified by the notification of WTO on Feb 7, 2019.
- (iii) Three (3) substances in the Public Consultation List of potential Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on Mar 13, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
----------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie

Approved Signatory



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Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report (SVHC)

No. CANEC1910449305

Date: 10 Jun 2019

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.
2. REACH obligation:
2.1 Concerning article(s):
Communication:
Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



Test Report (SVHC)

No. CANEC1910449305

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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-104493.001	Brassy metal sheet

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



Test Report (SVHC)

No. CANEC1910449305

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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
XIX	Lead*	7439-92-1	0.007	0.005
-	Other tested SVHC in candidate list	-	ND	-

Test Result: (Substances in the Consultation List of potential SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in consultation list	-	ND	-

Test Result:(Additional SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC	-	ND	-



Test Report (SVHC)

No. CANEC1910449305

Date: 10 Jun 2019

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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported.
Please refer to Appendix for the full list of tested SVHC.
 2. RL = Reporting Limit. All RL are based on homogenous material. ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
 3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
 - ** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
- For detail information, please refer to the SGS REACH website:
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
 5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
 6. Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
 7. ☆ CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
 8. § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
 9. Add. = Additional identified SVHC, / = Substances in the Consultation List of SVHC.



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report (SVHC)

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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) ^Δ	25637-99-4,3194-55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7,13149-00-3,1 4166-21-3	0.050
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2- [(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2- (2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2- (4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4- methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
Add.	198	4-tert-butylphenol (PTBP)	98-54-4	0.050
/	199	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	0.050
/	200	2-methoxyethyl acetate	110-49-6	0.050
/	201	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	0.050



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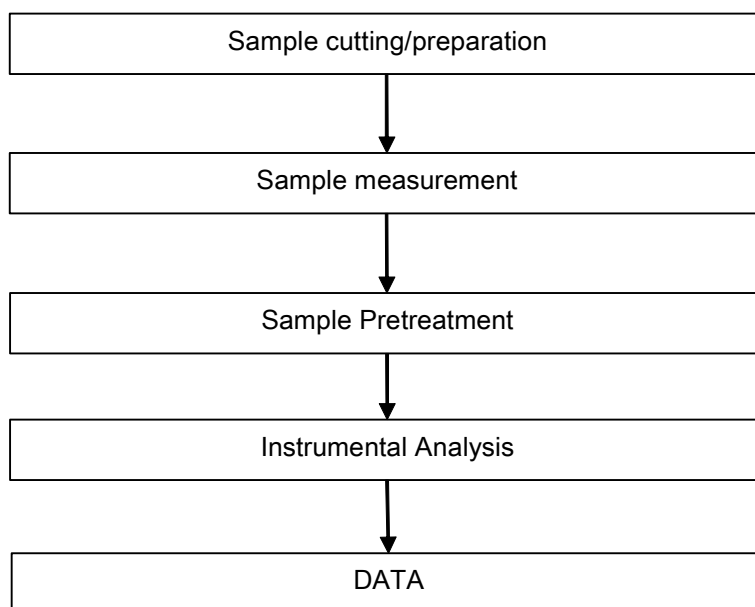
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SVHC Testing Flow Chart



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Sample photo:



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Test Report

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DONGGUAN CITY DINGRONG METAL MATERIAL CO.,LTD.

BUILDING B, NIGU ROAD, SHA AO INDUSTRIAL ZONE, SHUTIAN COMMUNITY, HUMEN TOWN,

The following sample(s) was/were submitted and identified on behalf of the clients as : C2680

SGS Job No. : CP19-029132 - GZ

Date of Sample Received : 03 Jun 2019

Testing Period : 03 Jun 2019 - 10 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Dongyu Xie

Dongyu Xie
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-104493.001	Brassy metal sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	64
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination
 Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.



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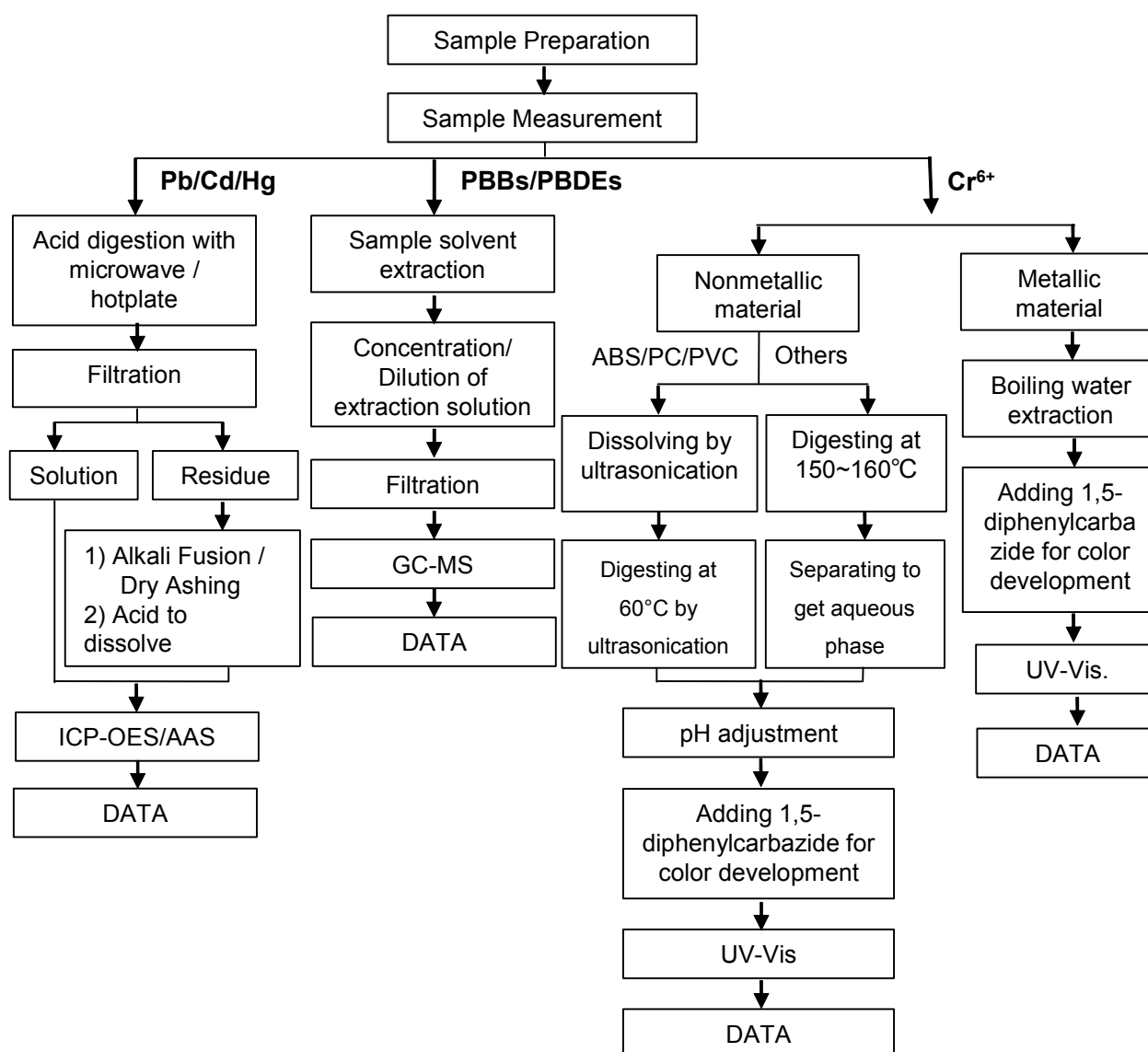
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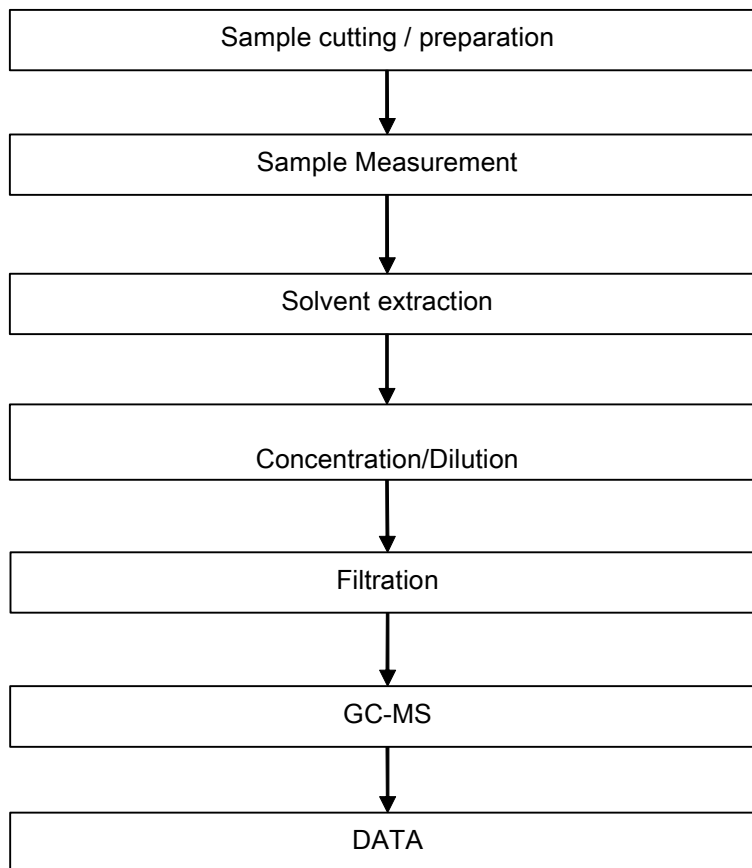
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



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Sample photo:



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弘源碩電子材料有限公司

HungYuanShuo Electronic Accessories CO.,LTD

产品规格承认书

版本：A/1

产品名称	H 无卤环保热缩套管	供应商代码	
规格/型号	所有系列	客户编号	

供應商確認（弘源碩電子材料有限公司）

拟制/日期	审核/日期
范松林 / 2012 年 1 月 15 日	宋大春 / 2012 年 1 月 15 日

客戶確認

客户批准/日期		
---------	--	--

公司地址：深圳市寶安區沙井街道辦中心路匯盈商務大廈十三樓1301，1302室

邮 编：518104

电 话：0755-29308589

传 真：0755-29308085

网 址：www.lyc-hys.com

1 主题内容与适用范围

本承认书规定了无卤环保阻燃型热收缩套管的技术要求、试验方法、检验规则以及包装等内容。

本承认书适用于电线连接、焊点保护、电线端部处理、线束及电子元器件的防护和绝缘处理、健身器材零部件和钢结构表面防护、相关产品的防锈和防腐处理、电线和其它产品的标识等用途的无卤阻燃型热收缩套管。

2 引用标准

Standard for Extruded Electrical Tubing UL 224.

3 术语

3.1 热收缩材料

以可塑性线型高聚物或高聚物合金为基材，用高能辐照方法或化学方法使聚合物分子链部分交联成为网状结构获得弹性“记忆效应”，经加热扩张至特定尺寸后冷却定型，使用时加热到适当温度后自行收缩到扩张前的形状和尺寸，这种材料称为热收缩材料。

3.2 热收缩套管

将上述高聚物或高聚物合金通过挤出成型得到规定尺寸的管状中间产品，辐照（或化学）交联后加热扩张，冷却定型得到的具有一定尺寸的管状产品成为热收缩套管。

3.3 绿色 RSFR 无卤阻燃热收缩材料

在热收缩材料中添加一定量的不含卤素、重金属等对环境有害的阻燃剂，使之符合一定阻燃要求和环保要求，则成为绿色 RSFR 无卤阻燃热收缩材料。

4 技术要求

4.1 使用条件

4.1.1 连续使用的环境温度： $-55^{\circ}\text{C}\sim 125^{\circ}\text{C}$ 。

4.1.2 可在酸、碱条件下长期使用。

4.1.3 可在环保要求严格的条件下长期使用。

4.2 外观要求

4.2.1 制品表面无明显划伤、凹凸不平、竹节状缺陷。

4.2.2 表面光洁、无油污、无积尘。

4.2.3 印字清晰、无重影、无多余墨迹、无印不全或打滑现象。

4.3 热收缩性能

4.3.1 起始收缩温度 70°C ；超薄型完全收缩温度 110°C ，普通型完全收缩温度 125°C 。

按照 UL224 标准，完全收缩到位温度为 200°C ，3 分钟。

4.3.2 纵向收缩率不超过 $\pm 5\%$

4.4 材料的性能特性

材料的理化性能符合表 1 规定。

4.5 收缩套管的产品尺寸

无卤阻燃型薄壁热收缩套管的产品尺寸符合表 2 规定，无卤阻燃型热收缩套管的产品尺寸符合表 3 规定。

4.6 颜色

标准颜色：黑色、红色、蓝色、黄色、绿色、白色，其它颜色如紫色、灰色、棕色等可根据客户要求定做。

4.7 使用方法

在使用过程中，为了保证热缩套管能完全收缩到位，使用强制鼓风式恒温烘箱，并将收缩温度控制在 125°C 。特别注意，当把热缩套管放入烘箱过程中，烘箱温度有一下降趋势，要达到设定温度需要一定的时间；同时，在烘箱内通过热空气循环流动使热缩套管达到最终收缩温度同样需要一定

的时间。因此，必须在烘箱实际温度达到设定温度并保持该温度 3 分钟左右，热缩套管才能完全收缩到位。

表 1 无卤阻燃型热收缩套管的性能特性

性能			测试方法	性能指标
物理性能	拉伸强度/MPa		GB/T1040	≥10.4
	断裂伸长率/%		GB/T1040	≥200
	热老化后拉伸强度/MPa		UL224; 158℃×168hr	≥7.3
	热老化后断裂伸长率/%		UL224; 158℃×168hr	≥100
	耐热冲击		UL224; 250℃×4hr	不发粘, 不龟裂
	抗冷弯曲		UL224; -30℃×1hr	不龟裂
电气性能	耐压	300V	UL224	2500V 不击穿
		600V	UL224	2500V 不击穿
	击穿强度/KV/mm		GB/T1408	≥15
	体积电阻率/Ω•cm		GB/T1410	≥1×10 ¹⁴
化学性能	铜安定性		UL224; 158℃×168hr	PASS
	抗腐蚀性		UL224; 158℃×168hr	PASS
	阻燃性		UL224	VW-1

表 2 H-CB 管（无卤阻燃型薄壁热收缩套管）的产品尺寸

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围
	内径	壁厚	内径	壁厚	米/盘	米/盘	(mm)
Φ0.6CB	0.90±0.2	0.13±0.05	≤0.40	0.20±0.10	200	400	0.4~0.7
Φ0.8CB	1.10±0.2	0.13±0.05	≤0.50	0.20±0.10	200	400	0.6~0.8
Φ1.0CB	1.40±0.2	0.13±0.05	≤0.65	0.20±0.10	200	400	0.7~1.0
Φ1.5CB	1.90±0.2	0.13±0.05	≤0.85	0.20±0.10	200	400	0.9~1.4
Φ2.0CB	2.40±0.2	0.13±0.05	≤1.00	0.22±0.10	200	400	1.1~1.8
Φ2.5CB	2.90±0.2	0.13±0.05	≤1.30	0.25±0.10	200	400	1.4~2.3
Φ3.0CB	3.40±0.2	0.13±0.05	≤1.50	0.28±0.10	200	400	1.6~2.7
Φ3.5CB	3.90±0.2	0.13±0.05	≤1.80	0.28±0.10	200	400	1.9~3.2
Φ4.0CB	4.40±0.2	0.15±0.05	≤2.00	0.30±0.10	200	400	2.1~3.6
Φ4.5CB	4.90±0.2	0.15±0.05	≤2.30	0.30±0.10	100	200	2.4~4.0
Φ5.0CB	5.50±0.2	0.15±0.05	≤2.5	0.32±0.10	100	200	2.6~4.5
Φ6.0CB	6.50±0.2	0.15±0.05	≤3.0	0.32±0.10	100	200	3.1~5.4
Φ7CB	7.50±0.3	0.15±0.05	≤3.5	0.32±0.10	200	200	3.7~6.3
Φ8CB	8.50±0.3	0.15±0.05	≤4.0	0.32±0.10	200	200	4.2~7.2
Φ9CB	9.50±0.3	0.15±0.05	≤4.5	0.35±0.10	200	200	4.7~8.0
Φ10CB	10.5±0.3	0.15±0.05	≤5.0	0.35±0.10	200	200	5.2~9.0

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Φ11CB	11.5±0.3	0.18±0.05	≤5.5	0.40±0.10	200	200	5.7~10.0
Φ12CB	12.5±0.3	0.20±0.05	≤6.0	0.40±0.10	200	200	6.2~11.0
Φ13CB	13.5±0.3	0.20±0.05	≤6.5	0.40±0.10	200	200	6.7~12.0
Φ14CB	14.5±0.3	0.20±0.05	≤7.0	0.40±0.10	200	200	7.3~13.0
Φ15CB	15.5±0.4	0.20±0.05	≤7.5	0.40±0.10	200	200	7.8~14.0
Φ16CB	16.5±0.4	0.22±0.05	≤8.0	0.40±0.10	200	200	8.3~15.8
Φ17CB	17.5±0.4	0.22±0.05	≤8.5	0.40±0.10	200	200	8.8~16.0
Φ18CB	18.5±0.4	0.22±0.05	≤9.0	0.42±0.10	200	200	9.3~17.0
Φ20CB	20.5±0.5	0.25±0.05	≤10.0	0.45±0.10	200	200	10.5~19.0
Φ22CB	22.5±0.5	0.25±0.05	≤11.0	0.45±0.10	200	200	11.5~20.5
Φ25CB	25.5±0.5	0.25±0.05	≤12.5	0.45±0.10	100	100	13.0~24.0

E203950   (W) WOER RSFR(CB) TUBE 125℃ VW-1 H (Φ9CB)

表3 H管（无卤阻燃型热收缩套管）的产品尺寸要求

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装 米/盘	新包装 米/盘	适用范围 (mm)
	内径	壁厚	最大内径	壁厚			
Φ0.6	0.9±0.2	0.18±0.05	≤0.40	0.33±0.10	200	400	0.4~0.7
Φ0.8	1.1±0.2	0.18±0.05	≤0.50	0.33±0.10	200	400	0.6~0.8
Φ1.0	1.5±0.2	0.20±0.05	≤0.65	0.36±0.10	200	400	0.75~0.9
Φ1.5	2.0±0.2	0.20±0.05	≤0.85	0.36±0.10	200	400	0.95~1.4
Φ2.0	2.5±0.2	0.20±0.05	≤1.00	0.45±0.10	200	400	1.1~1.8
Φ2.5	3.0±0.2	0.20±0.05	≤1.30	0.45±0.10	200	400	1.35~2.3
Φ3.0	3.5±0.2	0.23±0.05	≤1.50	0.45±0.10	200	400	1.6~2.7
Φ3.5	4.0±0.2	0.23±0.05	≤1.80	0.45±0.10	200	400	1.85~3.2
Φ4.0	4.5±0.2	0.25±0.05	≤2.00	0.45±0.10	200	400	2.1~3.6
Φ4.5	5.0±0.2	0.28±0.05	≤2.30	0.56±0.10	100	200	2.35~4.0
Φ5.0	5.5±0.2	0.28±0.05	≤2.50	0.56±0.10	100	200	2.6~4.5
Φ6.0	6.5±0.2	0.28±0.05	≤3.00	0.56±0.10	100	200	3.1~5.4
Φ7.0	7.5±0.3	0.30±0.05	≤3.50	0.56±0.10	100	100	3.7~6.3
Φ8.0	8.5±0.3	0.30±0.08	≤4.00	0.56±0.10	100	100	4.2~7.2
Φ9.0	9.5±0.3	0.30±0.08	≤4.50	0.56±0.10	100	100	4.7~8.0
Φ10	10.5±0.3	0.30±0.08	≤5.00	0.56±0.10	100	100	5.2~9.0
Φ11	11.5±0.3	0.30±0.08	≤5.50	0.56±0.10	100	100	5.7~10
Φ12	12.5±0.3	0.30±0.08	≤6.00	0.56±0.10	100	100	6.2~11
Φ13	13.5±0.3	0.35±0.08	≤6.50	0.56±0.10	100	100	6.7~12
Φ14	14.5±0.3	0.35±0.10	≤7.00	0.70±0.10	100	100	7.3~13
Φ15	15.5±0.4	0.35±0.10	≤7.50	0.70±0.10	100	100	7.8~14

规格 (mm)	收缩前尺寸 (mm)		收缩后尺寸 (mm)		旧包装	新包装	适用范围 (mm)
Φ16	16.5±0.4	0.35±0.10	≤8.00	0.70±0.10	100	100	8.3~15
Φ17	17.5±0.4	0.35±0.10	≤8.50	0.70±0.10	100	100	8.8~16
Φ18	19.0±0.5	0.35±0.10	≤9.00	0.70±0.10	100	100	9.3~17
Φ20	22.0±0.5	0.40±0.10	≤10.00	0.83±0.10	100	100	10.4~19
Φ22	24.0±0.5	0.40±0.12	≤11.00	0.83±0.15	100	100	11.4~21
Φ25	26.0±0.5	0.45±0.12	≤12.50	0.90±0.15	50	50	12.8~24
Φ28	29.0±0.5	0.45±0.12	≤14.00	0.90±0.15	50	50	14.4~29
Φ30	31.5±1.0	0.45±0.12	≤15.00	1.00±0.15	50	50	16~29
Φ35	36.5±1.0	0.45±0.12	≤17.50	1.00±0.15	50	50	18~34
Φ40	41.5±1.0	0.50±0.12	≤20.00	1.00±0.15	50	50	21~39
Φ45	46.5±1.0	0.50±0.15	≤22.50	1.00±0.20	25	25	23.5~44
Φ50	≥50	0.50±0.15	≤25.00	1.10±0.20	25	25	26~49

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注: Φ30 及以上规格产品默认为 G 管 (环保性能符合欧盟 RoHS 2002/95/EC 标准)。如果客户需 H 无卤热缩套管, 须在订单上注明。

4.8 环境物质

本承认书承诺不使用以下物质, 四大重金属、多溴联苯 (PBB)、多溴联苯醚 (PBDE)、卤素等通过 SGS 检测。无卤阻燃型热收缩套管的环保特性列于表 4。

1. 多氯化联苯 (PCB) 类
2. 多氯化萘 (PCN) 类
3. 氯化石蜡
4. 灭蚁灵 (Mirex)
5. 其它有机氯化物
6. 有机溴化合物-多溴联苯 (PBB)
7. 有机溴化合物-多溴联苯醚 (PBDE)
8. 有机锡化合物 (三丁基锡化合物和三苯基锡化合物)
9. 石棉
10. 偶氮化合物
11. 甲醛

表 4 无卤阻燃型热收缩套管的环保特性

环境物质	含量	测试方法
氟 (F)	≤200PPM	EN 14582 Method B
氯 (Cl)	≤900ppm	EN 14582 Method B
溴 (Br)	≤900ppm	EN 14582 Method B
碘 (I)	≤200PPM	EN 14582 Method B

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镉 (Cd)	≤5ppm	IEC 62321
铅 (Pb)	≤90ppm	IEC 62321
铬 (Cr ⁶⁺)	≤5ppm	IEC 62321
汞 (Hg)	≤5ppm	IEC 62321
砷 (As)	≤50ppm	EPA 3052
钡 (Ba)	≤1000ppm	EPA 3052
锑 (Sb)	≤60ppm	EPA 3052
硒 (Se)	≤25ppm	EPA 3052

备注：氯 (Cl) + 溴 (Br) <1500ppm

5. 材质证明书

材 质 证 明 书

沃尔核材股份有限公司无卤环保型 RSFR-H 热缩套管是一种阻燃型的热收缩套管，组成材料为聚烯烃加适量阻燃剂和助剂。产品中铅 (Pb)、镉 (Cd)、汞 (Hg)、六价铬 (Cr⁶⁺)、多溴联苯 (PBB)、多溴联苯醚 (PBDE) 等环境物质含量符合日本 SONY-SS-00259 和欧盟 RoHS 2002/95/EC 指令环保要求。其主要成份如下：

原料名称			使用目的	含量	供应商	CAS. NO.
中文	英文	分子式				
聚烯烃	Polyolefin	(CH ₂ CH ₂) _n	主剂	50%	北京有机	9002-88-4
氢氧化镁	Magnesium Hydroxide	Mg(OH) ₂	阻燃剂	35%	锦昊辉	1309-42-8
磷系阻燃剂	Phosphorus	(NH ₄ PO ₃) _n	阻燃剂	10%	上海海以	7723-14-0
色母粒	Pigment	色母+填充剂	着色剂	5%	华万彩	——
油墨	Printing Ink	——	印字	——	上海捷信	——

6. 技术资料

- (1) UL/cUL 证书
- (2) ISO9001 证书
- (3) ISO14001 证书
- (4) ISO/TS16949 证书
- (5) SGS/ITS/CTI 检测报告

弘源碩電子材料有限公司

二零一二年一月十五日



YDPU2.E203950 Tubing, Extruded Insulating - Component

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Tubing, Extruded Insulating - Component

[See General Information for Tubing, Extruded Insulating - Component](#)

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD

E203950

XINWEI INDUSTRIAL PARK, WOER MANSION

NANSHAN DISTRICT, XILI

SHENZHEN, GUANGDONG 518052 CHINA

Cat. No.	Max V	Max Temp C	Col Recognized	Max Temp Rated Oil Resistance C	VW-1 Rated #
Flexible Heat-Shrinkable Polyolefin Tubing					
RSFR	600	125	All except Clear	None	\$
WKZM-x-yz	600	125	White	None	No
RSFR-H	600	125	All except Clear	None	Yes
RSFR(CB)	300	125	All except Clear	None	Yes
Not Heat-Shrinkable PTFE Tubing					
WF	600	200	Natural	None	Yes
Heat-Shrinkable Polyolefin Tubing with Meltable Liner					
SBRS	600	125	All except Clear	None	Yes
Not Heat-Shrinkable Standard Wall Silicone Tubing					
WST-600	600	150	White	None	@

x-yz - x represents tubing expanded ID, yz represents any alpha and/or numeric combination - for internal client code.

- Tubing is considered to comply with the optional VW-1 flammability requirements only if it is so marked for tubing authorized below.

@ - VW-1 rated for internal diameter sizes 6.50 - 15.00 mm only.

\$ - VW-1 rated for Black color only.

Marking: Company name or file number "E203950", catalog number, voltage rating, temperature rating in degrees C, inside diameter (before and after recovery), and date of manufacture shall be marked on tags attached to both ends of the tubing, on the shipping spool label or on the smallest unit container.

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Test Report



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Applicant SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

Address WOER INDUSTRIAL PARK, LANJING NORTH ROAD, LONGTIAN STREET, PINGSHAN DISTRICT, SHENZHEN, GUANGDONG.

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name PE masterbatch- Black
Sample Received Date Apr. 26, 2019
Testing Period Apr. 26, 2019 to Apr. 29, 2019

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).



Tested by

Crit Qin

Approved by

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Tori Xia

Date

May 17, 2019

No. R179757340

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	36 mg/kg	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

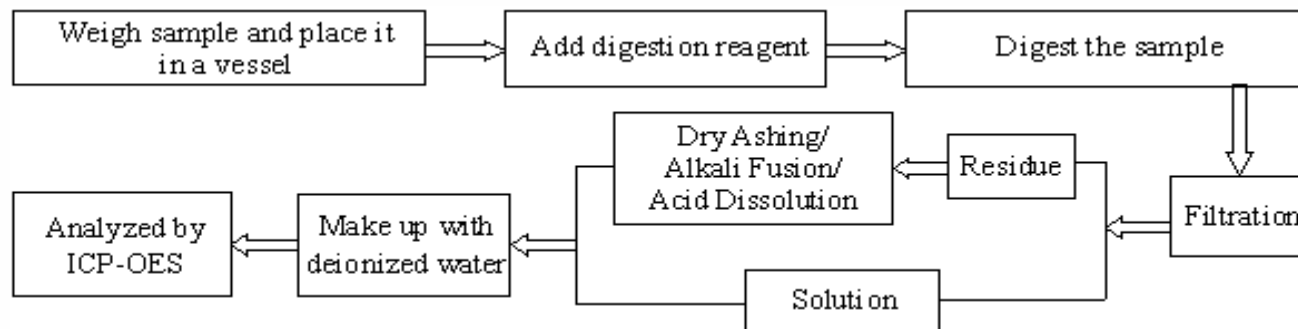
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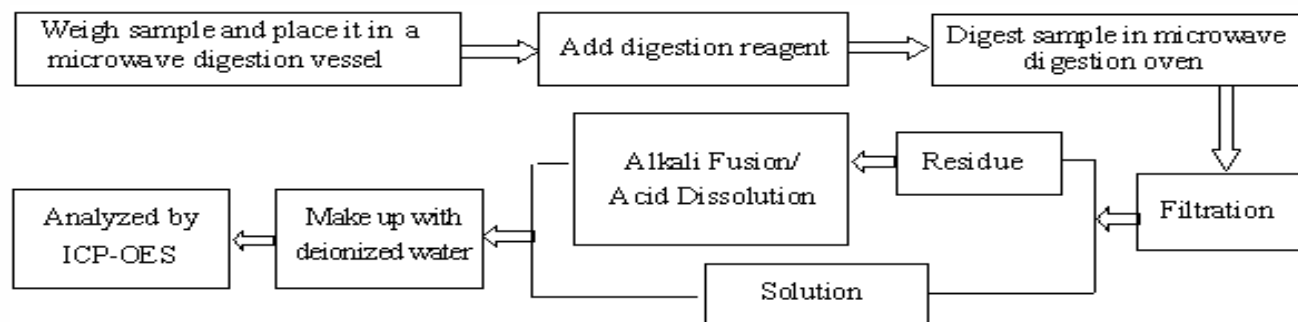
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Test Process

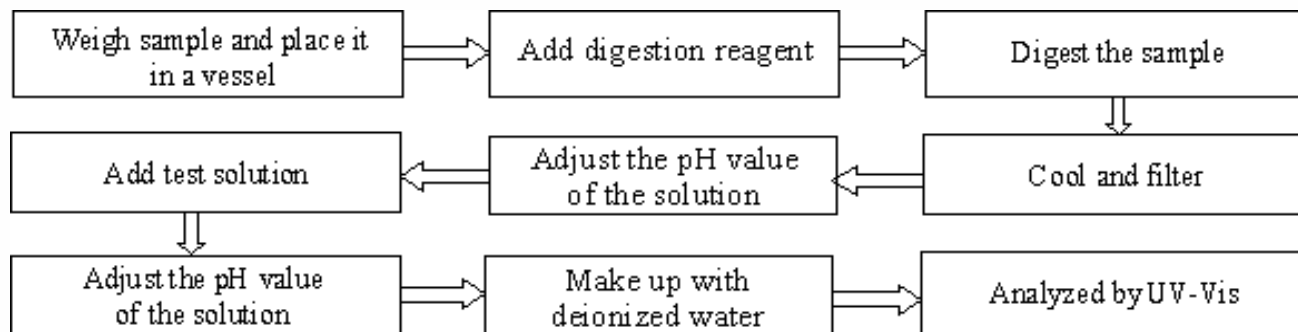
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



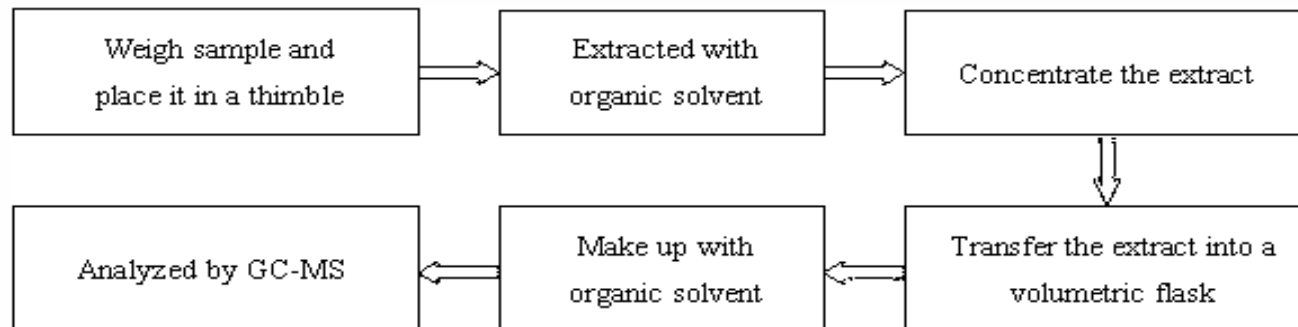
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

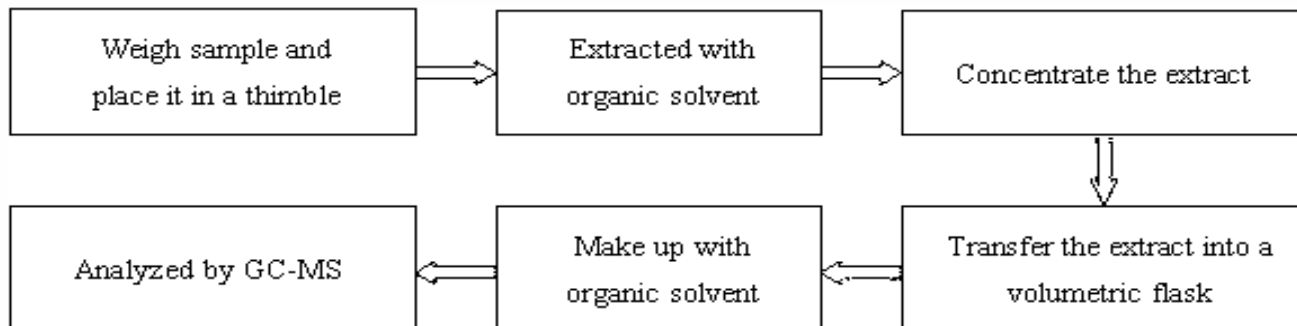


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5. Phthalates (DBP, BBP, DEHP, DIBP)



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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 1 of 6

SINWA LASER TECHNOLOGY CO.,LTD

50.WU KONG 5 TH RD,.WU KU INDUSTRIAL PARK .TAIPEI TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : HALOGEN FREE WHITE INK

SGS Job No. : CP19-032627 - SZ

Model No. : I-TPE-01

Client Ref. Info. : I-PE-01; I-TPE-01;I-TPR-01;I-PE-01; I-PPE-01;I-PP-01;I-TPU-01;I-RU-01

Date of Sample Received : 19 Jun 2019

Testing Period : 19 Jun 2019 - 26 Jun 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Violet Shi

Violet,Shi
Approved Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN19-117806.002	White liquid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Guangzhou Branch Testing Center Chemical Laboratory

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Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Test Item(s)	Limit	Unit	MDL	002
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Remark: The result(s) shown is/are of the total weight of dried sample.



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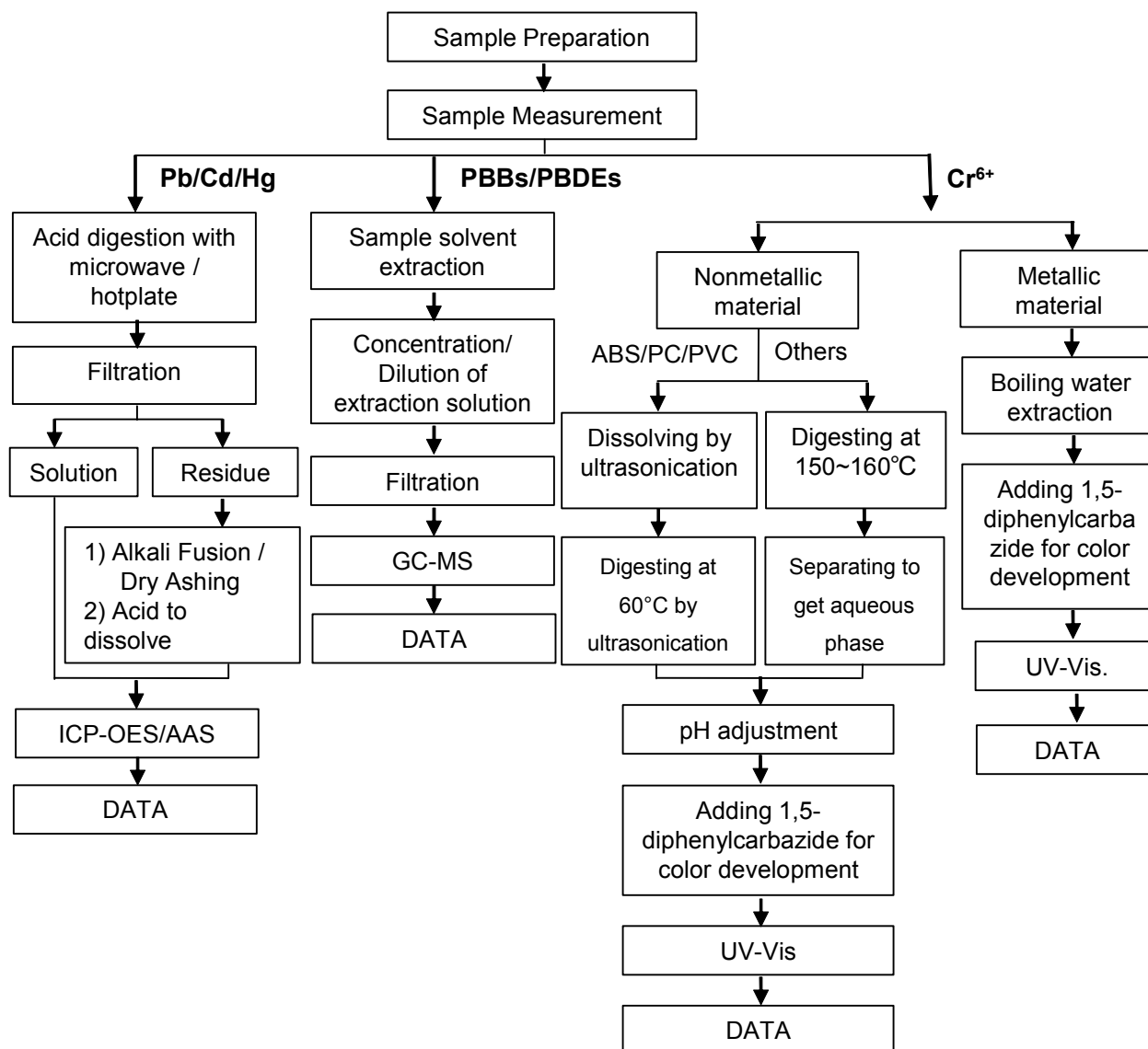
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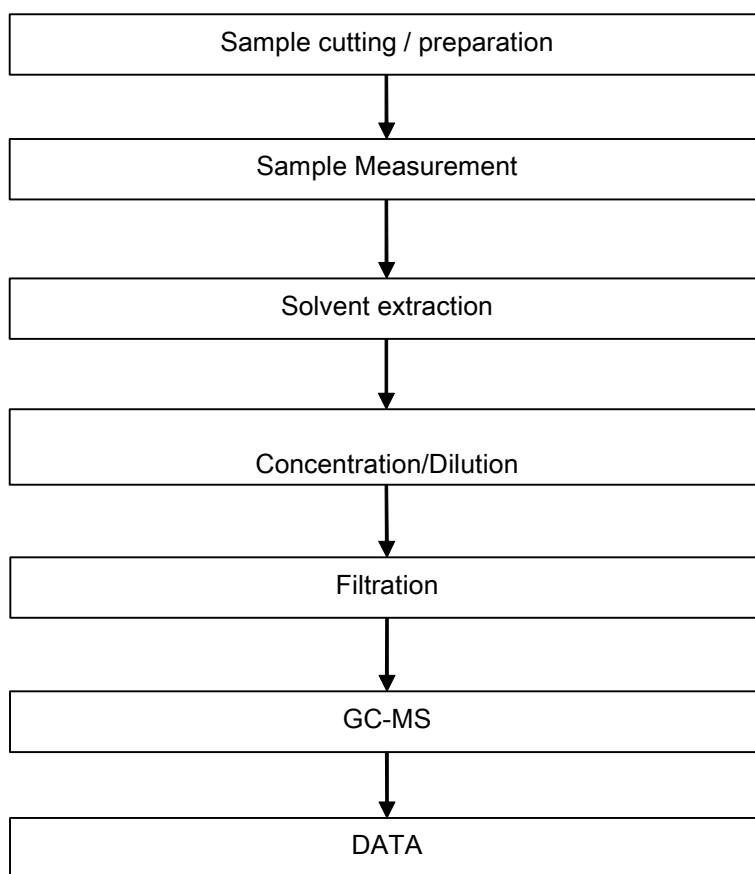
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. CANEC1911780603

Date: 26 Jun 2019

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Sample photo:



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*** End of Report ***



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Test Report

No. SZXEC1902199601

Date: 21 Oct 2019

Page 1 of 7

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

WOER INDUSTRIAL PARK,LANJING NORTH ROAD, LONGTIAN STREET,PINGSHAN
DISTRICT,SHENZHEN, GUANGDONG

The following sample(s) was/were submitted and identified on behalf of the clients as : PLEASE SEE REMARK

SGS Job No. : RP19-021176 - SZ

Date of Sample Received : 16 Oct 2019

Testing Period : 16 Oct 2019 - 21 Oct 2019

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Ford

Ford Shi
Approved Signatory



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Test Report

No. SZXEC1902199601

Date: 21 Oct 2019

Page 2 of 7

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX19-021996.001	Black tube w/ white printing

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. SZXEC1902199601

Date: 21 Oct 2019

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Test Item(s)	Limit	Unit	MDL	001
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl Phthalate (BBP)	1000	mg/kg	50	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

Notes :

(1)The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.



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Test Report

No. SZXEC1902199601

Date: 21 Oct 2019

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REMARK

RSFR-H HEAT SHRINKABLE TUBINGS (E203950  WOER RSFR-H TUBE 125°C VW-1 H)



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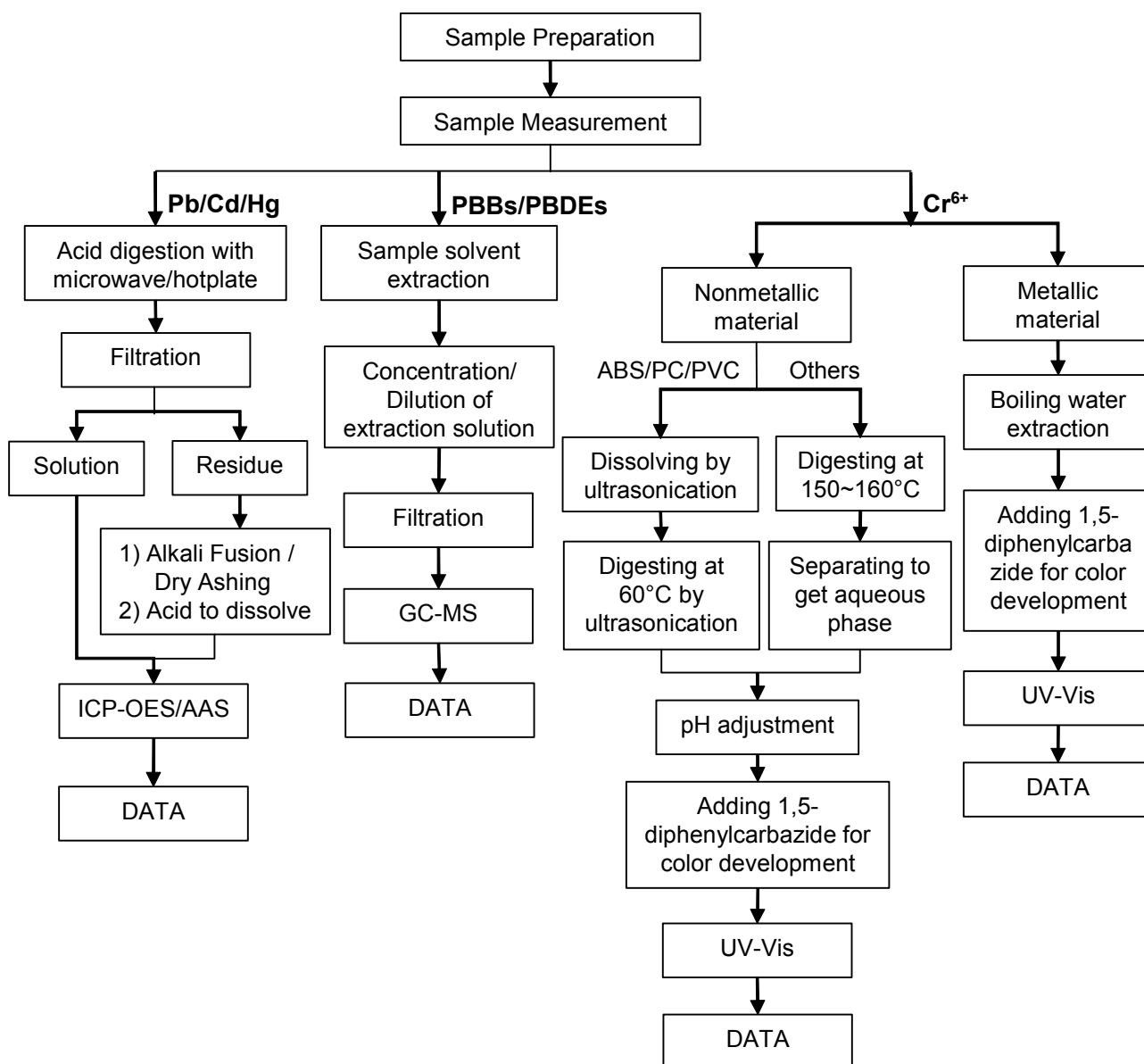
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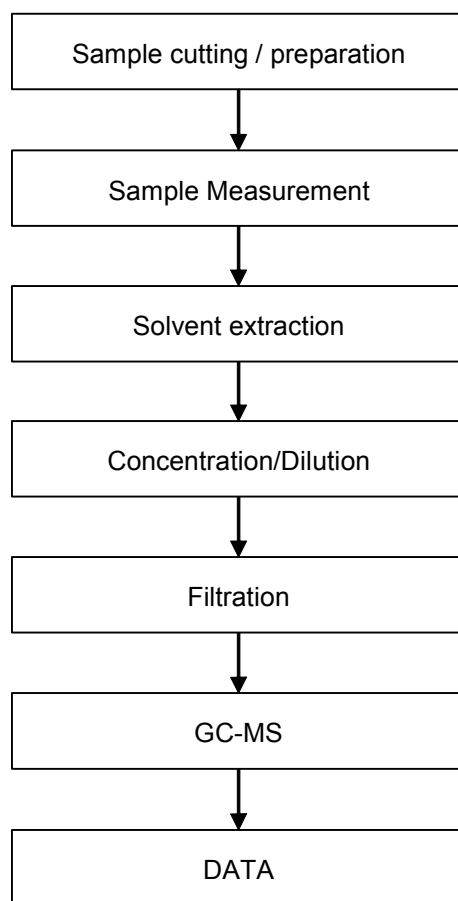
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ and PBBs/PBDEs test method excluded).



ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

No. SZXEC1902199601

Date: 21 Oct 2019

Page 7 of 7

Sample photo:



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*** End of Report ***

Test Report (SVHC)

No. SZXEC1902150003

Date: 16 Oct 2019

Page 1 of 19

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.
WOER MANSION, NORTH LANJING RD,PINGSHAN, SHENZHEN P.R.CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PLEASE SEE REMARK

SGS Job No. : RP19-020756 - SZ
Date of Sample Received : 11 Oct 2019
Testing Period : 11 Oct 2019 - 16 Oct 2019
Test Requested : As requested by client, SVHC screening is performed according to:
(i) Two hundred and one (201) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jul 16, 2019 regarding Regulation (EC) No 1907/2006 concerning the REACH.
Test Results : Please refer to next page(s).

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are $\leq 0.1\%$ (w/w) in the submitted sample.	PASS
-------------------------------------------------------------------------------------------------------------------------------------	------

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Tina

Tina Fan
Approved Signatory



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Test Report (SVHC)

No. SZXEC1902150003

Date: 16 Oct 2019

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Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
These lists are under evaluation by ECHA and may subject to change in the future.

2. REACH obligation:

2.1 Concerning article(s):

Communication:

Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of $\geq 1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or $\geq 0.2\%$ by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of $\geq 0.1\%$ by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of $\geq 0.1\%$ by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX19-021500.002	Black tube

Test Method :

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	002 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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Notes :

1. The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
2. RL = Reporting Limit (Test data will be shown if it \geq RL. RL is not regulatory limit.). ND = Not detected (lower than RL),
ND is denoted on the SVHC substance.
3. * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
For detail information, please refer to the SGS REACH website :
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, cadmium, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
5. Calculated concentration of boric compounds are based on the water extractive boron by ICP-OES.
6. Δ CAS No. of diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
7. \star CAS No. of Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
8. \S The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) $\geq 0.1\%$ (w/w).



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Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) ^Δ	25637-99-4, 3194- 55-6	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	10043-35-3, 11113-50-1	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5,- 13530-68-2	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	650-017-00-8 (Index no.)	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate) *	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	0.005
VII	72	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylamm onium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7, 13149-00-3, 14166-21-3	0.050
VIII	101	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	☆	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Diethyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Triethyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005



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Batch	No.	Substance Name	CAS No.	RL (%)
XII	156	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-Ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate; DOTE	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4, 31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.050
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1, 21049-39-8, 4149-60-4	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7, 335-76-2, 3830-45-3	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3, 1718-53-2	0.050
XVIII	177	Cadmium nitrate*	10022-68-1, 10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9, 1719-03-5	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050



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Batch	No.	Substance Name	CAS No.	RL (%)
XIX	186	Disodium octaborate*	12008-41-2	0.005
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine (EDA)	107-15-3	0.050
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl, hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0, 93951-69-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0, 1718-52-1	0.050
XXI	198	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	0.050
XXI	199	2-methoxyethyl acetate	110-49-6	0.050
XXI	200	4-tert-butylphenol (PTBP)	98-54-4	0.050
XXI	201	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)	-	0.050



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REMARK

RSFR-H HEAT SHRINKABLE TUBINGS(E203950  WOER RSFR-H TUBE 125°C VW-1 H)



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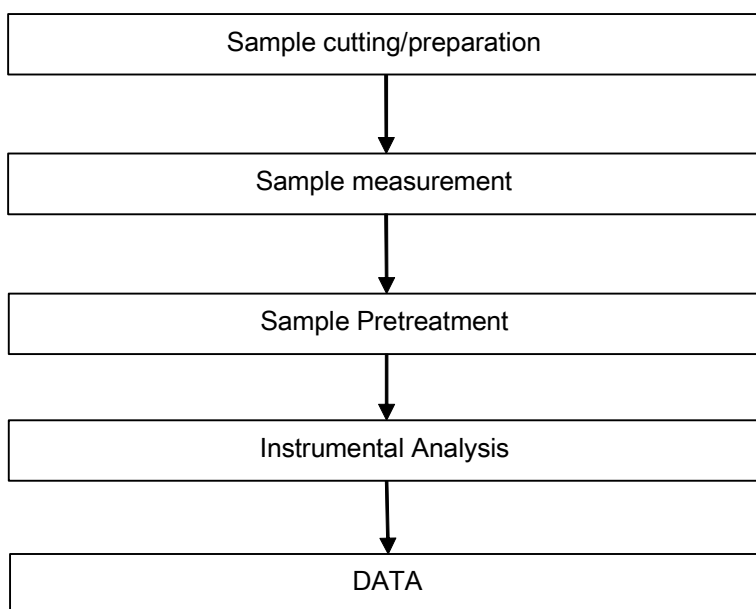
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ATTACHMENTS

SVHC Testing Flow Chart



Test Report (SVHC)

No. SZXEC1902150003

Date: 16 Oct 2019

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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Non-use of restricted substances statement

請填寫相關資訊

Please fill in the relevant information :

公司名稱 Company name : 飛偉科技有限公司

公司負責人 Company Responsible Person : 王俊偉

立書人 Declarant: 王俊偉

立書人職稱 Declarant's Title : 負責人

本聲明書生效日期 Effective Date of this Declaration : 2017/08/03



(公司章 Company Stamp)

請勾選本聲明書適用範圍

Please Select the Scope of this Declaration :

■提供給研揚的全部產品 All Products provided to AAEON

■研揚料號 AAEON Part Number :

1701100180



(負責人章 Responsible Person
Chop)

☐ 原廠料號 Manufacturer Part Number :

飛偉科技有限公司

(填寫公司名稱) 響應全球綠色環保法規或其他法律，保證如下事項：

_____ (Fill in Company name) Response to global green environmental protection regulations or other laws, guarantee the following matters:

一、產品符合歐盟 RoHS (2011/65/EU)* 規範。

The product complies with EU RoHS (2011/65/EU) norms.

- i. 歐盟於 2015 年 6 月 4 日公布指令 (EU) 2015/863，將四項可塑劑 DEHP, BBP, DBP and DIBP 增加至 Annex II 清單中，限值仍為 1000ppm，從 2019 年 7 月 22 日起需符合此要求，作為供應商，如果有包含上述物質，務必主動通知研揚。

EU announce with (EU)2015/863 that DEHP, BBP, DBP and DIBP are primarily used to soften plastics, that will be restricted from **22 July 2019** for all electrical and electronic equipment. As suppliers, if your components content with above substances, please inform to AAEON related people.

Non-use of restricted substances statement

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- ii. 當作為包材類的材料，也須符合歐盟包裝指令(94/62/EC) 與修訂指令(2013/2/EU)

When used as package material, it also needs to comply with EU package directive (94/62/EC) and amendment (2013/2/EU)

Note: Pb+Cd+Hg+Cr⁶⁺ <100 ppm

- iii. 若為電池零件，也須符合電池指令 2006/66/EC 與修訂指令 2013/56/EU

For battery components, it also needs to comply with EU battery directive (2006/66/EC) and amendment (2013/56/EU)

Note: Cd<20ppm; Hg <5ppm

二、產品符合衝突金屬(Conflict Metal)規範，並確認銷售產品若有含錫、鉭、鎢、金這四種礦產，來源並非來自剛果民主共和國及其周邊國家剛果、烏干達、蘇丹、坦桑尼亞、盧旺達、安哥拉、贊比亞、布隆迪。

The product complies with the conflict metal norms, and confirm that your company selling products contain tin、tantalum、tungsten、gold four mineral, those sources are not come from Democratic Republic of the Congo and its neighboring countries of Congo、Uganda、San、Tanzania、Rwanda、Angola, Zambia, Burundi.

三、產品符合歐盟最新REACH (EC 1907/2006) 規範，

高關注物質(SVHC)，不超過 0.1%上限，以重量計算。

備註：請參照歐盟化學總署(ECHA)網站，最新的高關注物質清單。

This product complies with latest EU REACH (EC 1907/2006) norms.

The SVHC, are not over 0.1% threshold by weight.

Note: Please check ECHA website for latest SVHC list: <https://echa.europa.eu/candidate-list-table>

立書人提供給研揚的所有文件（含測試報告、聲明書、調查表等文件），均正確屬實並且完整。

All documents (including test reports, declarations, survey forms, etc.) provided by Declarant to AAEON shall be correct, true and complete.

如有違背此保證聲明書的規定，飛偉科技有限公司 (填寫公司名稱) 將承擔相關法律責任並賠償研揚所受損害。

If violates any provision of this Declaration, _____ (Fill in Company name) shall take legal responsibilities and compensate AAEON for damages and losses caused by this violation.