

承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): JK1-123-C81R-1

品名规格 (PronameSpec): DC JACK (9.6*7.0*11.7) PA9T 黑色, 镀锡, 中心轴 2.0

送样日期 (Delivery Date): 2022/05/13

承认日期 (Acknowledge Date): 2022/05/13

Approved No:		客 户 Customer	
采 购 部 Purchasing Dept	品 质 部 QC Dept	工 程 部 Engineering Dept	确 认 Approved By
深 圳 市 华 联 威 电 子 科 技 有 限 公 司 SHEN ZHEN SHI HUA LIAN WEI ELECTRONICS TECHNOLOGY CO; LTD.			
业 务 部 Sales Dept	品 管 部 QC Dept	工 程 部 Engineering Dept	核 准 Checked By
万金菊	欠必锋	魏红	唐竹君

地址: 深圳市龙华区观澜街道桂香社区观澜桂花路 307 号

TEL: 0755-28888886 28888866

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[Http://www.hlwconn.com](http://www.hlwconn.com)

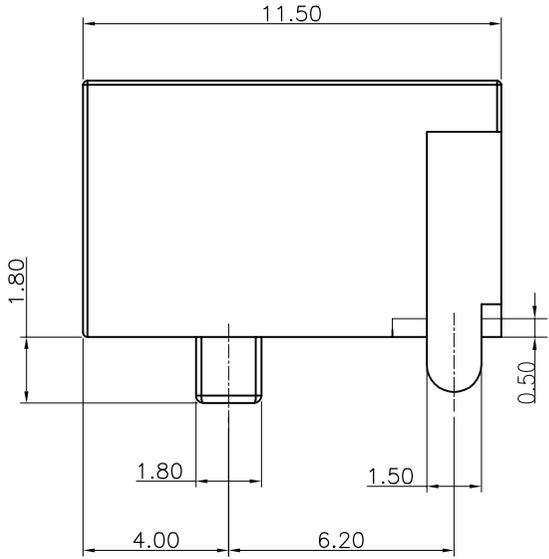
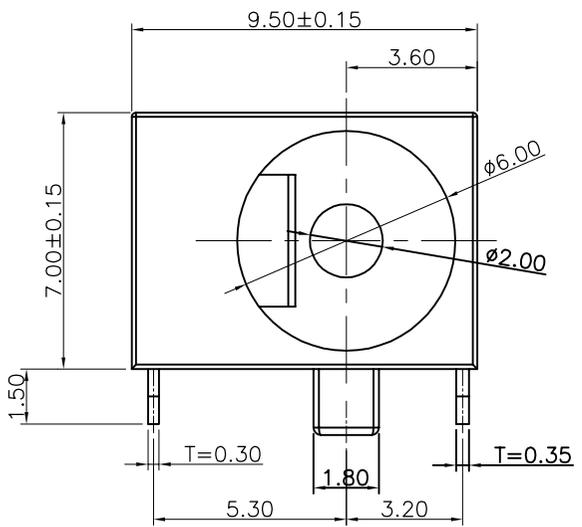


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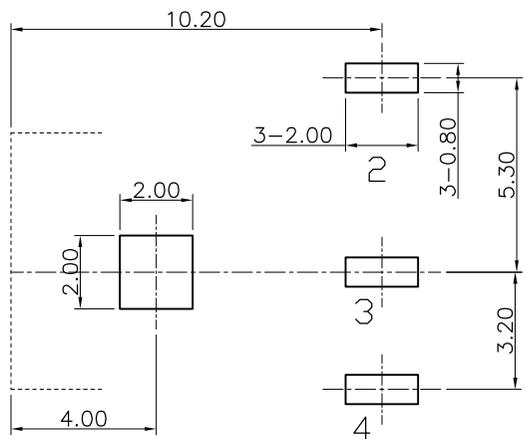
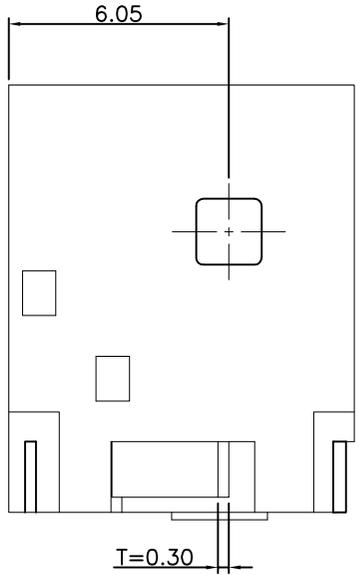
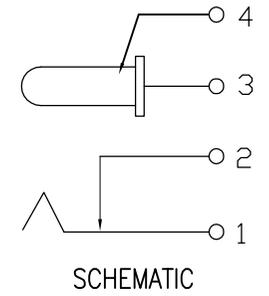
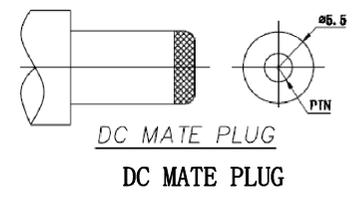
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4	3	2	1
ECN.NO.	ECN DESCRIPTION	REV.	DATE
/	新版发行	A	2022.03.07
			weihong



技术要求

1. 插入力: 2.94~29.4N(0.3~3.0kgf)
2. 拔出力: 2.94~29.4N(0.3~3.0kgf)
3. 接触电阻: 50mΩ Max
4. 绝缘电阻: 100MΩ DC 1000V
5. 耐电压: AC 1000V 1min无飞弧及击穿
6. 耐久: 5000 10~20次/Min
7. 额定负载: DC 12V 2A
8. 适用温度范围: -25~85° C
9. 推荐使用插头:



RECOMMENDED PCB LAYOUT(TOP VIEW)
THICKNESS DIM±0.10mm;DEFAULT TOLERANCE:±0.05

								主要技术性能	
								额定电负荷	DC 30V\0.5A
5	DC-044-05	弹片脚	1	磷铜	0.3	镀镍锡	接触电阻	≤0.03Ω	
4	DC-044-04	插片脚	1	黄铜	0.3Y	镀镍锡	绝缘电阻	≥100MΩ	
3	DC-044-03	平片	1	黄铜	0.3Y	镀镍锡	耐压	AC500V(50Hz)/min	
2	DC-044-02	圆针	1	黄铜	2.0	镀镍锡	插拔力	3-20N	
1	DC-044-01	底座	1	PA9T		黑色	使用温度范围	-30~70°C	
序号	产品编号	产品名称	数量	材料	规格	处理	使用寿命	5000次	

TOLERANCE UNLESS OTHERWISE SPECIFIED		FLW 深圳市华联威电子科技有限公司			
		HUA LIAN WEI TECHNOLOGY ELECTRONICS CO;LTD.			
.XXX ±0.10	.XX ±0.20	.X ±0.30	.X* ±2*	.XX* ±1*	
APPROVED		PART NAME:	DC Jack (9.6x7.0x11.5) 中轴 2.0		
CHECKED		PART No:	JK1-123-C81R-1		C
DRAWN	weihong	PROJECTION:	UNIT:	SCALE	SHEET
DATE	2022.03.07		mm	1:1	10F1
					REV. A

JACK系列產品SPEC

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection.
2	Operating Temperature	-25°C to 85 °C	
3	Storage Temperature	-25°C to 85 °C	
ELECTRICAL REQUIREMENT			
4	Rating Voltage	12VAC max	on any signal pin with respect to the shield
5	Rating Current	1.0 A per contact	55°C ,maximum ambient 85°C ,maximum temperature change (ANSI/EIA 364-70,TP-70)
6	Contact Resistance	[50] m Ohm Max	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. EIA-364-23.
7	Dielectric withstanding Voltage	No flashover ,no creeping discharge, no breakdown	500 VAC for 1 minute between adjacent terminals. EIA 364-20
8	Insulation Resistance	[100] M Ohm Min.	Mated connector with a voltage of 500V DC for 1 minutes between adjacent terminals EIA 364-21
9	Temperature Rising	30°C Max. Under loaded rating current	Contact series-wired, apply test current of loaded rating current to the circuit, and measure the temperature rising by probing on soldered areas of contacts, after the temperature becomes stabilized deduct ambient temperature from the measured value.
Mechanical Requirement			
10	Connector Mating Force	<u>3.0 kgf Max</u>	Mating the connector with standard audio plug at a rate of 12.7 mm per minute EIA 364-13
11	Connector Unmating Force	<u>0.30~3.0 kgf</u>	Unmating the connector with standard audio plug at a rate of 12.7 mm per minute EIA 364-13

12	Durability	Visual Inspection-No physical damage LLCR-50 mΩ max per contact initial,100 mΩ after 1500 insertions.	Insertion and extraction with plug up to 1500 cycles at a maximum rate of 200 cycles per hour. EIA 364-09
13	Vibration	No discontinuity at 1 μs or longer(each contact) when continuity is tested per ANSI/EIA-364-46	ANSI/EIA-364-28,Condition III,Method 5A,15 minute/axis
14	Mechanical Shock	No discontinuity at 1 μs or longer(each contact) when continuity is tested per ANSI/EIA-364-46	ANSI/EIA-364-27 Condition A(specified pulse)
15	Solder ability	At least 95% of the immersed area shall be covered with new solder	1)Temperature of fused solder: 245+5 °C. 2)Dipping time:5+0.5s EIA 364-52
Environmental Requirements			
16	Resistance to Solder Heat	Forming resin shall not be distorted, and terminations shall not be separated.	1) Depth of dipping termination: the distance between the mounting surface and solder surface shall be 1 mm to 2mm. 2)Temperature:245+5°C.
17	Thermal Shock	No physical damage to the samples and LLCR-50 mΩ max per contact	Mated connectors exposed to 10 cycles between - 55°C to 85°C, 30 minutes duration at both temperature extremes
18	Steady State Humidity	No physical damage to the samples and can pass the Dielectric Withstanding Voltage & Insulation Resistance	Expose mated connectors to a temperature of 40±2°C with relative humidity of 90-95% for 168 hours Min(seven complete cycles). Remove surface moisture and air dry for 24
19	Temperature Life (Heat Aging)	[100] M Ohm Min. (insulation reisistance)	ANSI/EIA-364-17 Condition 4 105°C for 250 hours,Method A,mated
20	Salt Spray	Visual Inspection-No physical damageLLCR-50 mΩ max per contact	Mated connector expose to 5% salt concentration for 12 hours at temperature 35+2°C .After the test specimens shall be washed with running water and dried
21	Colour	Colour Atla	284C(Blue) 577C(Green) 701C(Red)
22	Plating	Contact: <u>Cu:40u",Sn:40u",Ni:40u"</u> Shell: <u>Cu:40u",Ni:40u"</u> Ground: <u>Cu:40u",Ni:40u",Sn:40u"</u>	/
Product Qualification and Requalification test			
Test Group			

Test or Examination	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1, 3	1, 3
Contact Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4			
Dielectric withstanding	3, 6									
Insulation Resistance	2, 5									
Temperature Rising								2		
Mating Force		3, 7								
Unmating Force		4, 6								
Durability		5								
Vibration			3							
Mechanical Shock			4							
Solderability										2
Resistance to Soldering									2	
Thermal Shock				3						
Humidity Temperature	4				3					
Temperature Life						3				
Salt Spray							3			
備注	無客戶指定增加測試項目外，依照此標準進行產品可靠性評估。									

核准：唐竹君

制作人：覃裕华

3	Cold test	Temperature: -25 ±3°C Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
4	Temperature cycling test	Temperature:85 ~-25°C Duration:5 cycle	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	

四.物理測試 PHYSICAL TEST

序 號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					1	2	3	4	5	Pass	Fail
1	Salt spray test	Temperature: 35±2°C Concentration:5±1 %Duration:24H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	P	
2	Resistance to soldering heat test	Temperature: 265±5°C Duration:10±1sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Solder ability test	Temperature: 265±5°C Duration:5±0.5 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area ≥95□	Pass	Pass	Pass	Pass	Pass	P	
判定 Result		<input checked="" type="checkbox"/> 合格 (ACCEPT) <input type="checkbox"/> 不合格 (REJECT)									

核准(Approver): 欠必峰

測試(Tester): 但芬

檢驗報告

首件檢驗
 入庫檢驗
 出貨檢驗
 客退檢驗
 退料檢驗
 其他
 2022年05月13日 版次:A1

料號	JK1-123-C81R-1		制令單號	/		送檢單位	工程		首件製作者	裝配			
品名	DC JACK		客戶代號	/		批 量	/		送檢時間	/			
						數 量	5PCS		確認時間	/			
抽樣標準			<input checked="" type="checkbox"/> 單次 <input type="checkbox"/> 雙次			抽樣數 (5PCS)	AQL		CRI:0	MAJ:0.40	MIN:0.65		
MIL-STD-105E(II)			<input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加嚴 <input type="checkbox"/> 減量				ACC/REJ		0	/	/		
不良數: CRI (/) MAJ (/) MIN (/)									不良率(%)		/		
NO.	檢驗項目 單位:MM/G	檢測 儀器	檢 驗 記 錄					品管判定		CRI	MAJ	MIN	備注
			1	2	3	4	5	AC	RE				
尺 寸 測 量	9.50±0.15	D	9.46	9.43	9.45	9.43	9.45	√					
	3.60±0.20	D	3.59	3.58	3.57	3.58	3.59	√					
	7.00±0.15	D	6.99	7.00	7.01	6.98	6.99	√					
	5.30±0.20	D	5.18	5.20	5.19	5.18	5.20	√					
	1.80±0.20	D	1.77	1.78	1.79	1.77	1.78	√					
	3.20±0.20	D	3.22	3.23	3.25	3.23	3.22	√					
	6.05±0.20	D	6.03	6.05	6.04	6.05	6.03	√					
	11.50±0.20	D	11.58	11.57	11.58	11.59	11.57	√					
	1.80±0.20	D	1.76	1.73	1.75	1.74	1.75	√					
	4.00±0.20	D	4.04	4.05	4.03	4.05	4.04	√					
	6.20±0.20	D	6.21	6.20	6.23	6.22	6.20	√					
	1.50±0.20	A	1.53	1.51	1.52	1.50	1.52	√					
檢驗依據: <input checked="" type="checkbox"/> 《工程圖紙》 <input type="checkbox"/> 《檢驗規範》 <input type="checkbox"/> 《承認書》 <input type="checkbox"/> 樣品 <input type="checkbox"/> 其它													
檢測儀器:A游標卡尺 B千分尺 C厚薄儀 D投影鏡 E放大鏡 F顯微鏡 G錫爐 H插拔力器 I間位尺 J其它													
品保判定:		<input checked="" type="checkbox"/> 合格Accept <input type="checkbox"/> 退貨Reject <input type="checkbox"/> 特采Waive <input type="checkbox"/> 挑選Sort											
核 准 APP		欠必鋒			審 核 CHK		/		檢 驗 員 INSPBY		但 芬		

保存期限:三年

保存部門:品保部

QR-M-003

品名:DC JACK 端子		版次:A.0																															
电镀规格:Ni40u", Sn40u"		日期:2022/3/12																															
页次:1/1																																	
厂商:同华																																	
测试设备:CMI X-射线膜厚测试仪																																	
1、底层电镀测试 (Ni)																																	
<table border="1"><thead><tr><th>数据</th><th>测试标准</th><th>实测值</th><th>判定</th><th>测试日期</th><th>测试时间</th></tr></thead><tbody><tr><td>1</td><td>40u"MIN</td><td>46.5u"</td><td>OK</td><td>2022/3/12</td><td>10:20:15</td></tr><tr><td>2</td><td>40u"MIN</td><td>48.3u"</td><td>OK</td><td>2022/3/12</td><td>10:20:17</td></tr><tr><td>3</td><td>40u"MIN</td><td>47.5u"</td><td>OK</td><td>2022/3/12</td><td>10:20:19</td></tr><tr><td>4</td><td>40u"MIN</td><td>42.4u"</td><td>OK</td><td>2022/3/12</td><td>10:20:21</td></tr></tbody></table>				数据	测试标准	实测值	判定	测试日期	测试时间	1	40u"MIN	46.5u"	OK	2022/3/12	10:20:15	2	40u"MIN	48.3u"	OK	2022/3/12	10:20:17	3	40u"MIN	47.5u"	OK	2022/3/12	10:20:19	4	40u"MIN	42.4u"	OK	2022/3/12	10:20:21
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2、表层电镀测试 (Sn)																																	
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2	40u"MIN	46.7u"	OK	2022/3/12	10:25:12																												
3	40u"MIN	48.9u"	OK	2022/3/12	10:25:14																												
4	40u"MIN	42.4u"	OK	2022/3/12	10:25:16																												

核准: 欠必锋

审核: 刘联英

检验员: 但芬

盐水喷雾实验报告

试验方法	盐水喷雾腐蚀试验法	参考资料	MIL-STD-1216
METHOD	NEUTRL SALT SPRAY CORROSION TEST	REF	
客户	创维	试验起始日期	2022年05月12日 20:00 时起
		DATE	2022年05月13日 20:00 时止
样品名称	DC JACK (9.6*7.0*11.7)PA9T黑色镀锡 中心轴2.0	试验数量	5PCS
P/N	JK1-123-C81R-1		
试验条件 (TEST CONDITON)			
1、盐水溶解 (SALT SOLUTION: 浓度 $50 \pm 10\text{g/L}$, PH值6.5-7.2.			
2、试验室温度 (TEMP. IT THE SPRAY DHAMBR): $35 \pm 1^\circ\text{C}$.			
3、盐水桶温度 (TEMP. OF SALE SOL' N TANK): $35 \pm 1^\circ\text{C}$.			
4、压力桶温度 (TEMP. OF SAR SUPPLIERY): $47 \pm 1^\circ\text{C}$.			
5、试验室相对湿度 (R. H IN THE CHAMBER) 85%.			
6、压缩空气压力 (COMPRESSED AIR PRESSURE): $1.00 \pm 0.01\text{Kg/cm}^2$.			
7、样品放置位置 (SPECIMEN SUPPORTED ANGLE): 尼龙绳吊挂 $70^\circ - 90^\circ$.			
8、喷雾收集量 (COLLECT RATE OF SALT SOL' N) $1-2\text{mL}/(8 \text{ cm}^2\text{hr})$.			
9、盐雾测试时间: 24小时 (H)			
判定方法 (ADFUSGD METHOD)			
试验后以20倍放大镜观察、无蓝、绿色腐蚀物之现象 (不包含折弯处), 即判定合格. (Inspext the ecimen at 20 xmagnification no blue or green corrosion products are acceptable)			
样品序号	试验后现象	判定	
	PHENOMENON AFTER TEST	COMMENT	
1	无蓝、绿色腐蚀物之现象	OK	
2	无蓝、绿色腐蚀物之现象	OK	
3	无蓝、绿色腐蚀物之现象	OK	
4	无蓝、绿色腐蚀物之现象	OK	
5	无蓝、绿色腐蚀物之现象	OK	

核准: 欠必锋

审核: 刘联英

试验员: 但芬



东莞市鼎荣金属材料有限公司

DongGuanDingRongMetalsMaterialCo., Ltd

产品质量证明书

CERTIFICATE OF QUALITY

电话: 0769-85220060
 传真: 0769-85220061
 网址: www.dingrongjinshu.com
 邮箱: dingrong1978@163.com
 地址: 东莞市虎门镇雅瑶怀雅大道73号

客户名称 Customer	华联威			产品名称 product name	C5191
合同编号 Contract No	P0202111130001			执行标准 Carried Standard	JISH3110:2012
尺寸公差 (mm) Size Tolerance	厚度 (Thickness)	0.3	+0-0.015	生产日期 Dete	2021-11-16
	宽度 (Width)	41/39	+0-0.08		

性能与含量

序号 NO.	批号 Lot No.	状态 Temper	卷数 Volume	规格及重量 Material Description			化学成份 Chemioal compositon							物理性能 Physical Property		
				厚度 Thick	宽度 Width	重量 Weight	铜 Cu%	锡 Sn%	磷 P%	锌 Zn%	铅 Pb%	铁 Fe%	镍 Ni%	抗拉强度 (N/mm ²) Tensile Strength	延伸率 (%) Elongation	硬度值 (HV) Hardness
1	F2555	EH	1	0.3	41	102.1	余量	5.0-7.0	0.03-0.35	≤0.20	≤0.020	≤0.10	-	635-720	≥5%	210-230
2	F2555	EH	5	0.3	39	489.7	余量	5.740	0.180	0.033	0.004	0.009	0.038	702	6	218
				合计 (Total)			591.8	质量检验章: Quality inspection stamp								

- 一、到货后请立即验收并放于室内干燥处。
- 二、本材质证明书希妥善保管, 如对我司产品品质与异议, 持材质证明在一个月內与我司联系, 我司将竭诚为您服务。
- 三、如有质量问题, 请注明产品牌号、规格、状态、批号、收获日期等信息, 以便于追溯与改进。
- 四、本材质证明涂改、复印无效。

品质主管: 范善益

审核人: 梅旭峰





YouHua Science and Technology Co.,Ltd.

深圳市优化新材料科技有限公司

(业内首家上央视企业 前海股权挂牌代码:661131)



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传真:0755-27199258

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地址: 深圳市宝安公明镇塘尾优化工业园

网址:www.szyouhua.cn

物性表

PA9T 9T30FK

性能	Properties	测试标准 Standard	测试条件 Condition	单位 Unit	数值 Value
物理性能	Physical Properties				
密度	Specific Gravity	ASTM D792	23°C	g/cm ³	1.62
成型收缩	Mold Shrinkage,Flow	ASTM D955	Cold mold, 48 hrs	%	0.1-0.6
	Mold Shrinkage,Cross-Flow		Cold mold, 48 hrs	%	0.1-0.6
吸水率	Moisture Absorption	ASTM D570	23 °C; 50 % RH	%	0.2
填充量	Filler Content		800°C/2h	%	30±3
机械性能	Mechanical Properties				
拉伸强度	Tensile Strength	ASTM D638	50mm/min	Mpa	170
断裂伸长率	Elongation at Break	ASTM D638	50mm/min	%	2.5
弯曲强度	Flexural Strength	ASTM D790	3mm/min	Mpa	230
弯曲模量	Flexural Modulus	ASTM D790	3mm/min	Mpa	10000
悬臂梁冲击强度	Izod Impact, Notched	ASTM D256	23°C	J/m	80
熔融指数	MFR	ASTM D1238	320°C/2.16kg	g/10min	25
热性能	Thermal Properties				
热变形温度	HDT	ASTM D648	1.8 Mpa	°C	285
阻燃性能	Flammability	UL94	1.5mm		V-0
电性能	Electrical Properties				
体积电阻率	volume resistivity	IEC 60093		Ω · cm	1.0×10 ¹⁶
表面电阻率	surface resistivity	IEC 60243-1		Ω	1.0×10 ¹⁵
注塑工艺					
干燥温度 /时间	Drying temperatureand time			°C/hrs	140-150/5-8
加工温度	Processing temperature			°C	290-330
模温	Mold temperature			°C	70-160

用途

电子电器, 汽车部件, 工业零件等

备注:以上数据在优化公司实验室测得, 真实可靠, 但并非绝对值, 并不作任何商业保证。

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Test Report

No. CANEC2222380703

Date: 26 Oct 2022

Page 1 of 4

Client Name : SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

Client Address : 101, 201, PLANT 1, NO.307, GUANLAN GUIHUA ROAD, GUIXIANG COMMUNITY, GUANLAN SUB-DISTRICT, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

Sample Name : Phosphor copper terminal

Model No. : Phosphor copper terminal after plating

Client Ref. Info. : Used for USB series, HDMI series, RJ series, 1394 series, MICRO series, MINI series, DISPLAYPORT series, VGA series, DVI series, TYPE-C series, JACK series

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-057100 - GZ

Date of Sample Received : 20 Oct 2022

Testing Period : 20 Oct 2022 - 26 Oct 2022

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

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

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

Result Summary :

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium	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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Test Report

No. CANEC2222380703

Date: 26 Oct 2022

Page 2 of 4

Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-223807.003	Silver-grey/brassy metal

Remarks :

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium

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 .

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	29
Mercury (Hg)	1000	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.
 - (2) IEC 62321 series is equivalent to EN 62321 series
 - (3) ▼= 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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



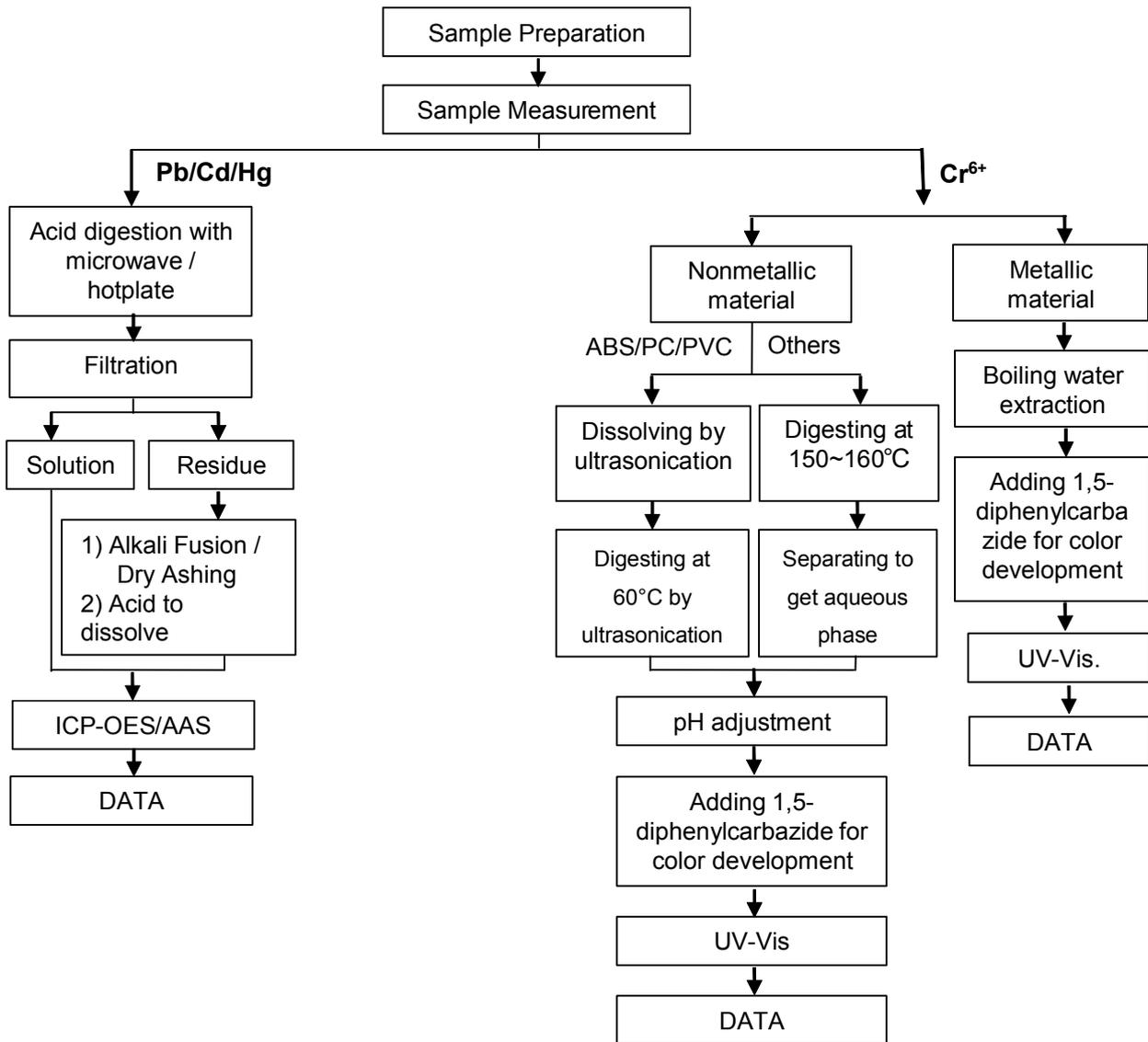
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Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

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



Sample photo:



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*** End of Report ***



Test Report

No. CANEC2222380713

Date: 26 Oct 2022

Page 1 of 6

Client Name : SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

Client Address : 101, 201, PLANT 1, NO.307, GUANLAN GUIHUA ROAD, GUIXIANG COMMUNITY, GUANLAN SUB-DISTRICT, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

Sample Name : PA9T black plastic

Model No. : PA9T plastic

Client Ref. Info. : Used for USB series, HDMI series, RJ series, 1394 series, MICRO series, MINI series, DISPLAYPORT series, VGA series, DVI series, TYPE-C series, JACK series

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-057100 - GZ

Date of Sample Received : 20 Oct 2022

Testing Period : 20 Oct 2022 - 26 Oct 2022

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

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

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

Result Summary :

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	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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Test Report

No. CANEC2222380713

Date: 26 Oct 2022

Page 2 of 6

Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-223807.013	Black plastic

Remarks :

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

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 .

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>013</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	5
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



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Test Report

No. CANEC2222380713

Date: 26 Oct 2022

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>013</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
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.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



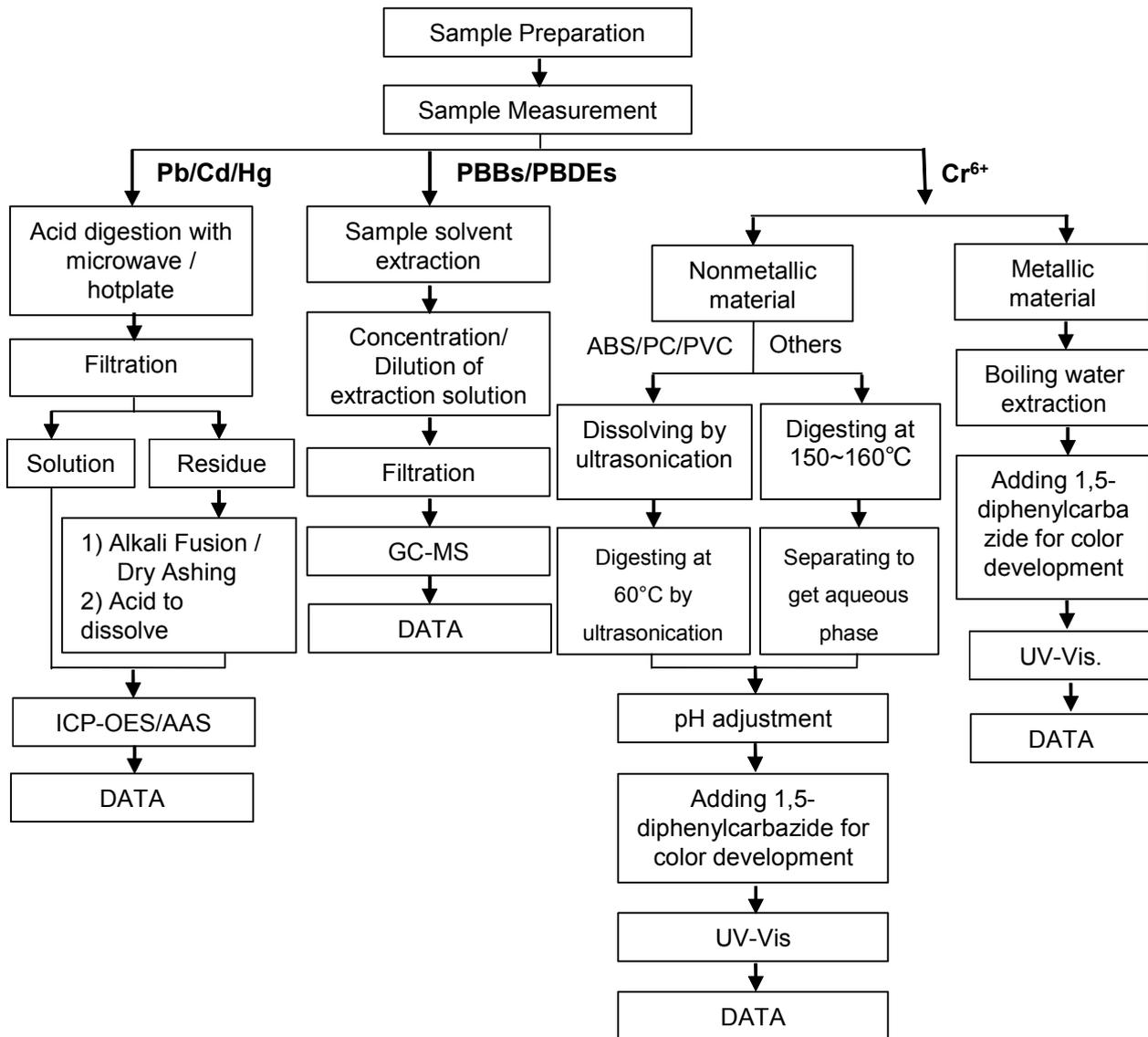
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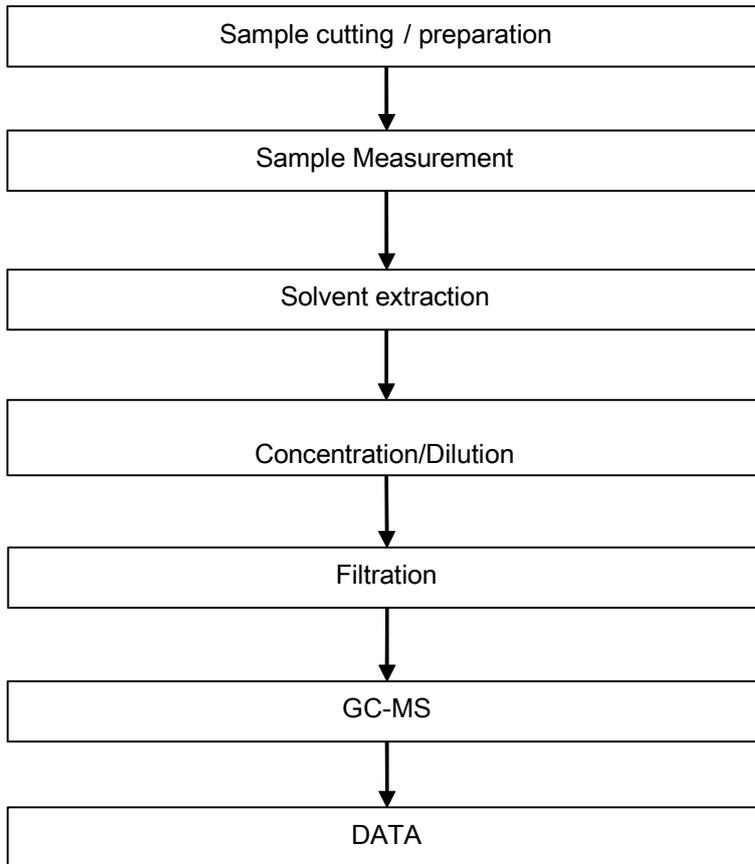
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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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Sample photo:



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Test Report

No. CANEC2218227001

Date: 30 Aug 2022

Page 1 of 8

Client Name : SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

Client Address : TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

Sample Name : Nickel(Ni)

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-047169 - SZ
 Date of Sample Received : 25 Aug 2022
 Testing Period : 25 Aug 2022 - 30 Aug 2022
 Test Requested : Selected test(s) as requested by the client.
 Test Method(s) : Please refer to next page(s).
 Test Result(s) : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	PASS
Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives	See Results

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. CANEC2218227001

Date: 30 Aug 2022

Page 2 of 8

Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-182270.001	Silver-gray plated metal

Remarks :

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

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)	1000	mg/kg	2	49
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	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. CANEC2218227001

Date: 30 Aug 2022

Page 3 of 8

<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
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.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 $\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 $\mu\text{g}/\text{cm}^2$). The coating is considered a non-CrVI based coating
 c. The result between 0.10 $\mu\text{g}/\text{cm}^2$ and 0.13 $\mu\text{g}/\text{cm}^2$ 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.

Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives

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>001</u>
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes :



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- (1) + PFOA and its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1);
- (2) ^ PFOS including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH₄ (CAS No.: 29081-56-9), PFOS-NH(OH)₂ (CAS No.: 70225-14-8), PFOS-N(C₂H₅)₄ (CAS No.: 56773-42-3), PFOS-DDA (CAS No.: 251099-16-8) and POSF (CAS No.: 307-35-7)

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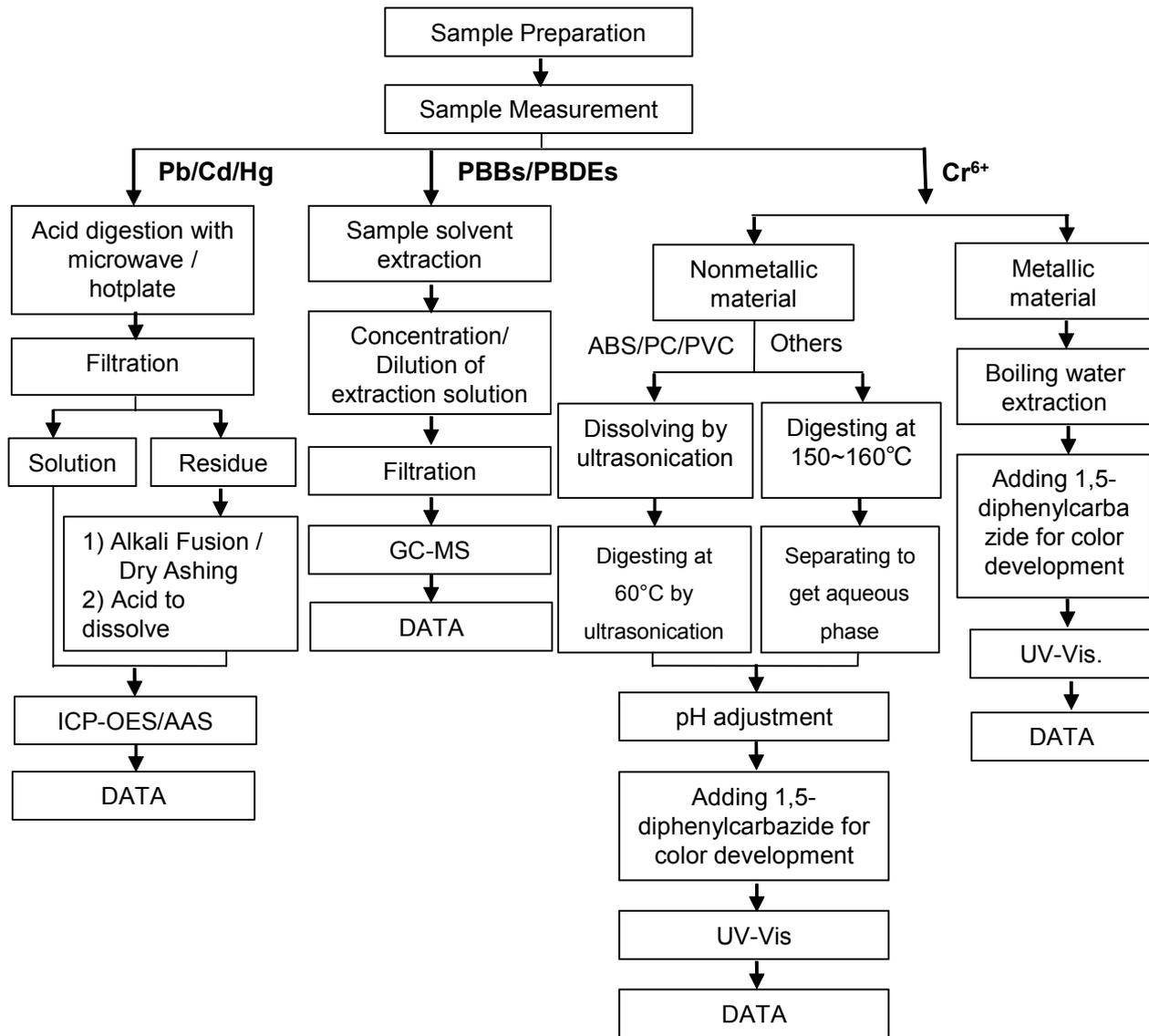
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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

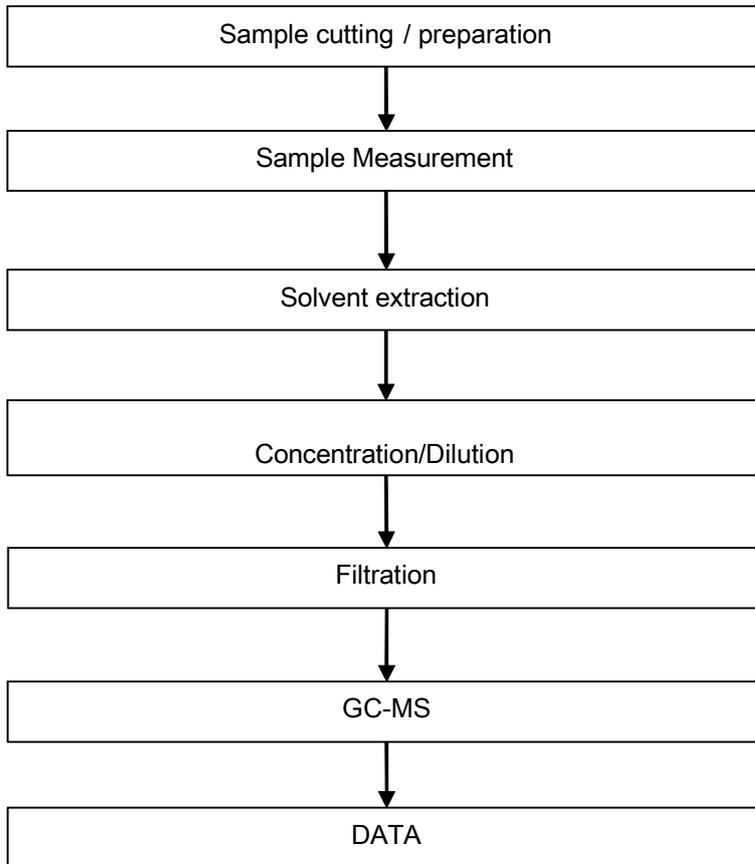


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Phthalates Testing Flow Chart

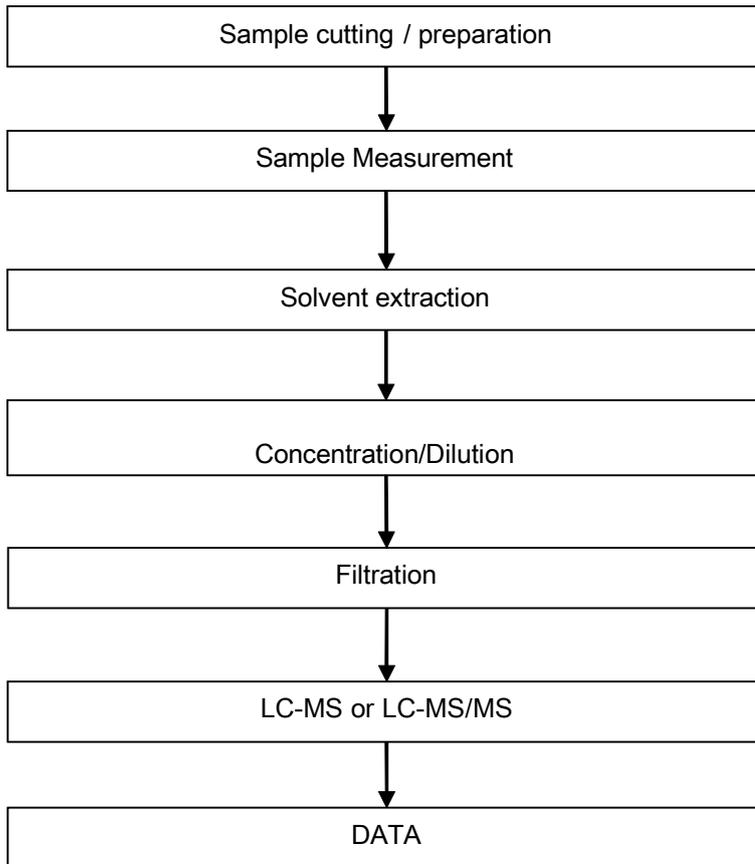


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PFOA / PFOS Testing Flow Chart



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Sample photo:



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*** End of Report ***



Test Report

No. CANEC2218227003

Date: 30 Aug 2022

Page 1 of 8

Client Name : SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

Client Address : TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

Sample Name : Bright Tin(SN)

The above sample(s) and information were provided by the client.

SGS Job No. : CP22-047169 - SZ
 Date of Sample Received : 25 Aug 2022
 Testing Period : 25 Aug 2022 - 30 Aug 2022
 Test Requested : Selected test(s) as requested by the client.
 Test Method(s) : Please refer to next page(s).
 Test Result(s) : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	PASS
Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives	See Results

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

Dongyu Xie

Dongyu Xie
 Approved Signatory

scan to see the report



87F8007D



Test Report

No. CANEC2218227003

Date: 30 Aug 2022

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Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN22-182270.003	Silver-gray plated metal

Remarks :

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

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 .

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	44
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	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. CANEC2218227003

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</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
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.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= 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.

Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives

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>003</u>
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes :



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- (2) ^ PFOS including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH₄ (CAS No.: 29081-56-9), PFOS-NH(OH)₂ (CAS No.: 70225-14-8), PFOS-N(C₂H₅)₄ (CAS No.: 56773-42-3), PFOS-DDA (CAS No.: 251099-16-8) and POSF (CAS No.: 307-35-7)

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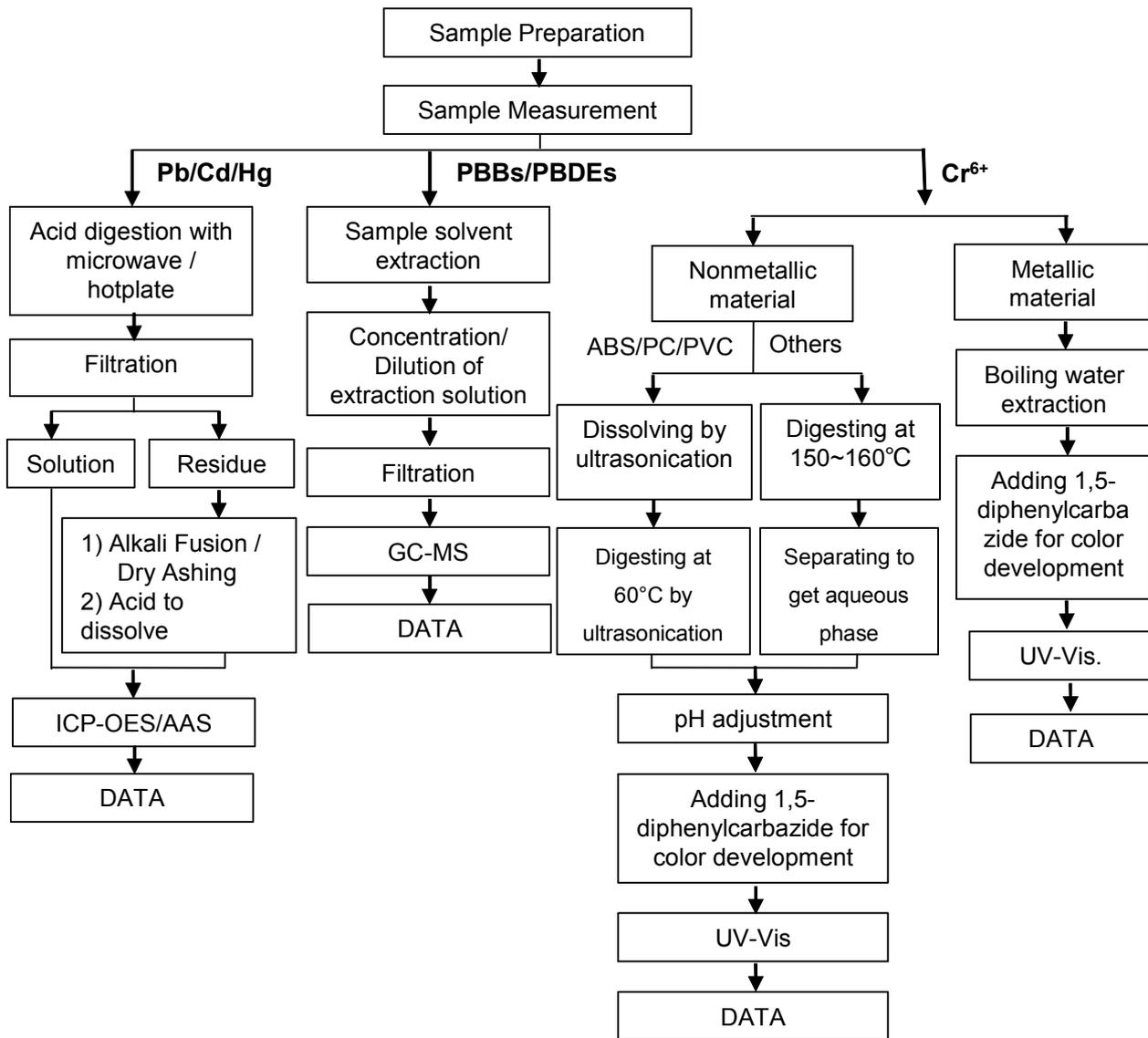
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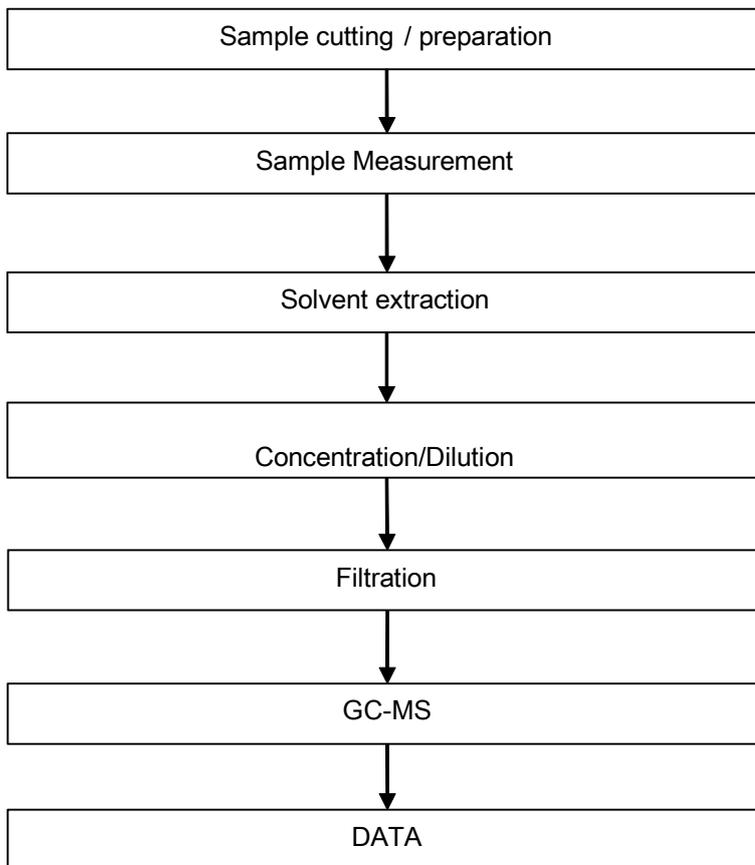
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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

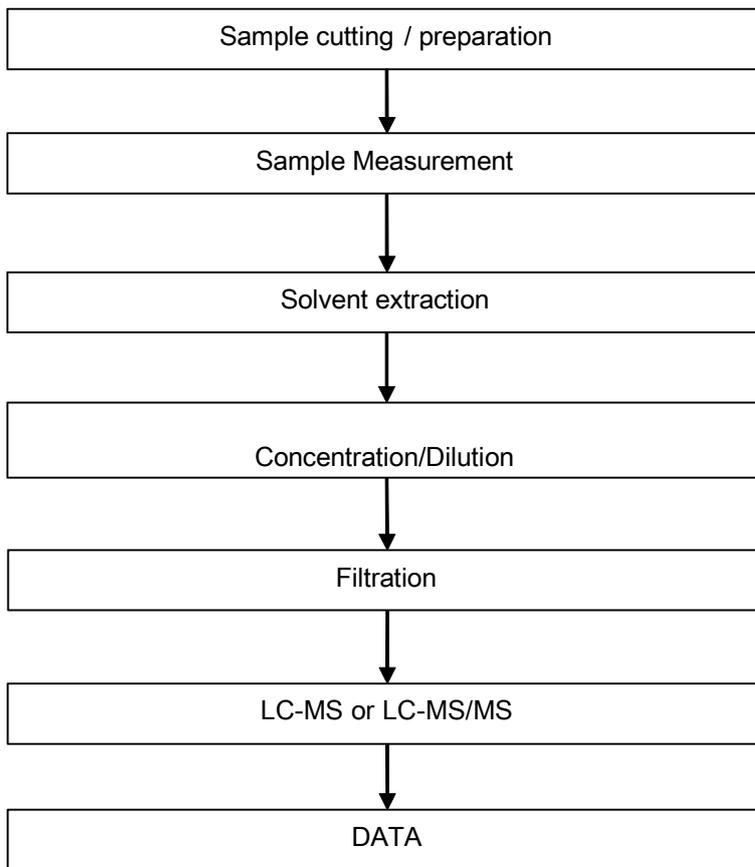


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PFOA / PFOS Testing Flow Chart



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