

承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): JK1-160-C918

品名规格 (PronameSpec): PJ-353 加高

送样日期 (Delivery Date): 2021/12/29

承认日期 (Acknowledge Date): 2021/12/29

| | | | |
|---|------------------|---------------------------|--------------------|
| 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 |
| 将成英 | 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

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hua@hlwconn.com

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

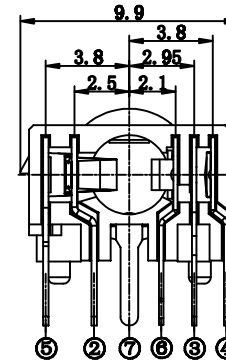
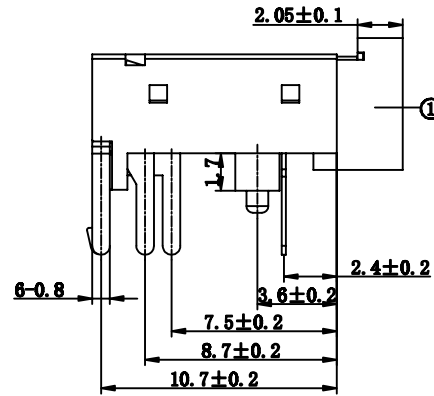
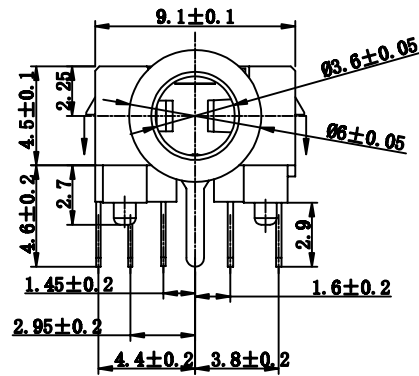


目 录

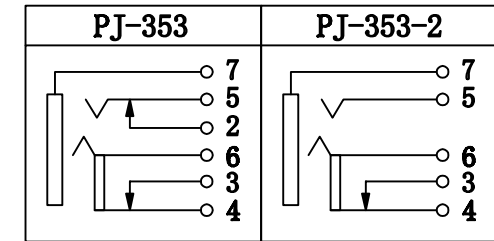
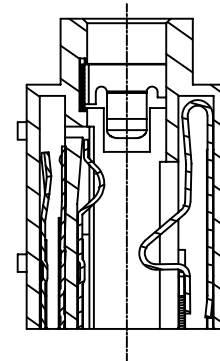
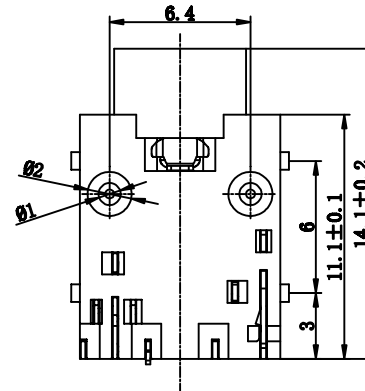
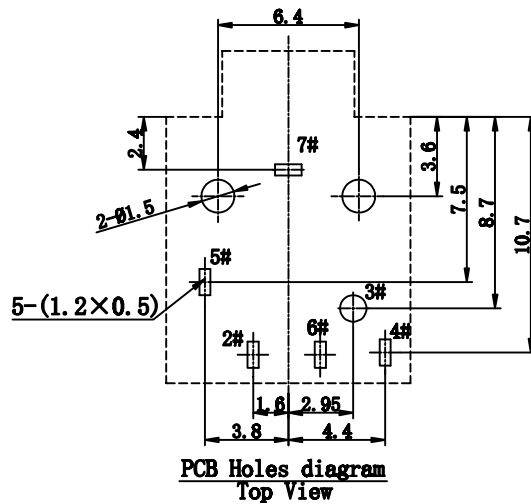
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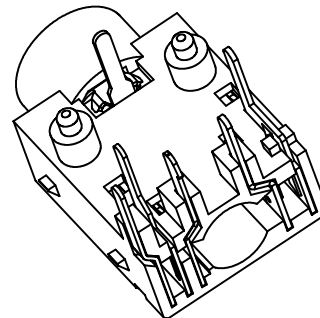
| | | |
|------|---------|-------|
| REV. | ECN.NO. | APPD. |
| A0 | / | / |



- SPECIFICATION**
1. Rating : DC 30V 0.5A;
 2. Contact resistance: $\leq 0.03 \Omega$;
 3. Insulation resistance: $\geq 100M \Omega$ (DC250V);
 4. Withstand voltage: 500VAC ;
 5. Insertion and extraction force: 3-20N;
 6. life test: 5,000 cycles.



SCHMATIC



| | | | | | | | |
|--------------------------------------|-----------|---|-------|------------|--------|--------------|--|
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | FLW 深圳市华联威电子科技有限公司 | | | | | |
| .XXX ±0.10 | | HUA LIAN WEI TECHNOLOGY ELECTRONICS CO;LTD. | | | | | |
| .XX ±0.20 | | .X' ±3' | | PART NAME: | | PJ-353 加高 | |
| .X ±0.30 | | .XX' ±2' | | PART No: | | JK1-160-C918 | |
| APPROVED | | PROJECTION: | UNIT: | SCALE: | SHEET: | REV. | |
| CHECKED | | | mm | 1:1 | 10F1 | C | |
| DRAWED | weihong | | | | | A0 | |
| DATE | 2021.7.23 | | | | | | |

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 | Gold 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



深圳市华联威电子科技有限公司

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
 2021年12月29日 版次:A1

| 料號 | JK1-160-C918 | 制令單號 | / | | 送檢單位 | 工程部 | 首件製作者 | 裝配 | | | | | |
|---|-----------------|---|---------|-----------|----------|-----------|-------|---------|----------|-----|-----|-----|----|
| 品名 | PJ-353 加高 | 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 | AQL | CRI:0 | MAJ:0.4 | MIN:0.65 | | | | |
| MIL-STD-105E(II) | | <input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加嚴 <input type="checkbox"/> 減量 | | | (5PCS) | 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 | 9.1±0.10 | D | 9.13 | 9.15 | 9.17 | 9.16 | 9.15 | √ | | | | | |
| | 4.5±0.10 | D | 4.56 | 4.53 | 4.55 | 4.54 | 4.56 | √ | | | | | |
| | 4.6±0.20 | D | 4.63 | 4.65 | 4.67 | 4.65 | 4.64 | √ | | | | | |
| | 4.4±0.20 | D | 4.46 | 4.50 | 4.49 | 4.48 | 4.46 | √ | | | | | |
| | 2.05±0.10 | D | 2.06 | 2.08 | 2.07 | 2.06 | 2.07 | √ | | | | | |
| | 2.4±0.20 | D | 2.46 | 2.45 | 2.47 | 2.45 | 2.46 | √ | | | | | |
| | 8.7±0.20 | D | 8.76 | 8.75 | 8.79 | 8.82 | 8.80 | √ | | | | | |
| | 10.7±0.20 | D | 10.76 | 10.74 | 10.75 | 10.77 | 10.78 | √ | | | | | |
| | 6.4±0.20 | D | 6.45 | 6.48 | 6.47 | 6.43 | 6.45 | √ | | | | | |
| | 14.1±0.20 | D | 14.16 | 14.13 | 14.15 | 14.17 | 14.15 | √ | | | | | |
| | 11.1±0.10 | D | 11.13 | 11.15 | 11.16 | 11.14 | 11.15 | √ | | | | | |
| | | | | | | | | | | | | | |
| 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: 欠必鋒

審核: 刘联英

檢驗員: 但芬

深圳市华联威电子科技有限公司
电镀报告表

| 品名:PJ-353 加高 端子 | | 版次:A.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|---------------|----|------------|----------|-----|----|------|------|---|---------|--------|----|------------|----------|---|---------|--------|----|------------|----------|---|---------|--------|----|------------|----------|---|---------|--------|----|------------|----------|
| 电镀规格:Ni40u", Sn40u" | | 日期:2021/10/12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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>2021/10/12</td><td>10:20:15</td></tr><tr><td>2</td><td>40u"MIN</td><td>48.3u"</td><td>OK</td><td>2021/10/12</td><td>10:20:17</td></tr><tr><td>3</td><td>40u"MIN</td><td>47.5u"</td><td>OK</td><td>2021/10/12</td><td>10:20:19</td></tr><tr><td>4</td><td>40u"MIN</td><td>42.4u"</td><td>OK</td><td>2021/10/12</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 | 2021/10/12 | 10:20:15 | 2 | 40u"MIN | 48.3u" | OK | 2021/10/12 | 10:20:17 | 3 | 40u"MIN | 47.5u" | OK | 2021/10/12 | 10:20:19 | 4 | 40u"MIN | 42.4u" | OK | 2021/10/12 | 10:20:21 |
| 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 | 2021/10/12 | 10:20:15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 40u"MIN | 48.3u" | OK | 2021/10/12 | 10:20:17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 40u"MIN | 47.5u" | OK | 2021/10/12 | 10:20:19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 40u"MIN | 42.4u" | OK | 2021/10/12 | 10:20:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2、表层电镀测试 (Sn) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <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>45.3u"</td><td>OK</td><td>2021/10/12</td><td>10:25:10</td></tr><tr><td>2</td><td>40u"MIN</td><td>46.7u"</td><td>OK</td><td>2021/10/12</td><td>10:25:12</td></tr><tr><td>3</td><td>40u"MIN</td><td>48.9u"</td><td>OK</td><td>2021/10/12</td><td>10:25:14</td></tr><tr><td>4</td><td>40u"MIN</td><td>42.4u"</td><td>OK</td><td>2021/10/12</td><td>10:25:16</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 | 45.3u" | OK | 2021/10/12 | 10:25:10 | 2 | 40u"MIN | 46.7u" | OK | 2021/10/12 | 10:25:12 | 3 | 40u"MIN | 48.9u" | OK | 2021/10/12 | 10:25:14 | 4 | 40u"MIN | 42.4u" | OK | 2021/10/12 | 10:25:16 |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 40u"MIN | 45.3u" | OK | 2021/10/12 | 10:25:10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 40u"MIN | 46.7u" | OK | 2021/10/12 | 10:25:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 40u"MIN | 48.9u" | OK | 2021/10/12 | 10:25:14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 40u"MIN | 42.4u" | OK | 2021/10/12 | 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 | / | 试验起始日期 | 2021年12月28日 20:00 时起 |
| | | DATE | 2021年12月29日 08:00 时止 |
| 样品名称 | PJ-353 加高 | 试验数量 | 5PCS |
| P/N | JK1-160-C918 | | |

试验条件 (TEST CONDITION)

- 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: 12小时 (H)

判定方法 (ADFUSGD METHOD)

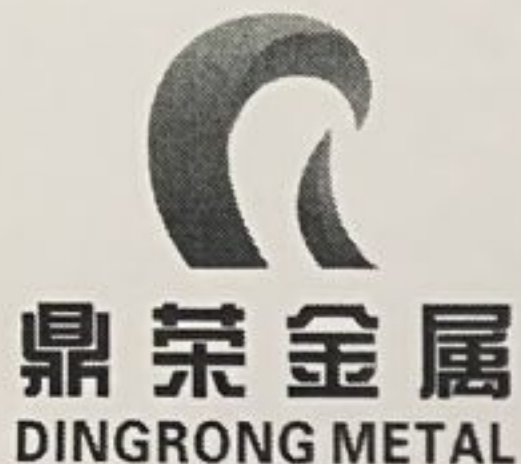
试验后以20倍放大镜观察、无蓝、绿色腐蚀物之现象 (不包含折弯处), 即判定合格. (Inspext the ecimen at 20 xmagnification no blue or green corrosion products are acceptable)

| 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



Test Report

No. CANEC2119174203

Date: 22 Oct 2021

Page 1 of 4

SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

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

The following sample(s) was/were submitted and identified on behalf of the clients as : C5191 Terminal

SGS Job No. : CP21-055214 - GZ
Model No. : C5191 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
Date of Sample Received : 18 Oct 2021
Testing Period : 18 Oct 2021 - 22 Oct 2021
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

Allie Chen

Allie Chen
Approved Signatory

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7C5DB205



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

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Test Report

No. CANEC2119174203

Date: 22 Oct 2021

Page 2 of 4

Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|--------------|------------------|--------------------------|
| SN1 | CAN21-191742.003 | Silver-grey/brassy metal |

Remarks :

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

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 | 34 |
| Mercury (Hg) | 1,000 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI))▼ | - | µg/cm ² | 0.10 | ND |

Notes :

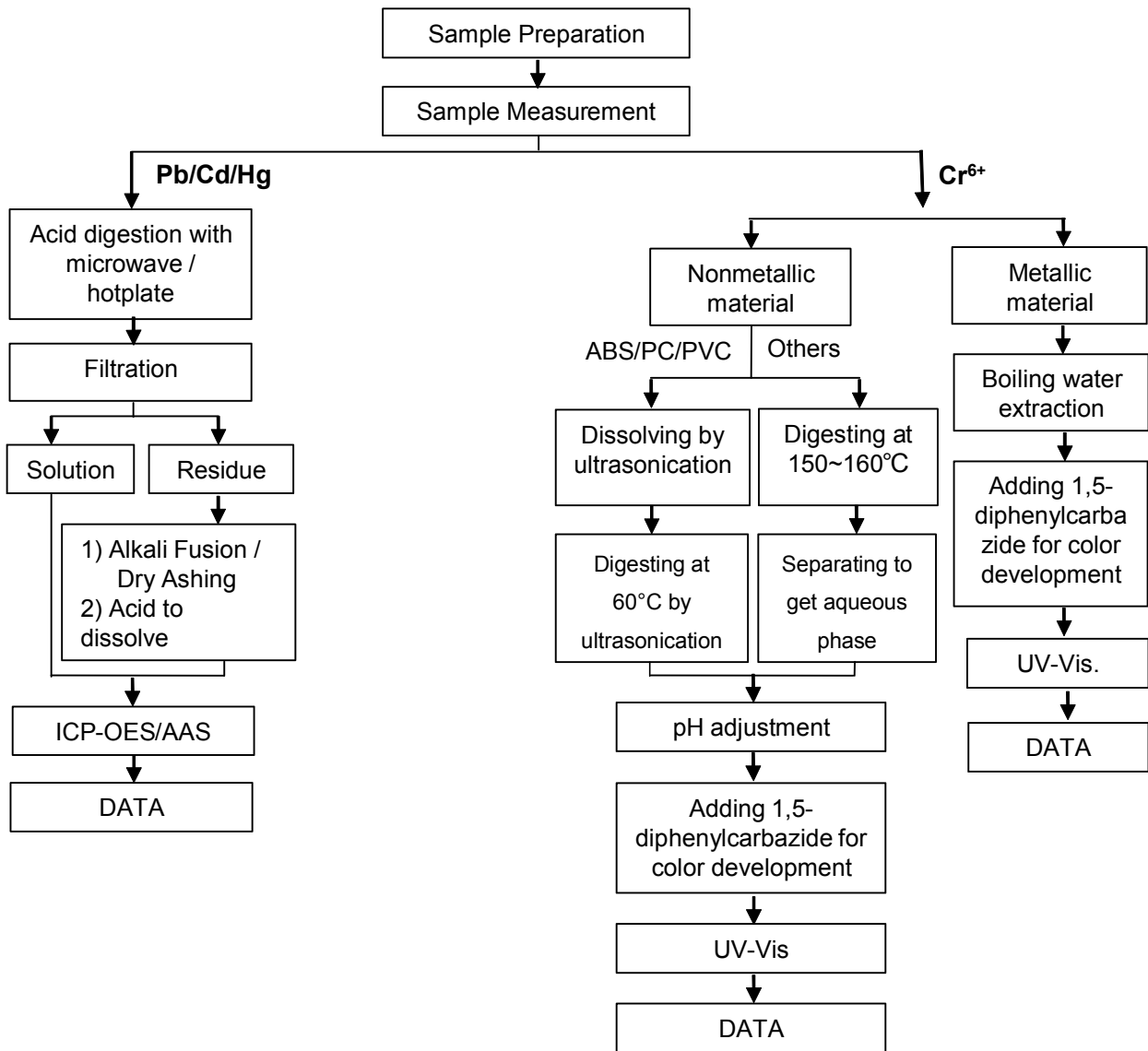
- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration 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.



ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

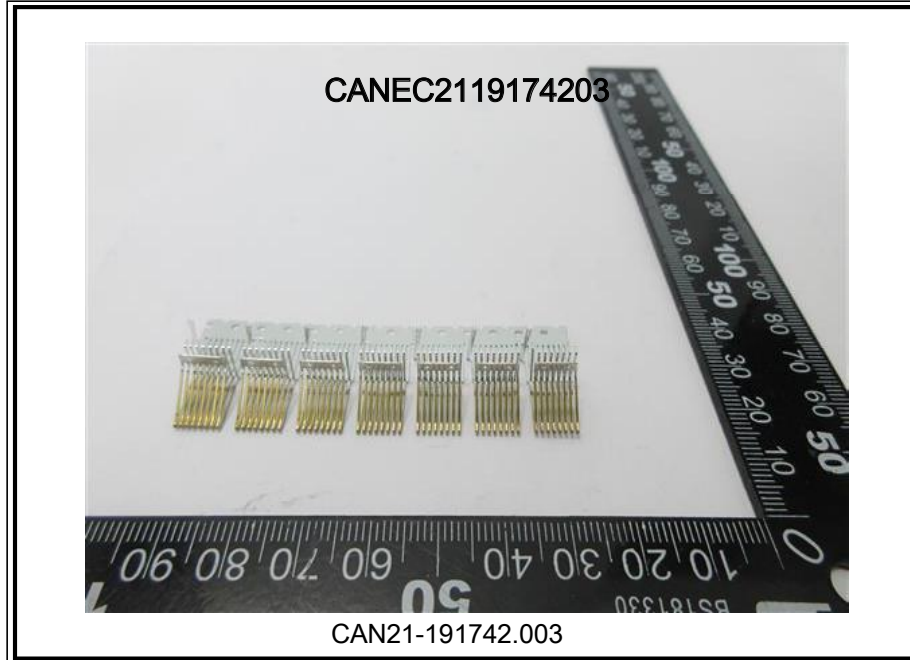
1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded).



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Sample photo:



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Test Report

No. CANEC2117633803

Date: 27 Sep 2021

Page 1 of 8

SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

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

SGS Job No. : CP21-051017 - SZ

Date of Sample Received : 18 Sep 2021

Testing Period : 18 Sep 2021 - 27 Sep 2021

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

Allie Chen

Allie Chen
Approved Signatory

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CANEC2117633803



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

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Test Report

No. CANEC2117633803

Date: 27 Sep 2021

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Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|--------------|------------------|--------------------------|
| SN1 | CAN21-176338.003 | 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, 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 | 003 |
|-------------------------------|-------|--------------------|------|-----|
| Cadmium (Cd) | 100 | mg/kg | 2 | ND |
| Lead (Pb) | 1,000 | mg/kg | 2 | 37 |
| 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. CANEC2117633803

Date: 27 Sep 2021

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| <u>Test Item(s)</u> | <u>Limit</u> | <u>Unit</u> | <u>MDL</u> | <u>003</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.
- (2) 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
- (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 |



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Notes :

- (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)



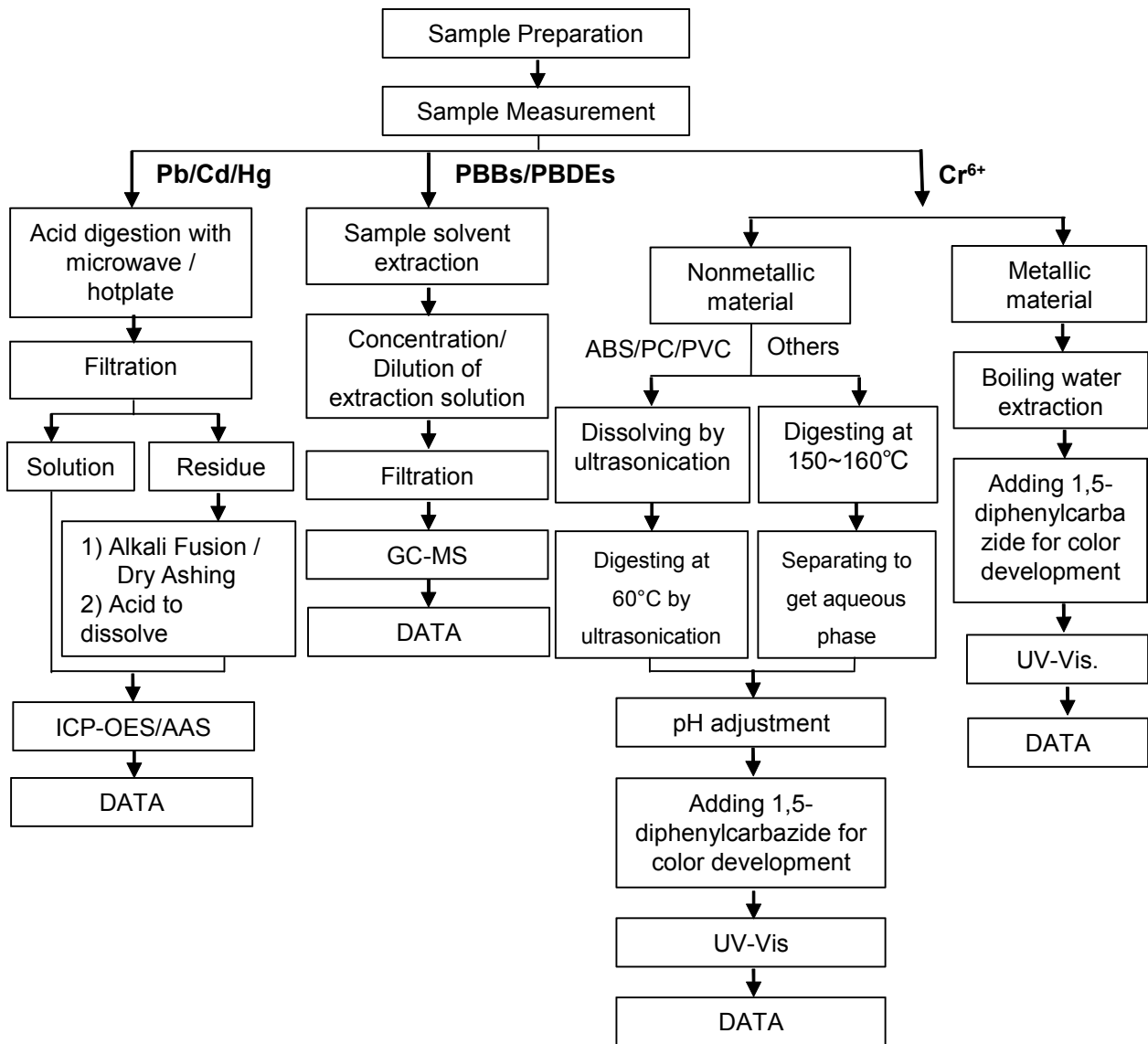
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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

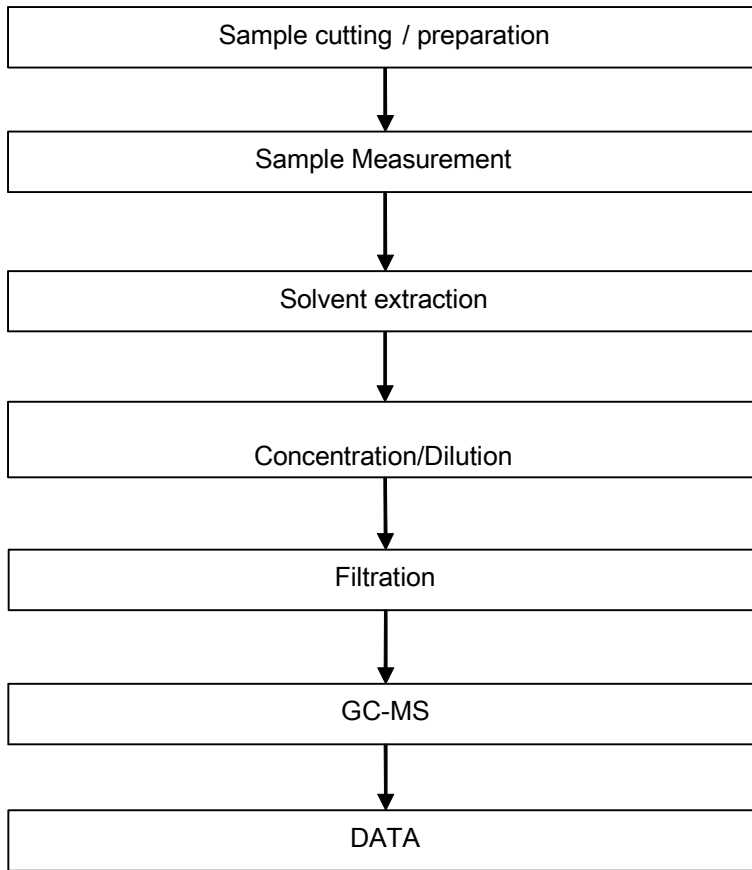


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Phthalates Testing Flow Chart

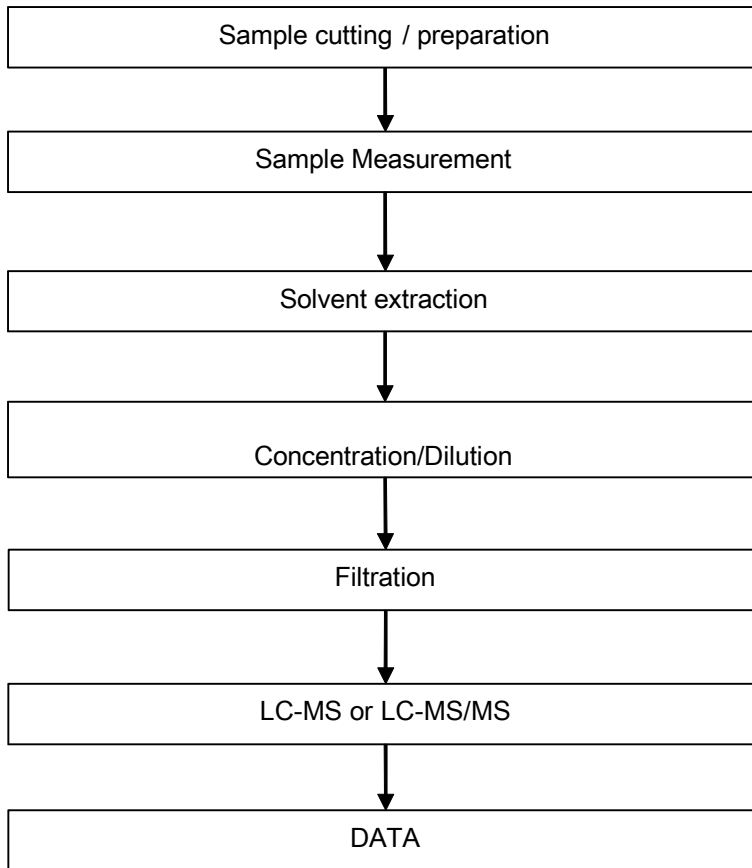


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PFOA / PFOS Testing Flow Chart



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Sample photo:



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Test Report

No. CANEC2117633802

Date: 27 Sep 2021

Page 1 of 8

SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

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

SGS Job No. : CP21-051017 - SZ

Date of Sample Received : 18 Sep 2021

Testing Period : 18 Sep 2021 - 27 Sep 2021

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

Allie Chen

Allie Chen
Approved Signatory

scan to see the report



CANEC2117633802



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 | CAN21-176338.002 | 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, 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 | 29 |
| 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.
- (2) 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
- (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>002</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 |



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Notes :

- (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)



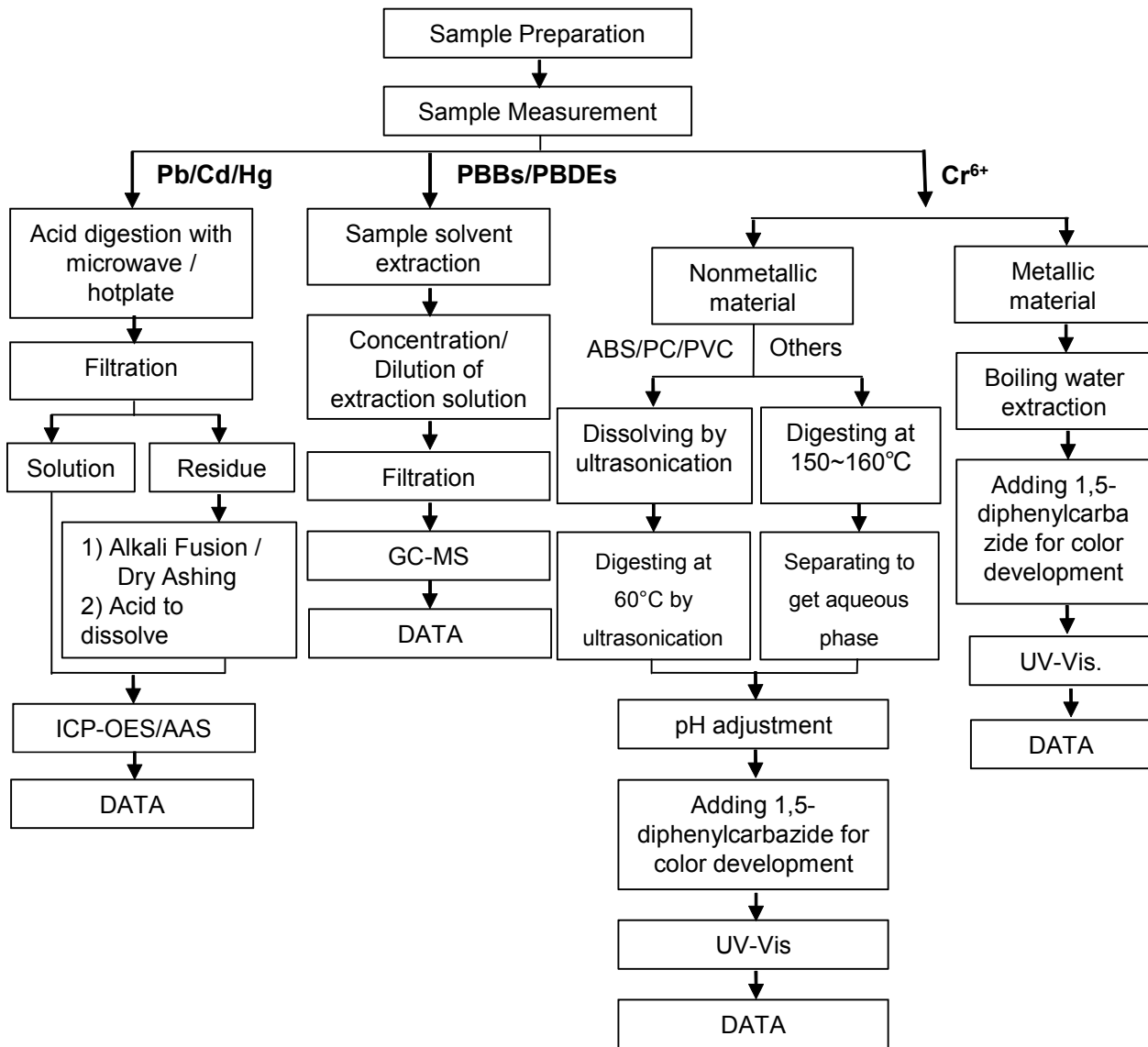
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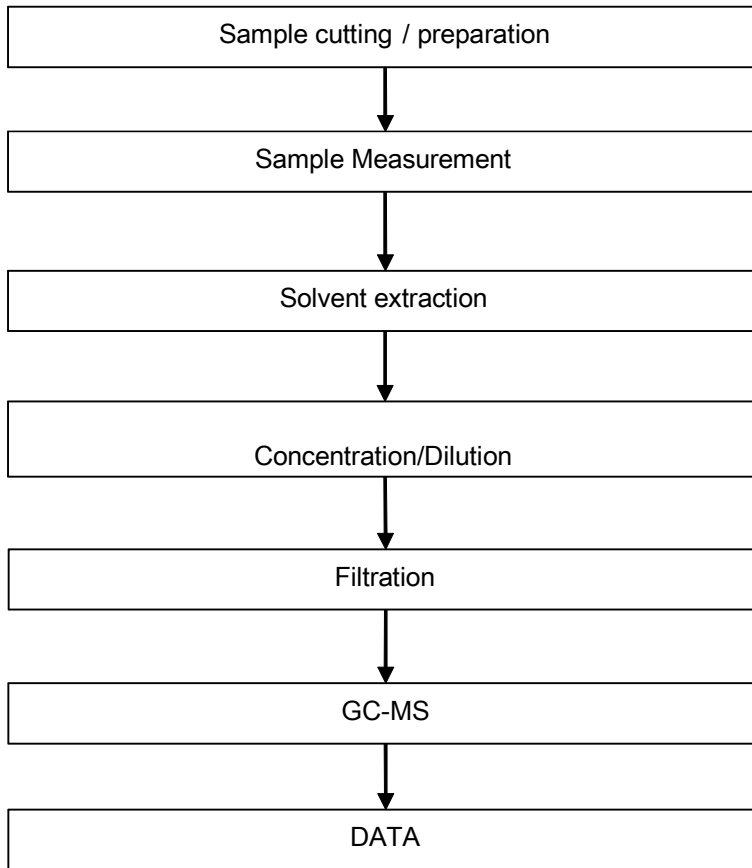
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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

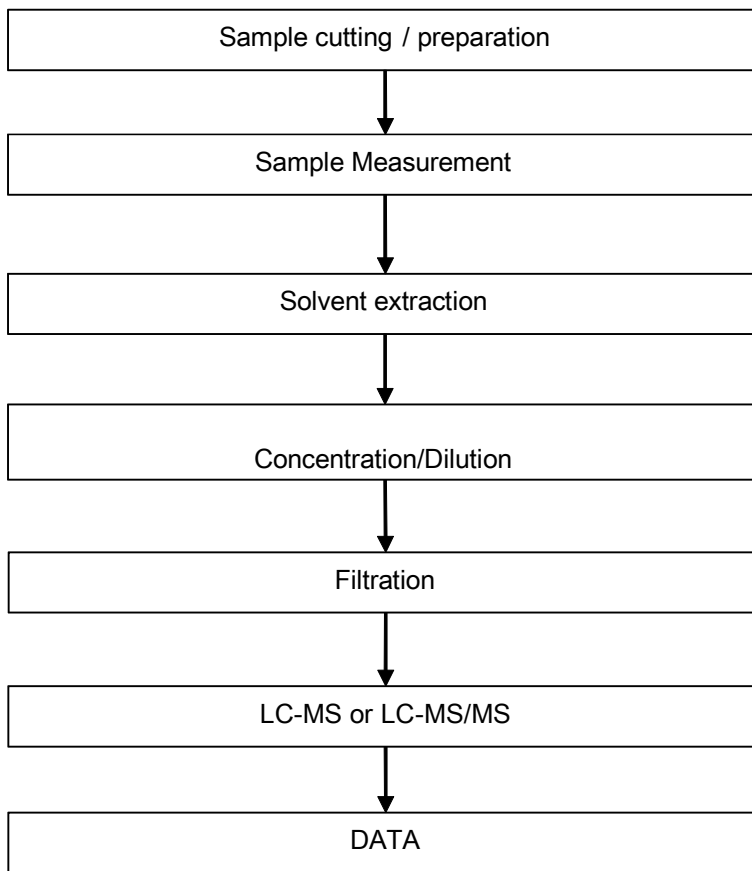


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PFOA / PFOS Testing Flow Chart



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