



WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

DONGGUAN AEON TECH CO.,LTD.(CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER: 啟基

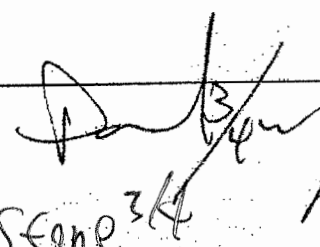
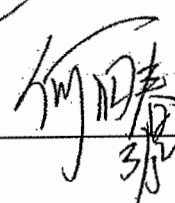
PART NAME: RF Antenna Assembly

PART NO.:

REVISION:

W. Y. P/NO.: C478-690080-A(SRF2202158)

REV.: X1

	MANUFACTURER	CUSTOMER
APPROVED BY :	 SEONE	
DATE :		

WHA YU GROUP

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

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DONGGUAN AEON TECH CO., LTD.(CHINA)

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Contents

<i>Item</i>	<i>Description</i>	<i>Page</i>
1.	規格表	 1
2.	成品圖	 2
3.	測試報告	 3~11
4.	Cable 材質證明	 12~13
5.	Connector 材質證明	 14
6.	RoHS測試報告	 15~175
7.	RoHS排外條款	 176

RF Antenna Assembly

Specification

1. Electrical Properties : With Housing

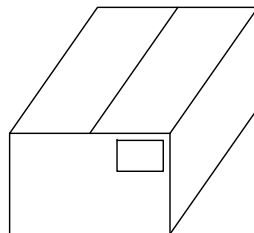
- 1.1 Frequency Range..... 4.9~5.825 GHz
- 1.2 Impedance 50Ω Nominal
- 1.3 VSWR 1.92:1 Max.
- 1.4 Return Loss 10 dB Min.
- 1.5 Peak Gain 7 dBi (excluding cable loss)
- 1.6 Cable Loss 0.45dB Max.
- 1.7 Radiation Omni-directional
- 1.8 Admitted Power..... 1 W
- 1.9 Polarization..... Linear; Vertical
- 1.10 Cable..... RG-178 Cable
- 1.10 Connector..... N-Type Plug/Standard Connector

2. Physical Properties :

- 2.1 Antenna Body PC;Sabic EXL9330
- 2.2 Operating Temp. -40 ~ +80 °C
- 2.1 Storage Temp. -40 ~ +80 °C
- 2.2 Color White



A technical drawing of a cable assembly. The cable has a braided shield and a connector at the end. The drawing is oriented horizontally.



Note: *為重點尺寸標示
成品符合 IPX7

2	Connector	N Plug Standard	1	
1	Antenna Body	(CD-990)PC;Sabic EXL9330	1	White
NO	DESCRIPTION		Q'TY	REMARK

CUSTOMER'S SINGATURE	XX.	±5.0	APPROVED Spring 2022.02.08	CUSTOMER: 啟 暮			M.gear Wha Yu Group THIS DRAWING, AND IT'S INHERANT DESIGN CONCEPTS, ARE THE PROPERTY OF WHA YU AND AS SUCH MAY NOT BE COPIED, REPRODUCED, OR GIVEN TO THIRD PARTIES WITHOUT THE WRITTEN CONSENT OF WHA YU.	
	X.	±3.0		PART NO :				
	.X	±1.0		PART NAME: RF Antenna Assembly				
	.XX	±0.5	CHECKED	W.Y P/NO : C478-690080-A				
	.XXX	±0.1		DRAWING Ping 2022.02.08	REV	UNIT		FILE : SRF2022158
	 							
				X1	mm	SHEET : 1/1		

5G Antenna Design For Outdoor

V1.0

Document Number	SRF2017673
1st Released Date	12/27/2014
Last Released Date	12/27/2014
Author	Tim
Review by	Sean

Electrical Specification

Rough description	5G Antennas for Outdoor.
Dimensions	(L)215mm*(W)22mm*(T)11mm
Impedance	50 Ω
Test environment	
Spectrum	None
Freq. Range	4900~5850 MHz
Antenna type	PCB Type
Gain	7 dBi
VSWR	1.92 : 1
Radiation	Omni
Polarization	Linear (V)
HPBW / H	None
HPBW / E	None
Rad. efficiency	None
Connector type	N-type (Plug-R)
Cable type	RG-178
Cable length	35 mm
Isolation	None

1. Antennas' setup and environment



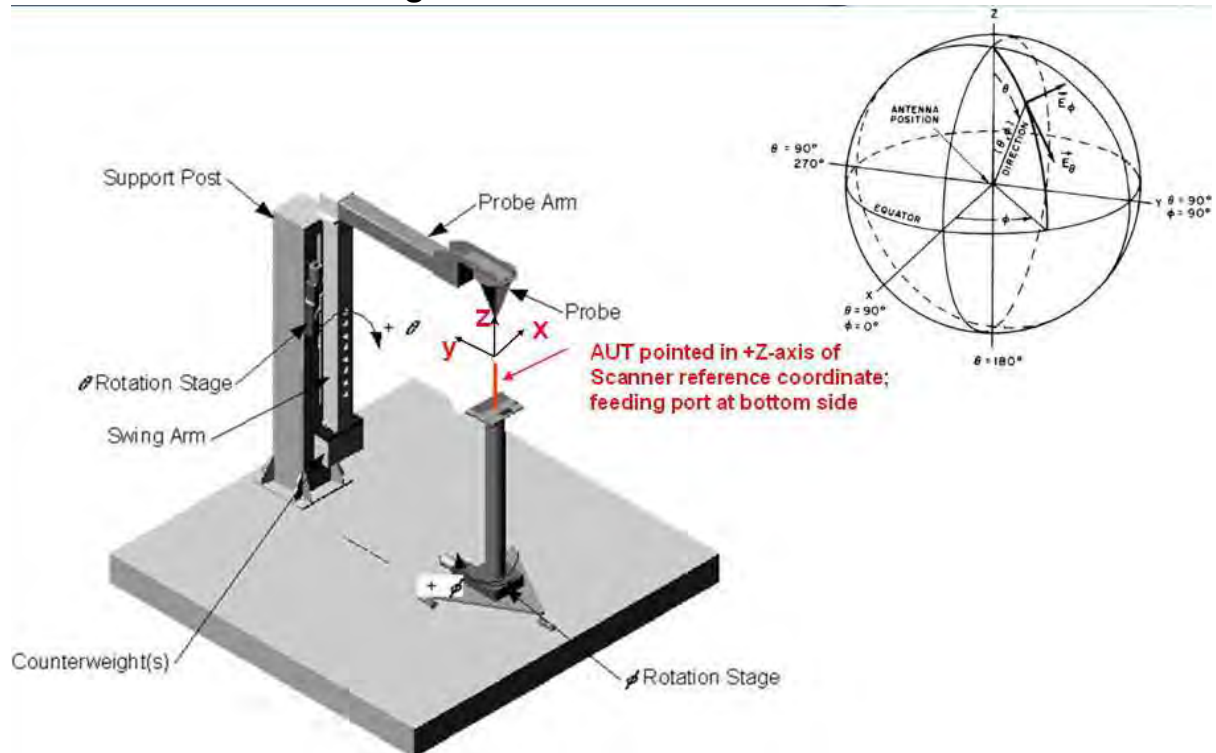
1.1 S11 Test Results

1.1.1 Antenna 1

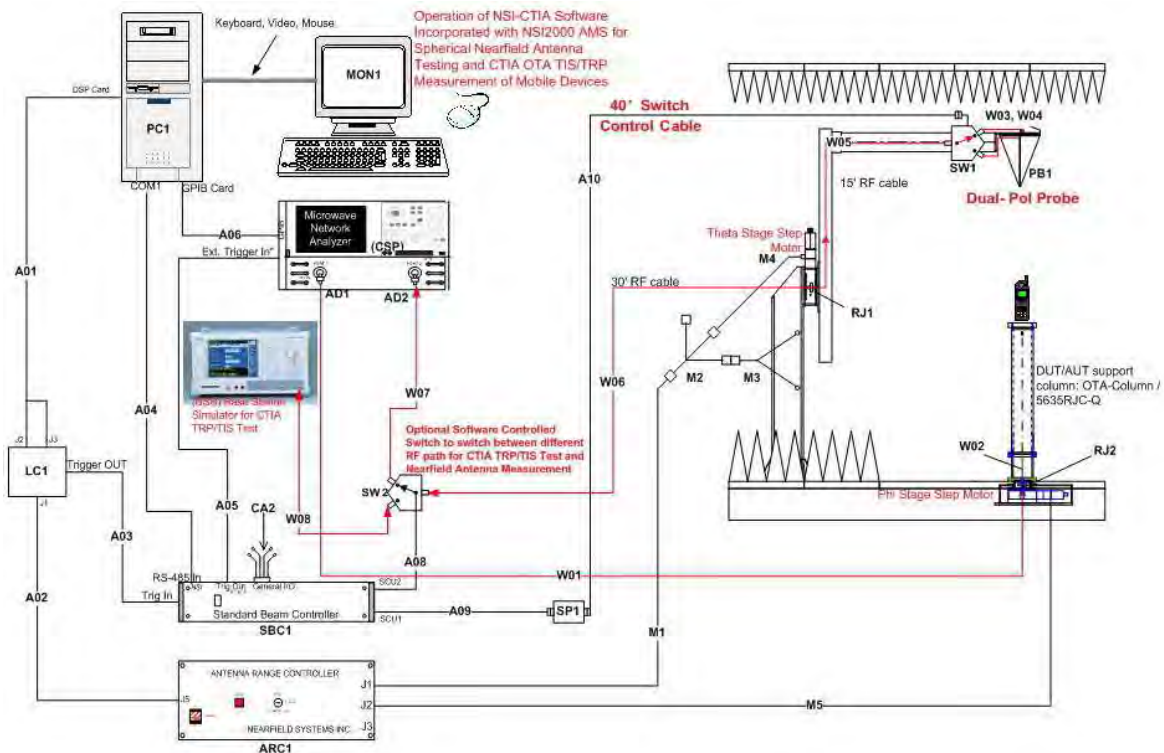


2. Gain & Patterns test results

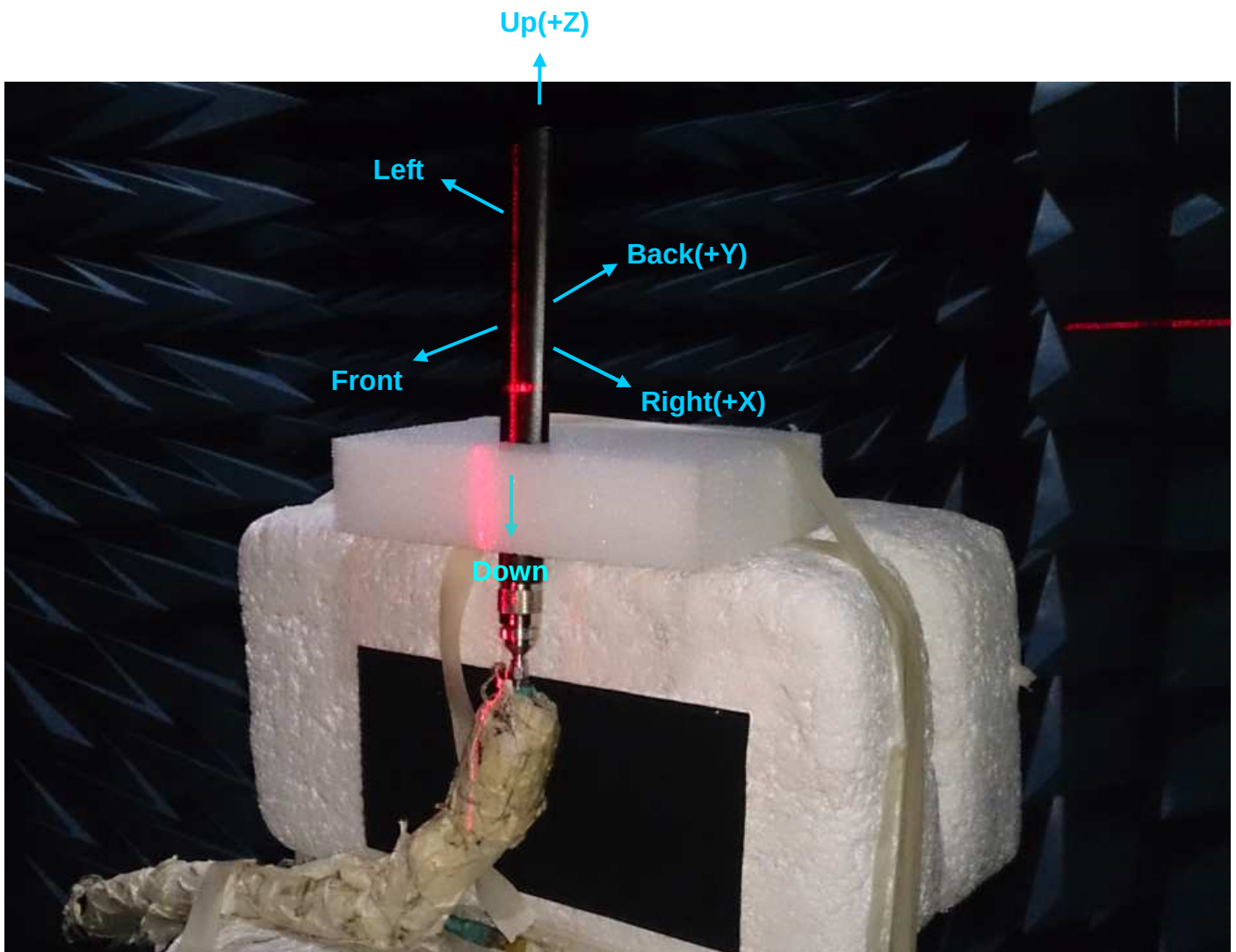
2.1 Measurement setting



NFC-500S 3D Chamber Coordinate System Definition



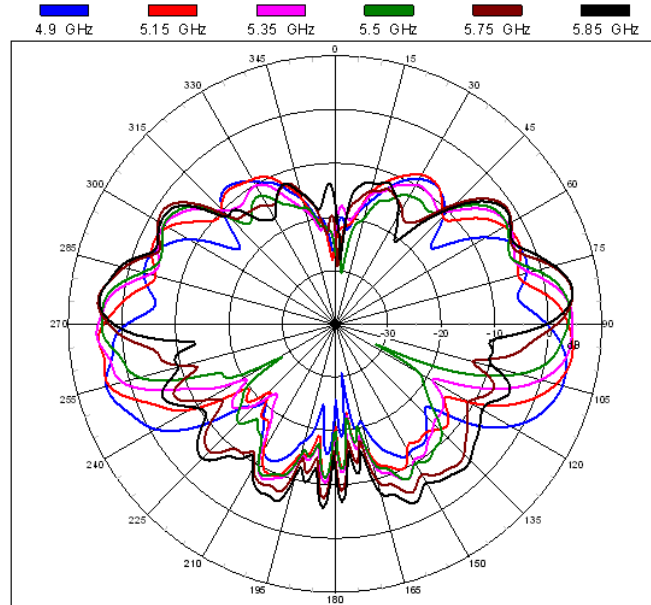
Configuration of NFC-500S 3D Chamber



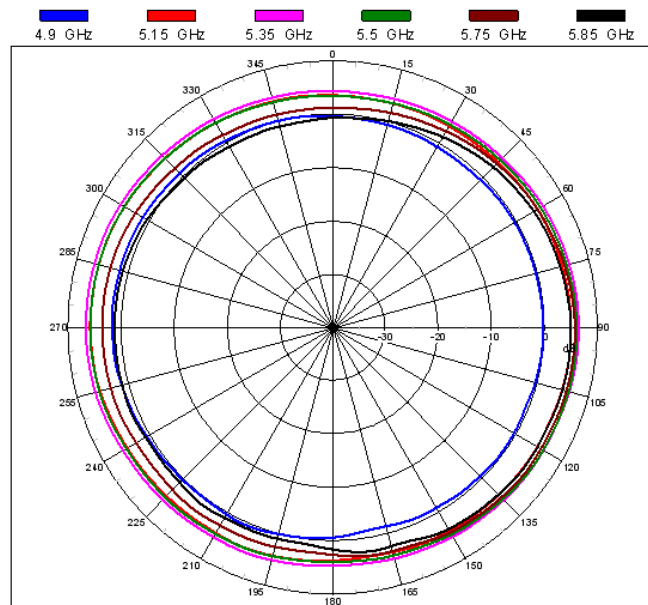
	XY	YZ	XZ
0°	Right	Up	Up
90°	Back	Back	Right
180°	Left	Down	Down
270°	Front	Front	Left

2.2 2D patterns

2.2.1 Antenna



X-Z Plane (E-total)



X-Y Plane (E-total)

Summary

2.3 Return Loss

Frequency	Antenna (dB)
4900MHz	-16.04
5150MHz	-17.98
5350MHz	-17.23
5500MHz	-16.19
5750MHz	-27.4
5850MHz	-14.27

2.4 3D total Peak Gain & Efficiency

Frequency	Antenna	
	Peak Gain(dBi)	Efficiency(%)
4900MHz	6	72.98
5150MHz	6.91	84.34
5350MHz	6.72	82.24
5500MHz	6.34	70.16
5750MHz	6.89	71.59
5850MHz	7.08	71.72



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JiangYin KaiBo Communication Technology CO.,LTD.

DATE : 2021-11-1

Page: 1 to 3

规 格 书

Specification

系列 RG178 (50 Ω)
Series



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DATE : 2021-11-1

Page: 2 to 3

1. 结构图/Configuration



2. 结构/Construction:

项目/Item		详细资料/Details
①内导体 Inner conductor	材料/Material	镀银铜包钢/Silver plated copper clad steel
	构成(根/mm) /Composition (No. /mm)	7/0.102±0.005
	标称直径/NOM. O. D	0.306±0.02
②绝缘层 Insulation	材料/Material	聚全氟乙丙烯/FEP
	标称外径/NOM. O. D	0.865±0.03
	颜色/Color	Natural
③外导体 Outer conductor	材料/Material	镀银铜线 Cu-silver plated
	形式 Type	编织/Weaving
	构成/Composition	16/3/0.1±0.005
	标称直径/NOM. O. D	1.32±0.05
④护套层 Jacket	材料/Material	聚全氟乙丙烯/FEP
	标称外径/NOM. O. D	1.78±0.1
	颜色/Color	棕色/Brown

3. 性能特性 Performance characteristics

项目/Item	单位/Unit	详细资料/Details	
电容/Capacitance	pF/m	98	
特性阻抗/Conductor Resistance	Ω	50±3.0	
耐压强度/Dielectric Strength	A. C V/lmin	1000	
最大工作频率/Max. oper. frequency	MHz	6000	
抗拉强度/Tensile strength	kgf/mm ²	1.76	
衰减/Attenuation	/	频率/Frequency	dB/1m
		1GHz	≤1.7
		2GHz	≤2.42
		3GHz	≤3.08
		4GHz	≤3.63
		5GHz	≤4.15
		6GHz	≤4.8
驻波比/Standing wave (0-6GHz)	/	≤1.3	



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DATE : 2021-11-1

Page: 3 to 3

4. 机械性能特性 Mechanical characteristics

项目 Item	单位 Unit	详细资料/Details
最小弯曲半径(一次) Min.bending radius static	mm	8
工作温度范围 Operating temperature	℃	-50to200

5. 使用提示 Use tips

存储环境 Storage environment	温度：30℃以下；湿度：20%~65%
最佳保存周期 The best save cycle	2 个月，2 个月以上锡效果变差, 但电性能不受影响，夏季高温高湿环境开剥后需尽快流转
加工温度 Processing temperature	250℃~260℃的情况下，可短时间承受；300℃以上会出现热分解现象
铁氟龙收缩 Teflon Shrink	绝缘层收缩 $\leq 0.2\text{mm}$ ；护套层收缩 $\leq 0.3\text{mm}$

6. 包装 Packing

标准单位包装长度为 500 米/盘, 每盘最多允许 3 个接头, 接头最短长度 10 米, 在搬运过程中不能损坏包装。

Standard unit for the 500m/reel length of packaging, each set up to allow 3 joints, the joint shortest length of 10m, The finished cable shall be packed not be damaged during transportation.

7. 其他 Other

特殊加工工艺，请与供方协商后使用。

Special processing technology, please use after consultation with the supplier.



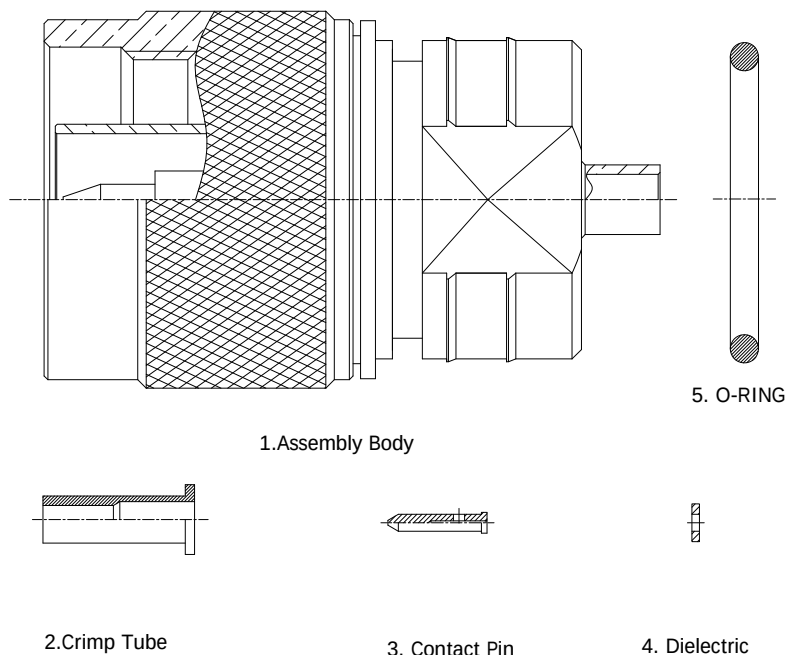
譚裕實業股份有限公司

WHA YU INDUSTRIAL CO., LTD

Connector 材質證明書

譚裕料號 Whayu P/N	100-2004075-AZ	產品名稱 Product Name	N Plug Standard For RG-178
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結構圖面



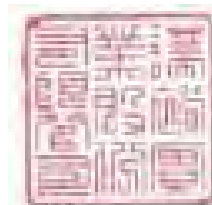
材質成份

表面處理

1	Assembly Body	Brass	Cu	Pb	Fe	Fe+Sn	Zn		Nickel Plated
2	Crimp Tube	Brass	Cu	Pb	Fe	Fe+Sn	Zn		Nickel Plated
3	Contact Pin	Brass	Cu	Pb	Fe	Fe+Sn	Zn		Gold Plated
4	Dielectric	Teflon	PTFE						
5	O-RING	Silicon	Silicon						Red

Remark :

請蓋公司章



ET-QA-0017-A2

SGS Test Report

Product : RF Antenna Assembly

Content

No	Description		Report No.	Page
1	Cable	外被 色母 編織 絕緣 導體	A2210176777101001E HKTEC2102511719 SHAEC2127051115 NGBML2200124301 A2220020280101002	P.16~73
2	Connector	Brass PTFE Gold Plated Ni Plated Silicone	CANEC2110983505 SHAEC2118528401 SZXEC2103405301 SZXEC2103405307 CANEC2103066123	P.74~103
3	Antenna Body	PC;Sabic EXL9330 INK	A2210204804101001 SZXEC2100525201	P.104~117
4	PCB	LNB33 Green ink White ink OSP	CANEC2103944807 A221043195210100109E SHAEC2125040401 A2210278310101017	P.118~157
5	泡棉背膠	EVA G4000	CANEC2124348309 ETR22105664 ETR22105665	P.158~175

Result for RoHS : PASS



报告编号 A2210176777101001E

Report No. A2210176777101001E

第 1 页 共 8 页

Page 1 of 8

报告抬头公司名称 金华永和氟化工有限公司

Company Name JINHUA YONGHE FLUOROCHEMICAL CO., LTD

shown on Report

地址

浙江省金华市经济技术开发区(金西片区)青莲路896号

Address

QINGLIAN ROAD 896#, ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ZONE (THE WEST), JINHUA, ZHEJIANG

以下测试之样品及样品信息由申请者提供并确认

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

样品名称 聚全氟乙丙烯树脂

Sample Name FEP

材料名称 聚全氟乙丙烯树脂

Material FEP

样品接收日期 2021.05.12

Sample Received Date May 12, 2021

样品检测日期 2021.05.12-2021.05.17

Testing Period May 12, 2021 to May 17, 2021

检测要求

根据客户要求, 对所提交样品中的铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)进行测试。

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).

检测依据/检测结果

请参见下页。

Test Method/Test Result(s)

Please refer to the following page(s).



主 检 蒋雪庆

张琳

张琳

技术经理 Technical Manager

审 核

Reviewed by

日 期

Date

陈沙

2021.05.17

No. R219921752

宁波市检验检测中心有限公司
Ningbo City Center Testing International Co., Ltd.宁波高新区菁华路76号厂区东首第一、二层
1-2F, Eastern Factory, No. 76, Jinghua Road, High-Tech Zone, Ningbo, Zhejiang, China

检测报告
Test Report

报告编号 A2210176777101001E
Report No. A2210176777101001E

第 2 页 共 8 页
Page 2 of 8

结论 Conclusion

测试样品 Tested Sample	依据标准/指令 According to standard/directive	结果 Result
提交样品 Submitted Sample	欧盟RoHS指令2011/65/EU及其修订指令(EU) 2015/863 RoHS Directive 2011/65/EU with amendment (EU) 2015/863	符合 PASS

符合表示检测结果满足欧盟RoHS指令2011/65/EU及其修订指令(EU) 2015/863要求的限值。
PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.

检测报告

Test Report

报告编号 A2210176777101001E

Report No. A2210176777101001E

检测依据 Test Method

第 3 页 共 8 页

Page 3 of 8

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	参考 IEC 62321-5:2013 Refer to IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	参考 IEC 62321-5:2013 Refer to IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	参考 IEC 62321-4:2013+AMD1:2017 CSV Refer to IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 和/或 IEC 62321-5:2013 测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

检测报告
Test Report

报告编号 A2210176777101001E

Report No. A2210176777101001E

第 4 页 共 8 页

Page 4 of 8

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
铅 Lead (Pb)	N.D.	2 mg/kg	1000 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg	100 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg	1000 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg	1000 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
多溴联苯 Polybrominated Biphenyls (PBBs)			
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg	1000 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg	
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg	
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg	
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg	
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg	
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg	
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg	
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg	
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg	

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)			
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg	1000 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg	
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg	
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg	
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg	
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg	
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg	
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg	
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg	
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg	

检测报告
Test Report

报告编号 A2210176777101001E

Report No. A2210176777101001E

第 5 页 共 8 页

Page 5 of 8

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL	限值 Limit
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)			
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg

样品/部位描述

无色透明塑料颗粒

Sample/Part Description

Colorless transparent plastic grains

备注: 对于检测铅, 镉, 汞之样品已完全溶解。

-N.D. = 未检出 (小于方法检出限)

-mg/kg = ppm = 百万分之一

-1000 mg/kg = 0.1%

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

-1000 mg/kg = 0.1%

检测报告

Test Report

报告编号 A2210176777101001E

Report No. A2210176777101001E

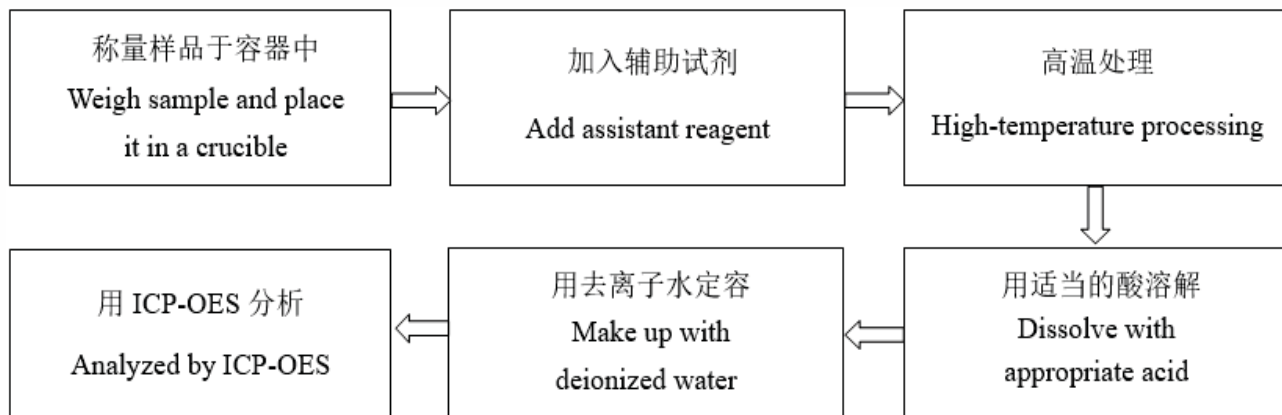
第 6 页 共 8 页

Page 6 of 8

检测流程 Test Process

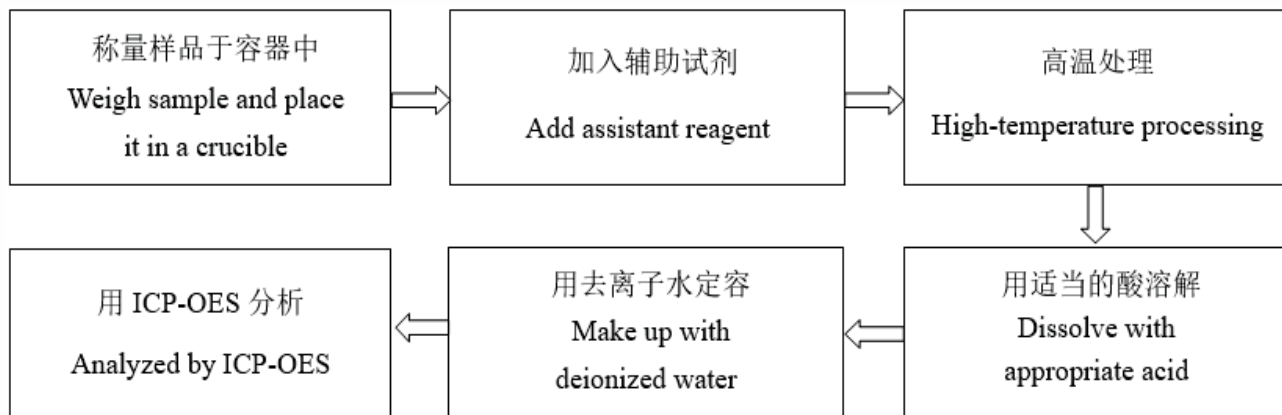
1. 铅(Pb), 镉(Cd), 铬(Cr)

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



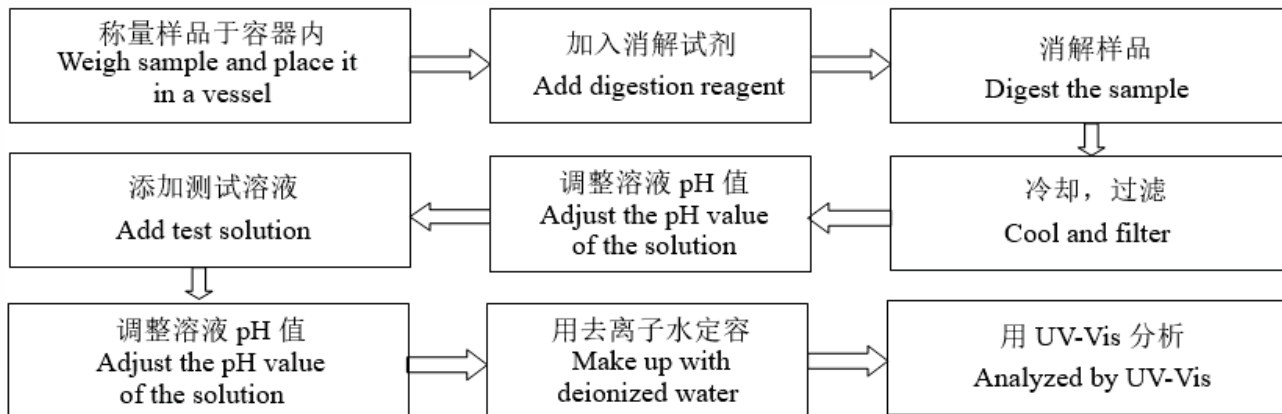
2. 汞(Hg)

Mercury (Hg)



3. 六价铬(Cr(VI))

Hexavalent Chromium (Cr(VI))



检测报告 Test Report

报告编号 A2210176777101001E

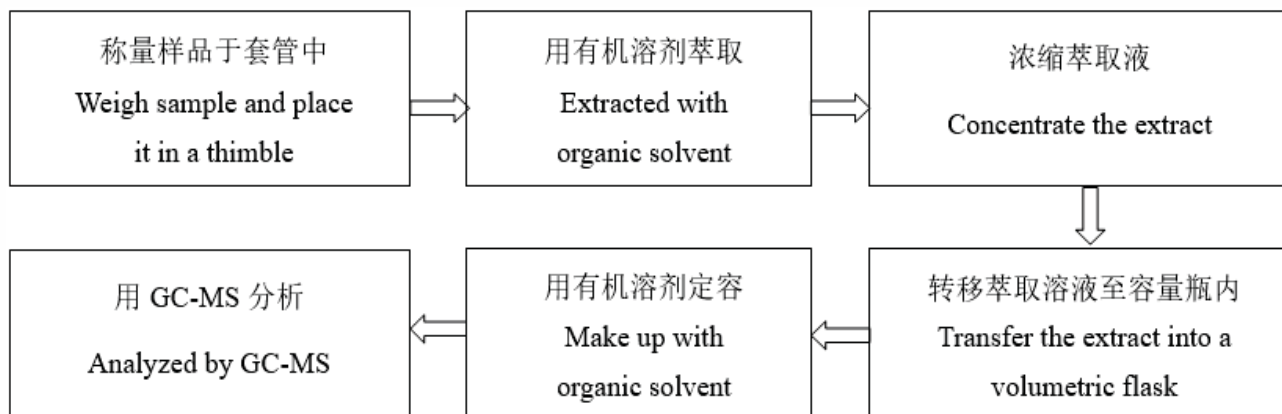
Report No. A2210176777101001E

第 7 页 共 8 页

Page 7 of 8

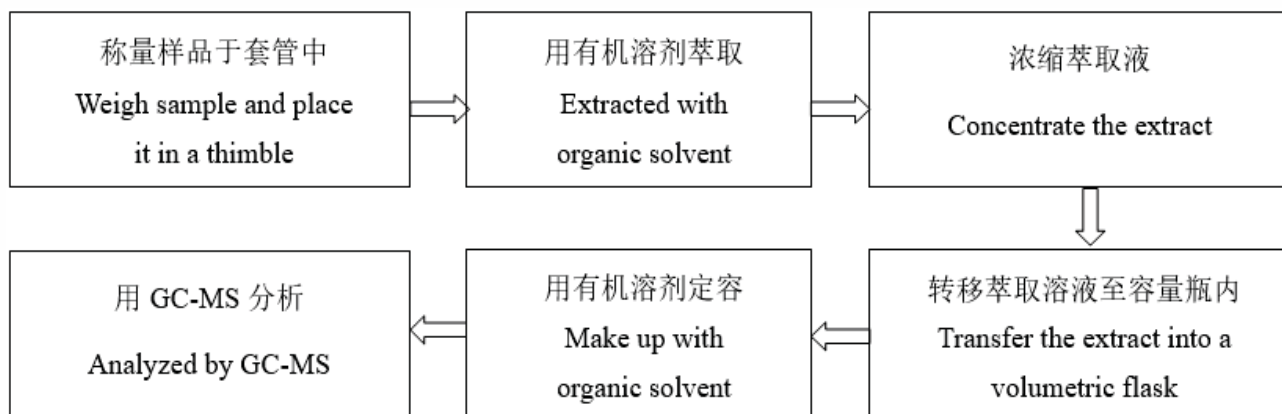
4. 多溴联苯(PBBs), 多溴二苯醚(PBDEs)

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



5. 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



检测报告 Test Report

报告编号 A2210176777101001E
Report No. A2210176777101001E

第 8 页 共 8 页
Page 8 of 8

样品图片 Photo(s) of the sample(s)



声明Statement:

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效;
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报告结束

*** End of report ***



Test Report

No. HKTEC2102511719

Date: 11 Jun 2021

Page 1 of 12

DAINICHISEIKA COLOR & CHEMICALS MFG. CO., LTD.

7-6, BAKUROCHO 1-CHOME, NIHONBASHI

CHUO-KU

TOKYO 103-8383

JAPAN

The following sample(s) was/were submitted and identified on behalf of the clients as : FCM STI 138K BROWN

SGS Job No. : 4834626 - HK

Lot No. : 1619C274

Country of Origin : JAPAN

Date of Sample Received : 31 May 2021

Testing Period : 31 May 2021 - 11 Jun 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 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.

Based on the performed tests on submitted samples, the test results do not exceed the limit as set by the requirement of European Regulation POPs (EU) 2019/1021–Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD).

Based on the performed tests on submitted sample(s), the test results do not exceed the limit as set by European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives.

Signed for and on behalf of
SGS Hong Kong Limited.

Wong Ka Ming, Polly
Chemist

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Test Report

No. HKTEC2102511719

Date: 11 Jun 2021

Page 2 of 12

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	HKT21-025117.019	Brown plastic pellet

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 IEC62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, Hg analyzer, UV-Vis and GC-MS.
(Decision Rule: please refer to appendix 1: Category 1)

Test Item(s)	Limit	Unit	MDL	019
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. HKTEC2102511719

Date: 11 Jun 2021

Page 3 of 12

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</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
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalate (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

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Fluorine (F)	-	mg/kg	50	260000
Chlorine (Cl)	-	mg/kg	50	ND
Bromine (Br)	-	mg/kg	50	ND
Iodine (I)	-	mg/kg	50	ND

Notes :

(1) The measurement report of the expanded uncertainty with confident level 95% by coverage factor k=2, is 20% for each analyte of Fluorine, Chlorine, Bromine and Iodine.

European Regulation POPs (EU) 2019/1021 – Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)

Test Method : With reference to SGS inhouse method-CTS-SL-235-1, analysis was performed by GC-MS.
(Decision Rule: please refer to appendix 1: Category 1)

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD)	100	mg/kg	10	ND

Conclusion

PASS

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Test Report

No. HKTEC2102511719

Date: 11 Jun 2021

Page 4 of 12

European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

Test Item(s)	CAS NO	Limit	Unit	MDL	019
Perfluorooctanoic acid (PFOA) and its salts+	--	0.025	mg/kg	0.010	ND
PFOA-related substances	--	1	mg/kg	-	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTS)	39108-34-4	-	mg/kg	1	ND
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	-	mg/kg	1	ND
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	-	mg/kg	1	ND
Perfluoro-1-iodooctane (PFOI)	507-63-1	-	mg/kg	1	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	--	1,000	mg/kg	-	ND
Perfluorooctane sulfonates (PFOS)^	1763-23-1	-	mg/kg	1	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	-	mg/kg	1	ND
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	-	mg/kg	1	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	-	mg/kg	1	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol (MeFOSE)	24448-09-7	-	mg/kg	1	ND
Perfluorooctane sulfonamide (PFOSA)	754-91-6	-	mg/kg	1	ND

Conclusion

PASS

Notes :

(1) + PFOA refer to its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8),

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Test Report

No. HKTEC2102511719

Date: 11 Jun 2021

Page 5 of 12

PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1);
 (2) ^ PFOS refer to its derivatives 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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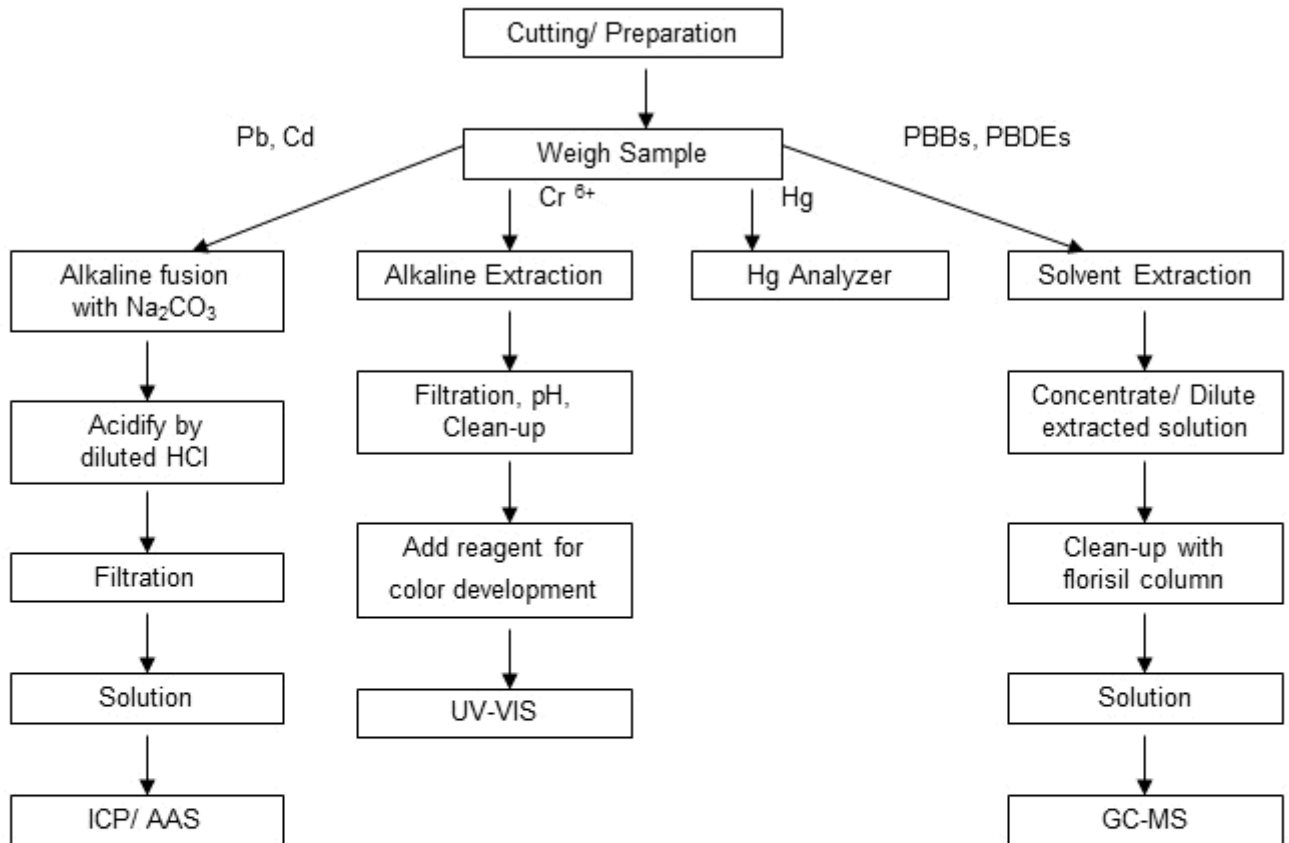
Appendix 1

Category	Decision Rule Statement
1	The decision rule for conformity reporting is based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, $w = U95$) in ILAC-G8:09/2019 Clause 4.2.3. A. "Pass - the measured value is within (or below / above) the acceptance limit, where the acceptance limit is below / above to the guard band." or "Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%." B. "Conditional Pass - The measured values were observed in tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded / out of tolerance. When the measured result is close to the tolerance, the specific false accept risk is up to 50%." C. "Conditional Fail - One or more measured values were observed out of tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in tolerance. When the measured result is close to the tolerance, the specific false reject risk is up to 50%." D. "Fail - the measured value is out of (or below / above) the tolerance limit added / subtracted to the guard band." or "Fail - One or more measured values were observed out of tolerance at the points tested". The specific false reject risk is up to 2.5%.
2	The decision rule for conformity reporting is based on BS EN 1811:2011+A1:2015: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin in Section 9.2 interpretation of results.
3	The decision rule for conformity reporting is based on the general consideration of simple acceptance as stated in ISO/IEC Guide 98-3: "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM 1995)", and more specifically for analytical measurements to the EURACHEM/CITAC Guide 2012 "Quantifying Uncertainty in Analytical Measurement".
4	The decision rule for conformity reporting is according to the IEC 62321-7-1 Edition 1.0 2015-09 Section 7: Table 1-(comparison to standard and interpretation of result)
5	The decision rule for conformity reporting is according to the IEC 62321-3-1 Edition 1.0 2013-06 Annex A.3 interpretation of result.
6	The decision rule for conformity reporting is according to the GB/T 26125-2011 Annex A to H
7	The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-17 section 4.3.5)
8	The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2)
Remark	If the decision rule is not feasible to be used and the uncertainty of the result is able to be provided, the uncertainty range of the result will be shown in the report. Otherwise, only result will be shown in the report.

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Flowchart:



Note : 1) The polymeric samples were dissolved totally by pre-conditioning method according to above flow chat for Cd and Pb contents analysis

Operator : Chiu Kan Yuen (Alkaline Fusion)
Alex Yip (Hg Analyzer)
Nick Liu (Hexavalent Chromium)
Kent Wan (PBBs and PBDEs)

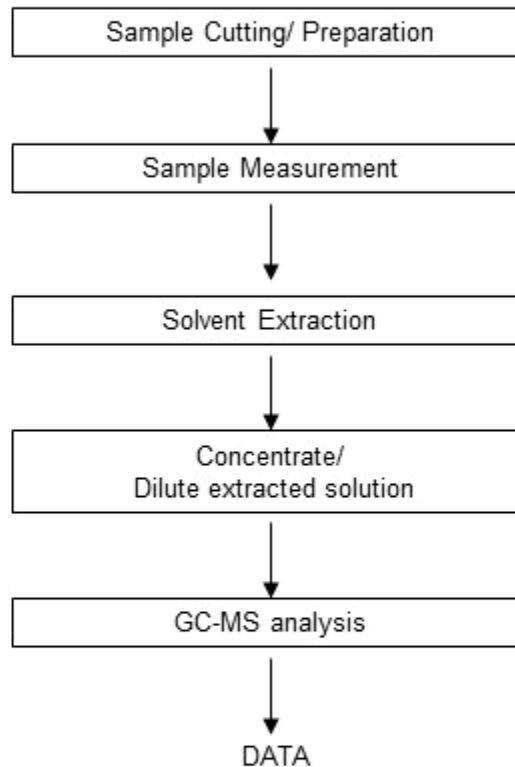
Section Chief : Chan Chun Kit (Dickson Chan)

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Flowchart for Phthalates measurement

Method: IEC 62321-8:2017



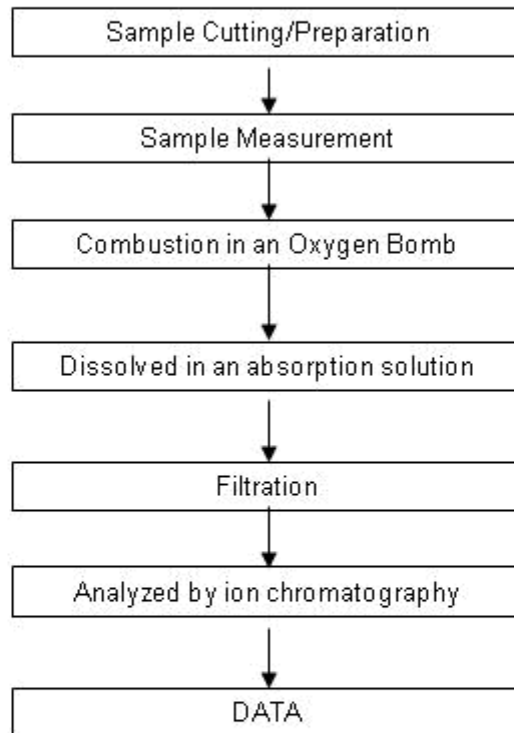
Tested by : Lumpy Lee
 Checked by : Edmund Kwan

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Flowchart for Halogen Free Test

Method: BS EN14582:2016



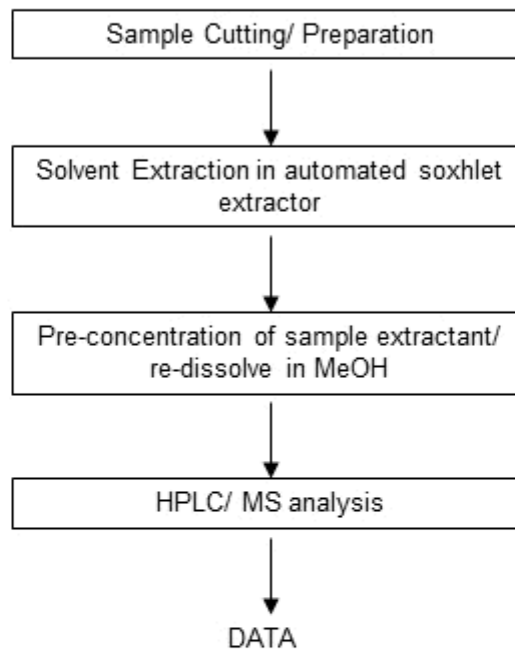
Operator: Tang Ying Sam
 Supervisor: Chan Chun Kit (Dickson)

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Flowchart for PFOS/ PFOA measurement

Method: CEN/TS15968:2010



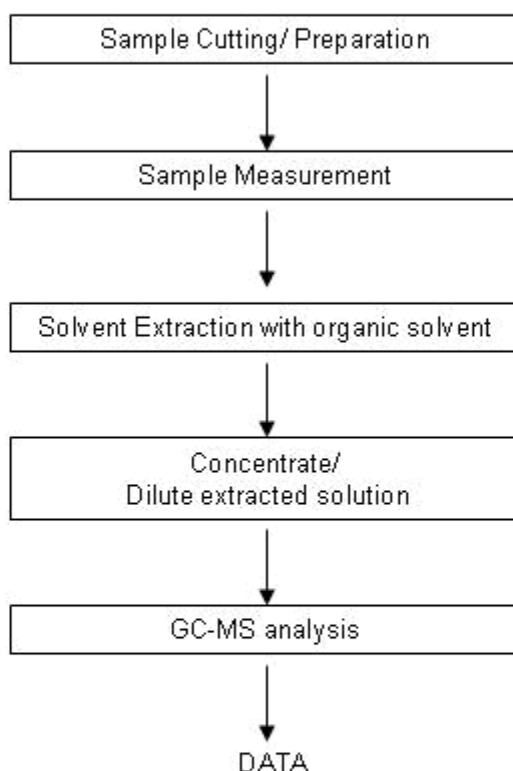
Operator : Candy Luk
 Chief Supervisor : Yu Ka Lai

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Flowchart for HBCDD measurement

Method: In-house Method



Tested by : Tang Sze Hon, Gary
 Checked by : Fok Chi Shan

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Test Report

No. HKTEC2102511719

Date: 11 Jun 2021

Page 12 of 12

Sample photo:



SGS authenticate the photo on original report only

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Test Report

No. SHAEC2127051115

Date: 16 Dec 2021

Page 1 of 14

Changzhou Hengfeng Special Conductor Co., Ltd.

No. 26, FengHuang Road, TianNing District, ChangZhou City, JiangSu Province

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

SGS Job No. : SP21-037895 - SH

Date of Sample Received : 10 Dec 2021

Testing Period : 10 Dec 2021 - 16 Dec 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 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.

Sue Sheng

Sue Sheng
Approved Signatory

scan to see the report



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Test Report

No. SHAEC2127051115

Date: 16 Dec 2021

Page 2 of 14

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-270511.025	Silvery white plating
SN2	SHA21-270511.026	Copper metal wire
SN3	SHA21-270511.027	Silvery white 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+AMD1:2017, IEC62321-5:2013, IEC62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	026
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))▼	-	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



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Test Report

No. SHAEC2127051115

Date: 16 Dec 2021

Page 3 of 14

Test Item(s)	Limit	Unit	MDL	026
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
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) ▼ = 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.

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 and IEC62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	025
Cadmium (Cd)	100	mg/kg	10	ND
Lead (Pb)	1000	mg/kg	10	ND
Mercury (Hg)	1000	mg/kg	10	ND
Hexavalent Chromium (Cr(VI)) ▼	-	µg/cm²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.



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No. SHAEC2127051115

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Page 4 of 14

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(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.

Element(s)

Test Method : With reference to US EPA Method 3050B:1996, analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	027
Beryllium (Be)	mg/kg	5	ND
Antimony (Sb)	mg/kg	10	ND

Perfluorooctanesulfonate (PFOS) and its derivatives

Test Method : With reference to CEN/TS 15968:2010, analysis was performed by HPLC-MS.

Test Item(s)	CAS NO.	Unit	MDL	027
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND
PFOS [^]	1763-23-1	mg/kg	10	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	10	ND
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	mg/kg	10	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	mg/kg	10	ND
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE)	24448-09-7	mg/kg	10	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	10	ND

Notes :

(1) ^ 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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Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)

Test Method : With reference to EPA method 3550C:2007 & EPA method 8270D: 2014, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>027</u>
Benzenamine,N-phenyl-,Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)	68921-45-9	mg/kg	10	ND



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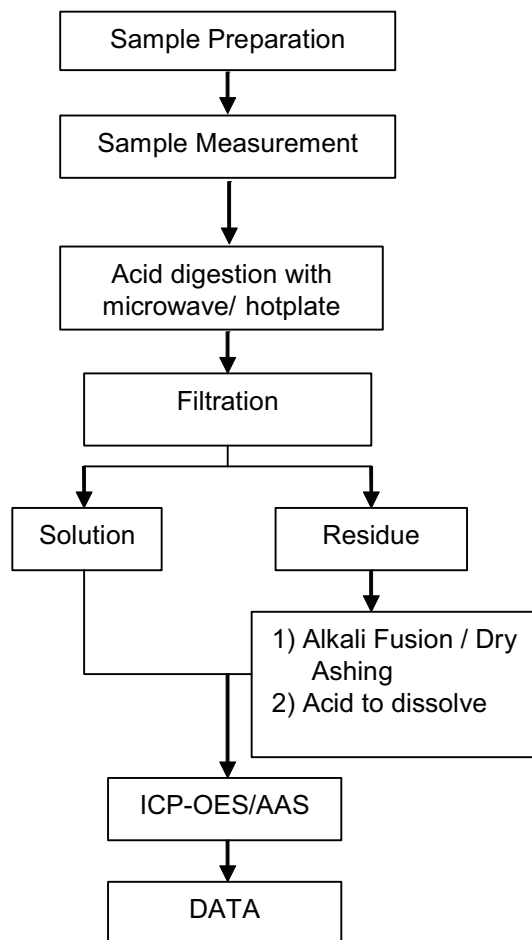
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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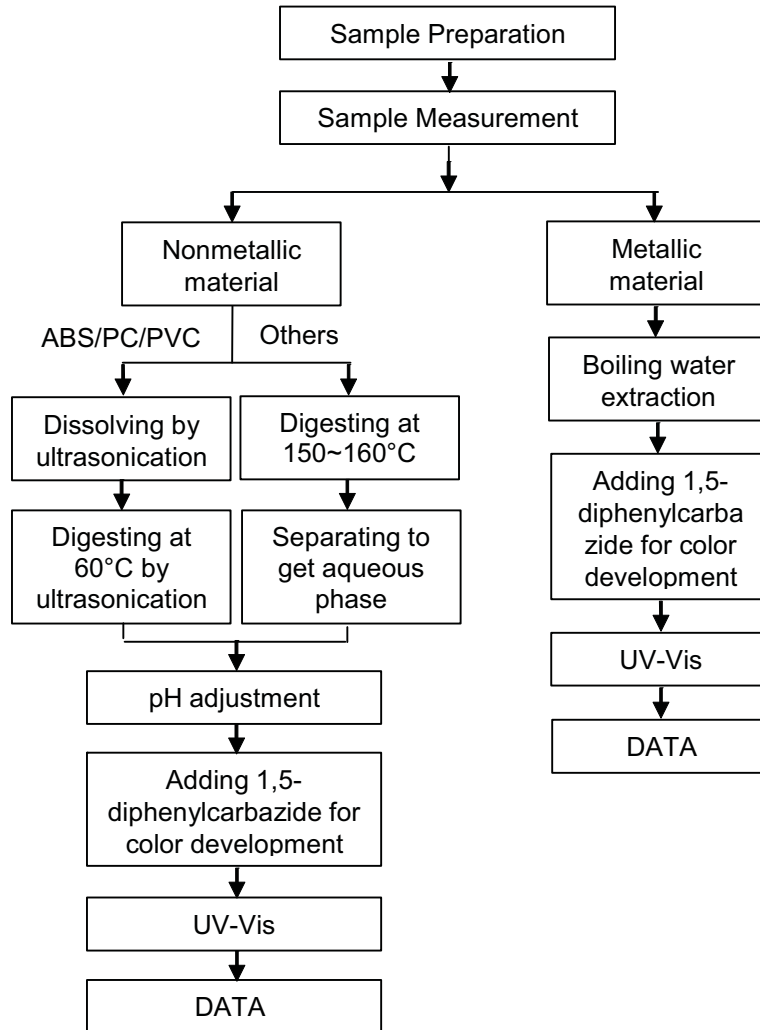
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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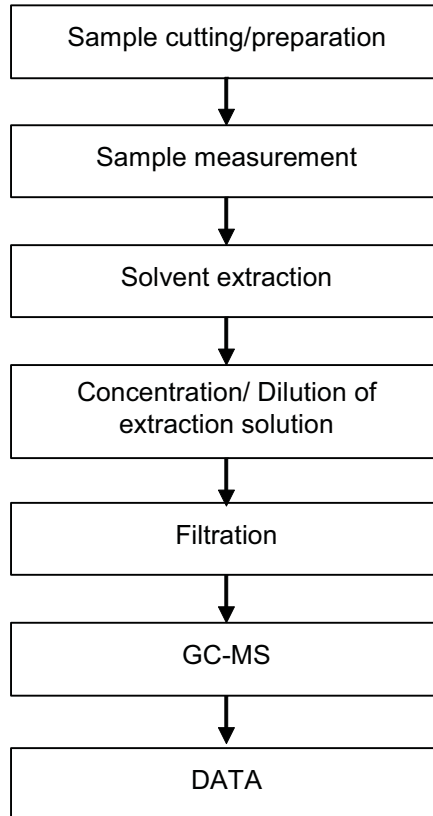
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PBBs/PBDEs Testing Flow Chart



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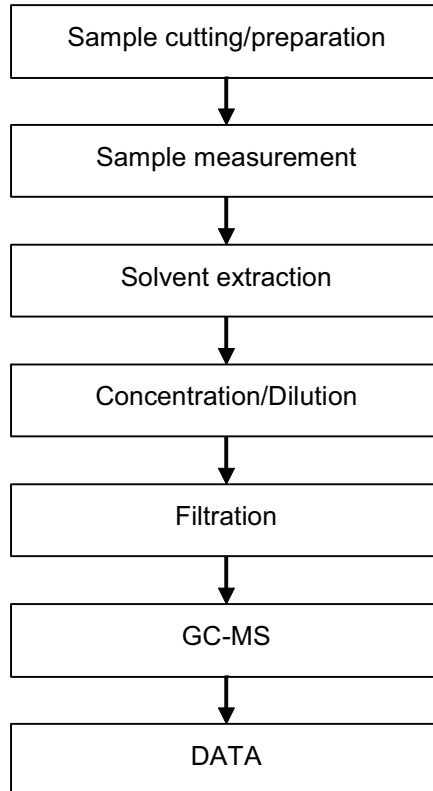
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Phthalates Testing Flow Chart



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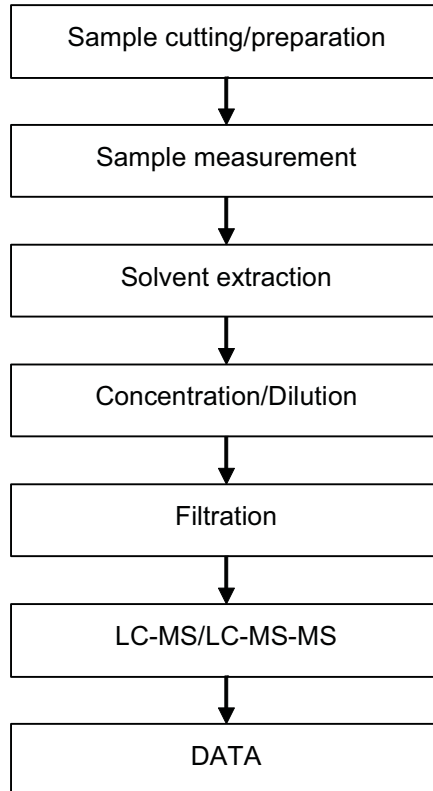
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PFASs/ PFOS/PFOA Testing Flow Chart



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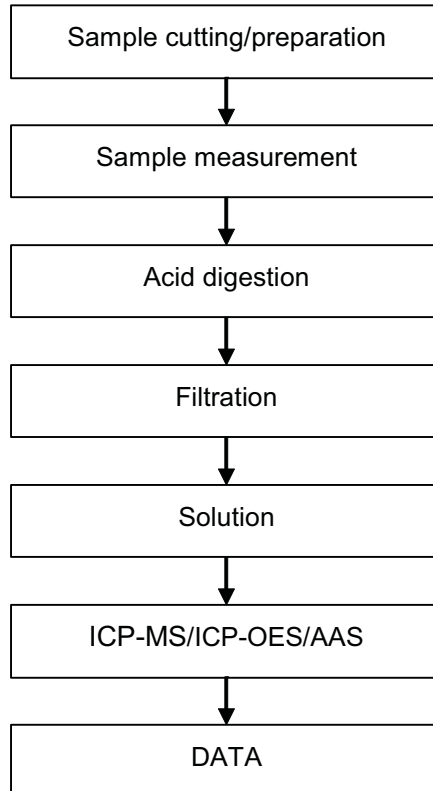
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Elements Testing Flow Chart



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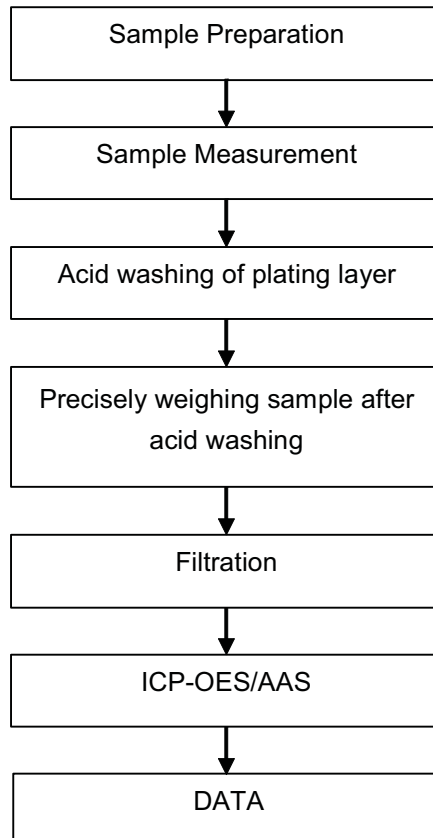
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Plating Pb/Cd/Hg Testing Flow Chart



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Page 13 of 14

Sample photo:



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Test Report

No. NGBML2200124301

Date: 27 Jan 2022

Page 1 of 14

ZHEJIANG JUHUA CO.,LTD

JUHUA,KECHENG DISTRICT,QUZHOU CITY,ZHEJIANG PROVINCE,P.R.CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : FLUORINATED ETHYLENE-PROPYLENE COPOLYMER

SGS Job No. : NBIN2201000866PC - NB
Client Ref. Information : FJP-T1,FJP-T2,FJP-T3,FJP-810,FJP-820,FJP-830,FJP-610,FJP-620,FJP-630,FJP-640
Date of Sample Received : 21 Jan 2022
Testing Period : 21 Jan 2022 - 27 Jan 2022
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. Ningbo Branch

Iris Xiao

Iris Xiao
Approved Signatory

scan to see the report



NGBML2200124301



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No. NGBML2200124301

Date: 27 Jan 2022

Page 2 of 14

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	NGB22-001243.001	TRANSPARENT SOLID 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	001
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
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND



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No. NGBML2200124301

Date: 27 Jan 2022

Page 3 of 14

Test Item(s)	Limit	Unit	MDL	001
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
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) 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.

Element(s)

Test Method : With reference to US EPA Method 3052:1996, analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	001
Red Phosphor (As P)	mg/kg	20	ND

Notes :

These tests are not accredited by CNAS.

Halogen

Test Method : With reference to EN 14582: 2016 , analysis was performed by IC.

Test Item(s)	Unit	MDL	001
Fluorine (F)	mg/kg	50	>100000
Chlorine (Cl)	mg/kg	200	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND



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No. NGBML2200124301

Date: 27 Jan 2022

Page 4 of 14

Tetrabromobisphenol A (TBBP-A)

Test Method : With reference to US EPA 3540C: 1996, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

Polycyclic aromatic hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Naphthalene(NAP)	mg/kg	0.1	ND
Phenanthrene(PHE)	mg/kg	0.1	ND
Anthracene(ANT)	mg/kg	0.1	ND
Fluoranthene(FLT)	mg/kg	0.1	ND
Pyrene(PYR)	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	mg/kg	0.1	ND
Chrysene(CHR)	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.1	ND
Sum of Phenanthrene, Pyrene, Anthracene, Fluoranthene	mg/kg	-	ND
Sum of 15 PAHs	mg/kg	-	ND



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Date: 27 Jan 2022

Page 5 of 14

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

Parameter	Category 1	Category 2		Category 3	
	Materials, that are destined in mouth closed or material in toys according to Directive 2009/48 EC or materials in articles for use by children up to 3 years with longer term according to skin contact (longer than 30s) at intended use	Materials not covered in category 1, with foreseeable contact to skin longer than 30 seconds (long-term skin contact) or repeated short term skin contact at intended or foreseeable use		Materials that do not fall in category 1 or 2, with foreseeable contact to skin up to 30 seconds (short-term skin contact) at intended or foreseeable use	
		Used by Children (<14 years)	Other Consumer Products	Used by Children (<14 years)	Other Consumer Products
Benzo(a)pyrene (BaP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene (DBA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP) mg/kg	< 1	< 2		< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Phthalates

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



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Test Report

No. NGBML2200124301

Date: 27 Jan 2022

Page 6 of 14

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0/68515 -49-1	%	0.01	ND
Diisononyl Phthalate (DINP)	28553-12-0/68515 -48-0	%	0.01	ND



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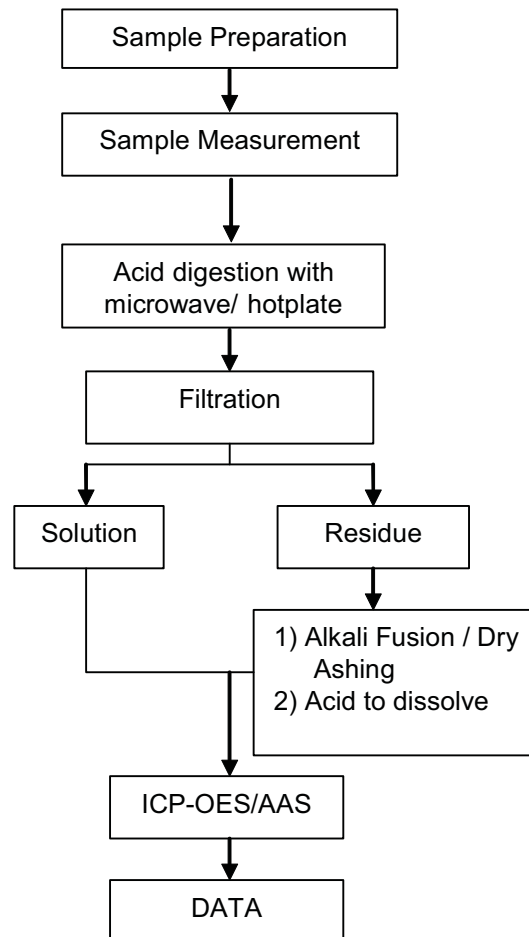
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Page 7 of 14

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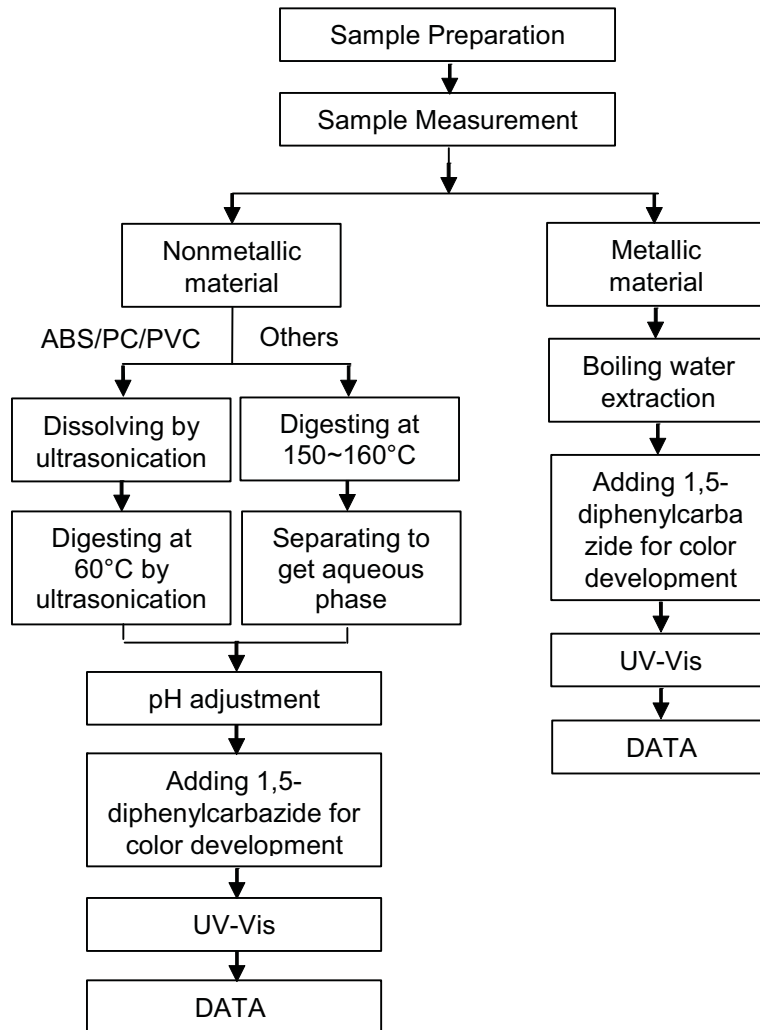
Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



Test Report

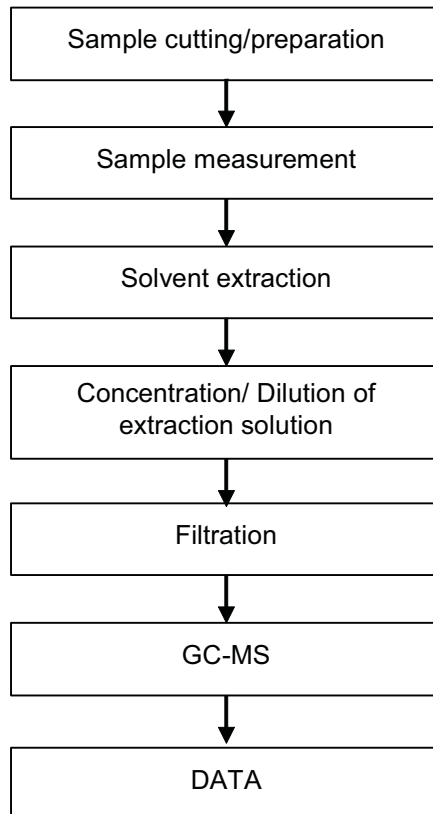
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Page 9 of 14

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PBBs/PBDEs Testing Flow Chart



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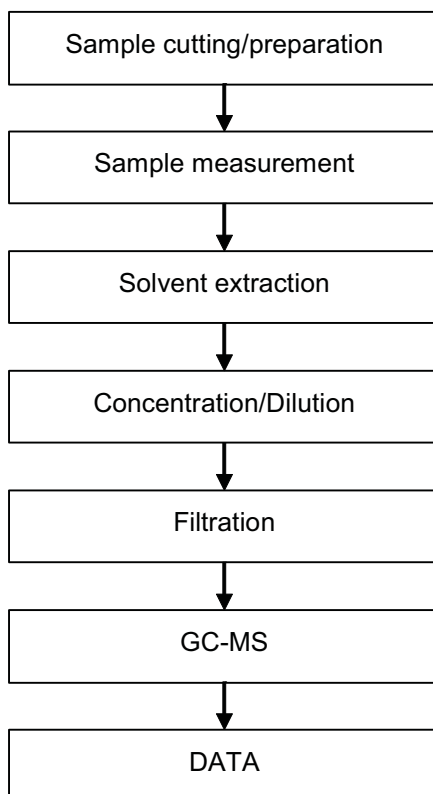
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Date: 27 Jan 2022

Page 10 of 14

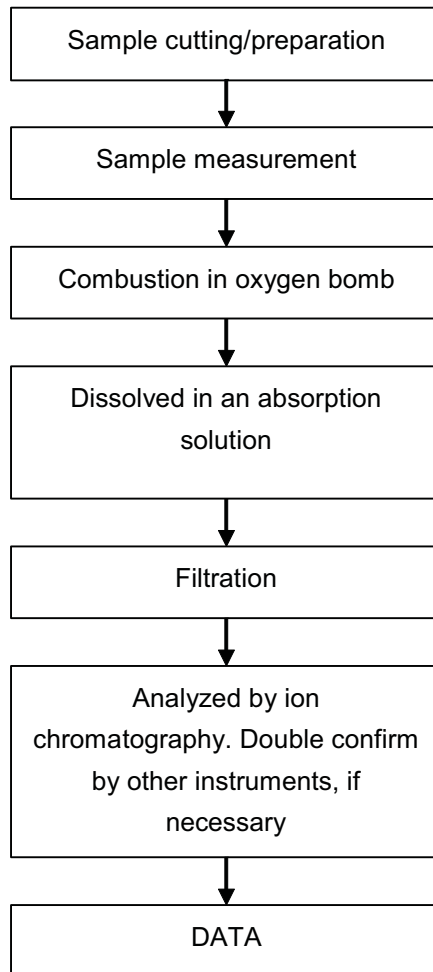
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Phthalates Testing Flow Chart



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Halogen Testing (oxygen bomb) Flow Chart



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Test Report

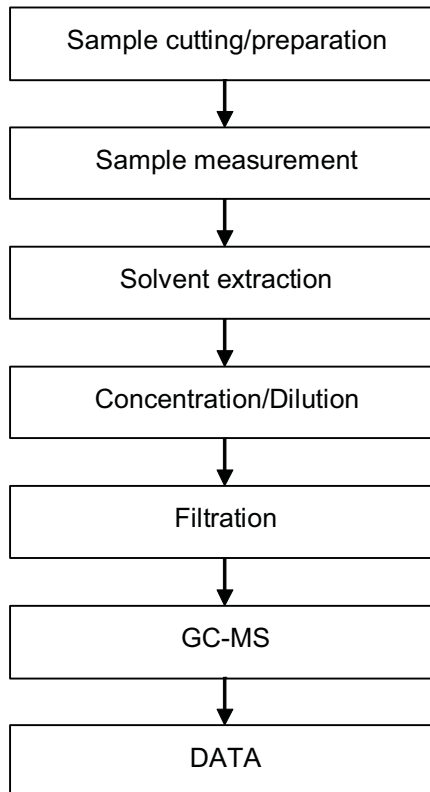
No. NGBML2200124301

Date: 27 Jan 2022

Page 12 of 14

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PAHs Testing Flow Chart



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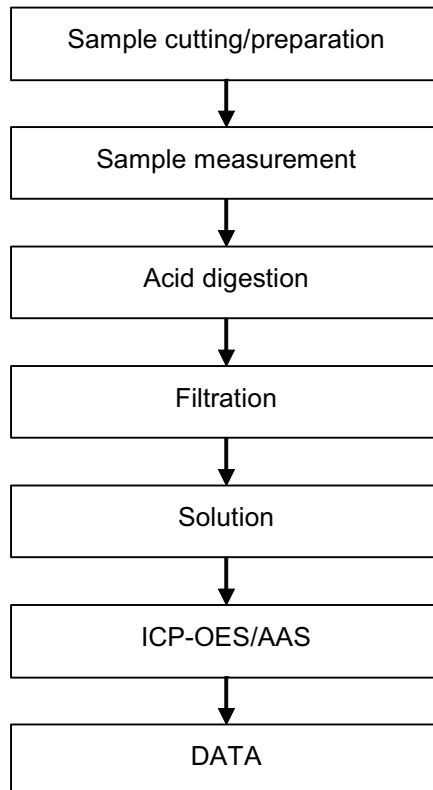
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Page 13 of 14

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Elements Testing Flow Chart



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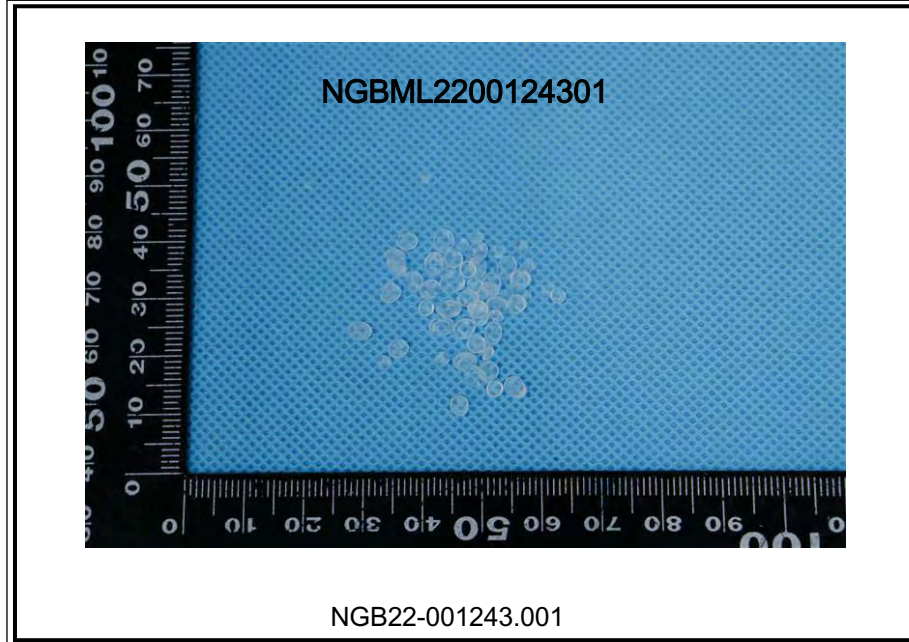
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Date: 27 Jan 2022

Page 14 of 14

Sample photo:



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Test Report



Report No. A2220020280101002

Page 1 of 10

Company Name TAIZHOU DONGYUAN ELECTRONICS CO., LTD

shown on Report

Address NO.6,XUHE ROAD,GAOGANG DISTRICT,TAIZHOU CITY,JIANGSU PROVINCE

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

Sample No.	Sample Name(s)	Material
001	Silver plated copper clad steel	Iron. Copper. Silver
002		
003	Silver plated copper clad steel	Iron. Copper. Silver

Sample Received Date Jan. 14, 2022

Testing Period Jan. 14, 2022 to Jan. 20, 2022

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), Beryllium(Be), Antimony(Sb), Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) in the submitted sample(s).

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



Tested by

Li Zheng Su

Reviewed by

Chen Rui

Approved by

Chen Kaimin

Date

Jan. 20, 2022

Chen kaimin
Lab Manager

Centre Testing International Rimbao(Shanghai) Co., Ltd.

No. R475311912

No.1351, Wanfang Road, Minhang District, Shanghai, China

Test Report

Report No. A2220020280101002

Page 2 of 10

Test Method

Tested Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013	ICP-OES
	Refer to IEC 62321-5:2013	
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
	Refer to IEC 62321-5:2013	
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
	Refer to IEC 62321-4:2013+AMD1:2017 CSV	
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
Beryllium(Be)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Antimony(Sb)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Perfluorooctane Sulfonates(PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS/LC-MS
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS/LC-MS
Fluorine (F)	Refer to EN 14582:2016	IC
Chlorine (Cl)	Refer to EN 14582:2016	IC
Bromine (Br)	Refer to EN 14582:2016	IC
Iodine (I)	Refer to EN 14582:2016	IC

Test Result(s)

Tested Item(s)	Result			MDL
	001	002	003	
Lead (Pb)	N.D.	12 mg/kg	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.▼	N.D.▼	N.D.▼	0.10 µg/cm ² (LOQ)

Test Report

Report No. A2220020280101002

Page 3 of 10

Tested Item(s)	Result	MDL
	001	
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
	001	
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. A2220020280101002

Page 4 of 10

Tested Item(s)	Result	MDL
	001	
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 Item(s)	Result		MDL
	002	003	
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	N.D.	5 mg/kg

Test Report

Report No. A2220020280101002

Page 5 of 10

Tested Item(s)	Result		MDL
	002	003	
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	5 mg/kg

Tested Item(s)	Result		MDL
	002	003	
Phthalates (DBP, BBP, DEHP, DIBP)			
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	50 mg/kg

Tested Item(s)	Result	MDL
	003	
Beryllium (Be)	N.D.	10 mg/kg

Tested Item(s)	Result	MDL
	003	
Antimony (Sb)	N.D.	10 mg/kg

Test Report

Report No. A2220020280101002

Page 6 of 10

Tested Item(s)	Result	MDL
	003	
Perfluorooctane Sulfonates (PFOS)	N.D.	0.5 µg/m ²

Tested Item(s)	Result	MDL
	003	
Perfluorooctanoic Acid (PFOA)	N.D.	0.5 µg/m ²

Tested Item(s)	Result	MDL
	003	
Fluorine (F)	N.D.	50 mg/kg
Chlorine (Cl)	N.D.	50 mg/kg
Bromine (Br)	N.D.	50 mg/kg
Iodine (I)	N.D.	50 mg/kg

Sample/Part Description

- 001 Metal base
- 002 Cupreous plating
- 003 Silver-white plating

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

-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.

Test Report

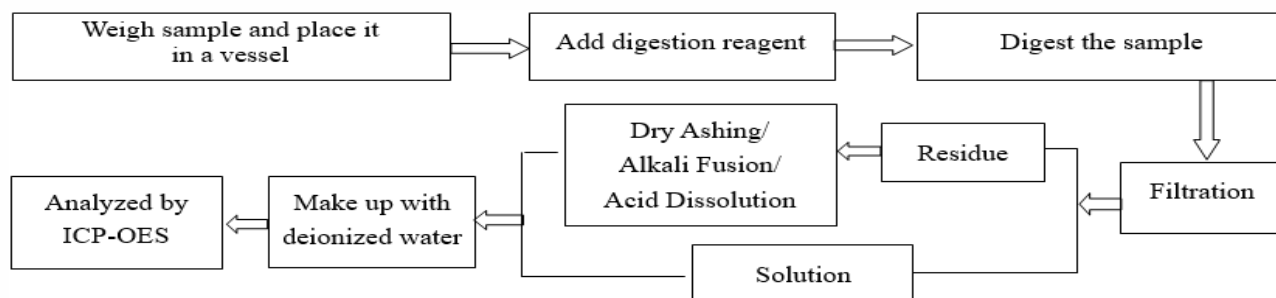
Report No. A2220020280101002

Page 7 of 10

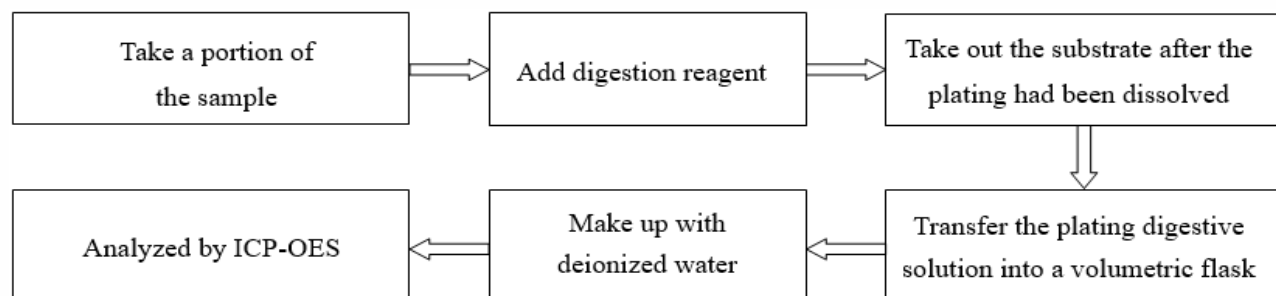
Test Process

1. Lead (Pb), Cadmium (Cd)

(1) IEC 62321-5:2013

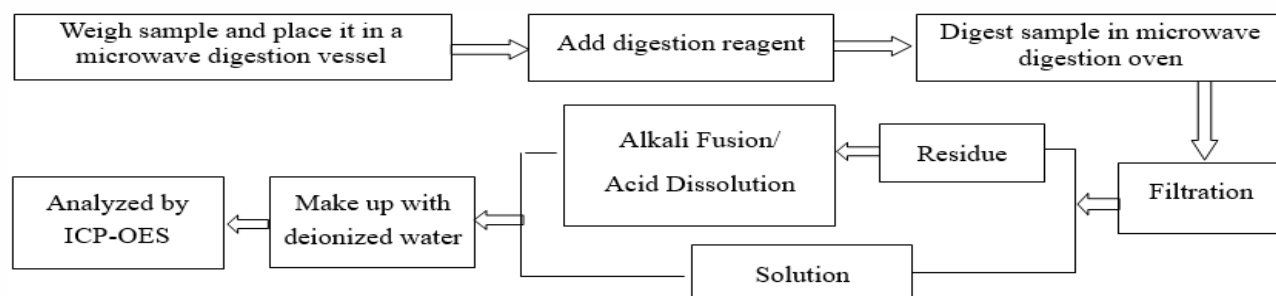


(2) Refer to IEC 62321-5:2013

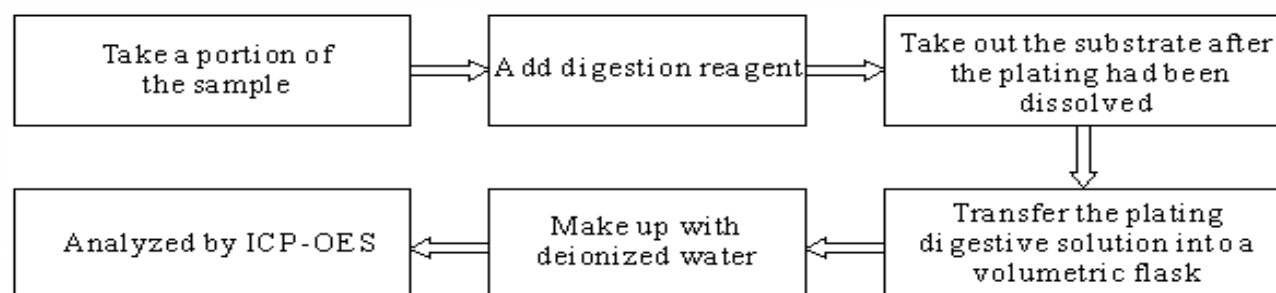


2. Mercury (Hg)

(1) IEC 62321-4:2013+AMD1:2017 CSV



(2) Refer to IEC 62321-4:2013+AMD1:2017 CSV

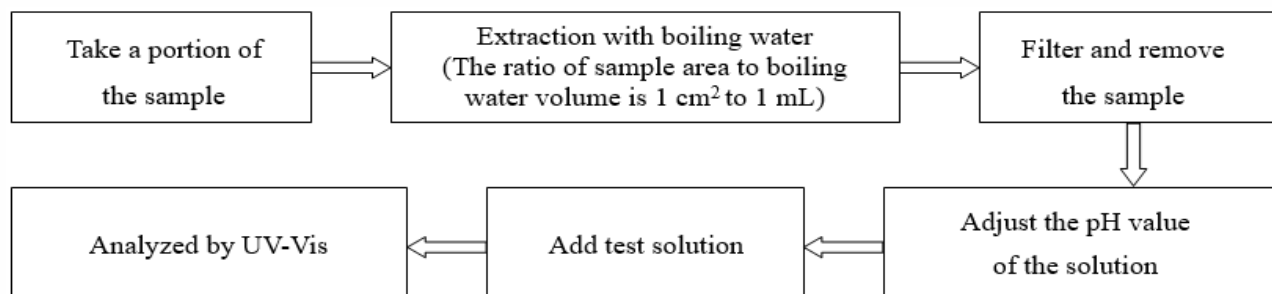


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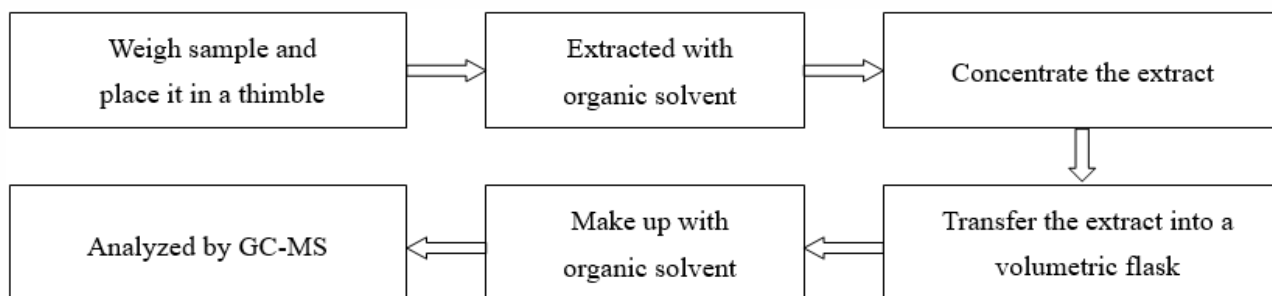
Report No. A2220020280101002

Page 8 of 10

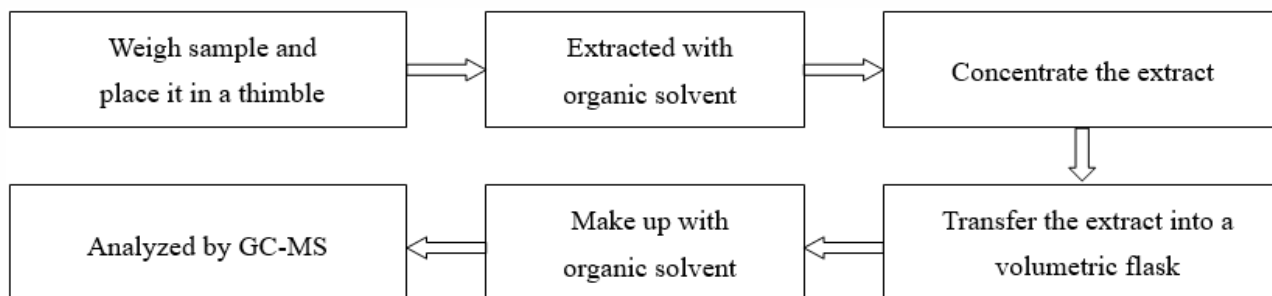
3. Hexavalent Chromium (Cr(VI))



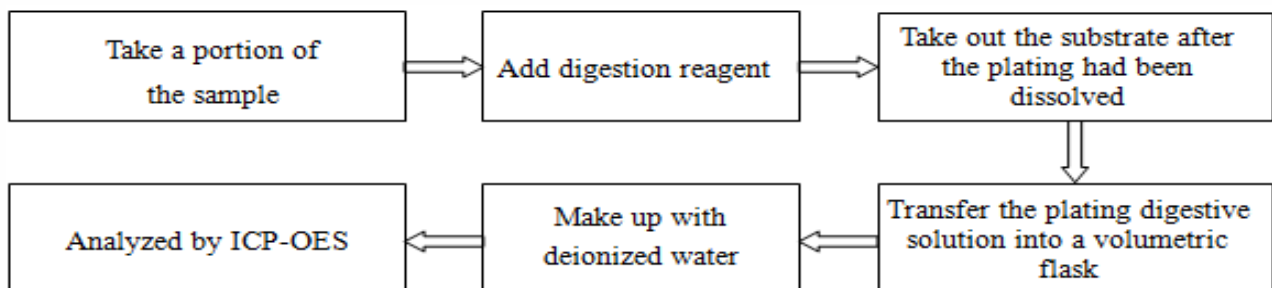
4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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



6. Beryllium(Be), Antimony(Sb)

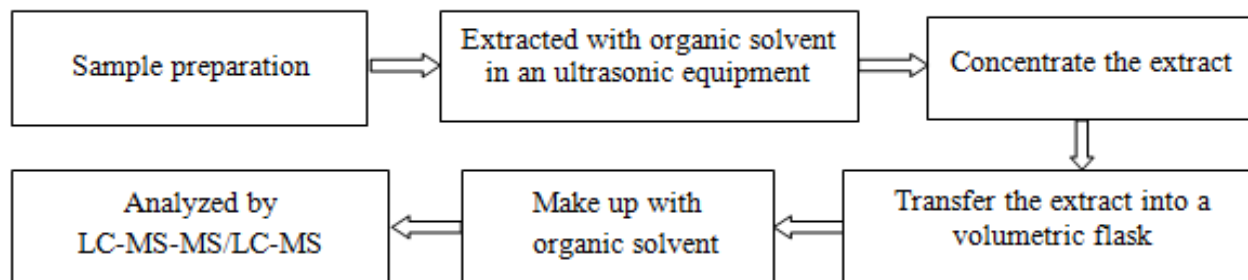


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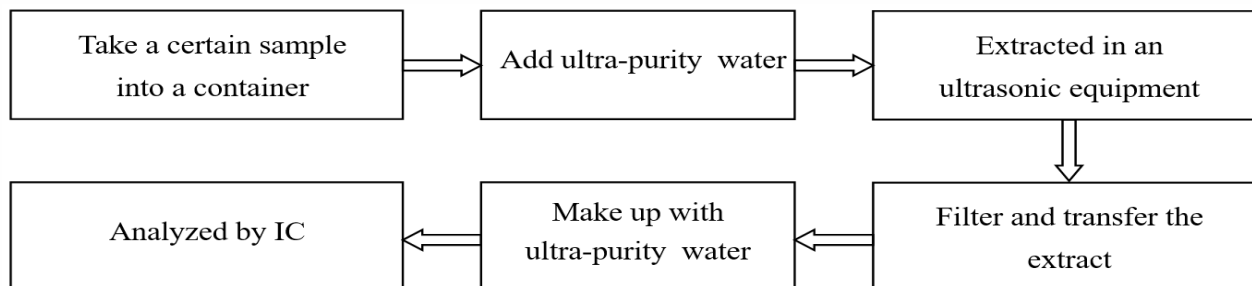
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Page 9 of 10

7. Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



8. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



Test Report

Report No. A2220020280101002

Page 10 of 10

Photo(s) of the sample(s)

001,002



003



Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant 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. CANEC2110983505

Date: 26 Jun 2021

Page 1 of 4

SHANTOU XINYANG METAL PRODUCTS CO., LTD

XIANGDI JINGTOU VILLAGE, JINZAO TOWN, CHAOYANG DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : BRASS C3604

SGS Job No. : CP21-031672 - GZ

Date of Sample Received : 18 Jun 2021

Testing Period : 18 Jun 2021 - 25 Jun 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

scan to see the report



CANEC2110983505



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Test Report

No. CANEC2110983505

Date: 26 Jun 2021

Page 2 of 4

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN21-109835.001	Brassy 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	001
Cadmium (Cd)	100	mg/kg	2	18
Lead (Pb)	1,000	mg/kg	2	28696▲
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.

Remark▲: According to the declaration from the client, Lead (Pb) in specimen is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.



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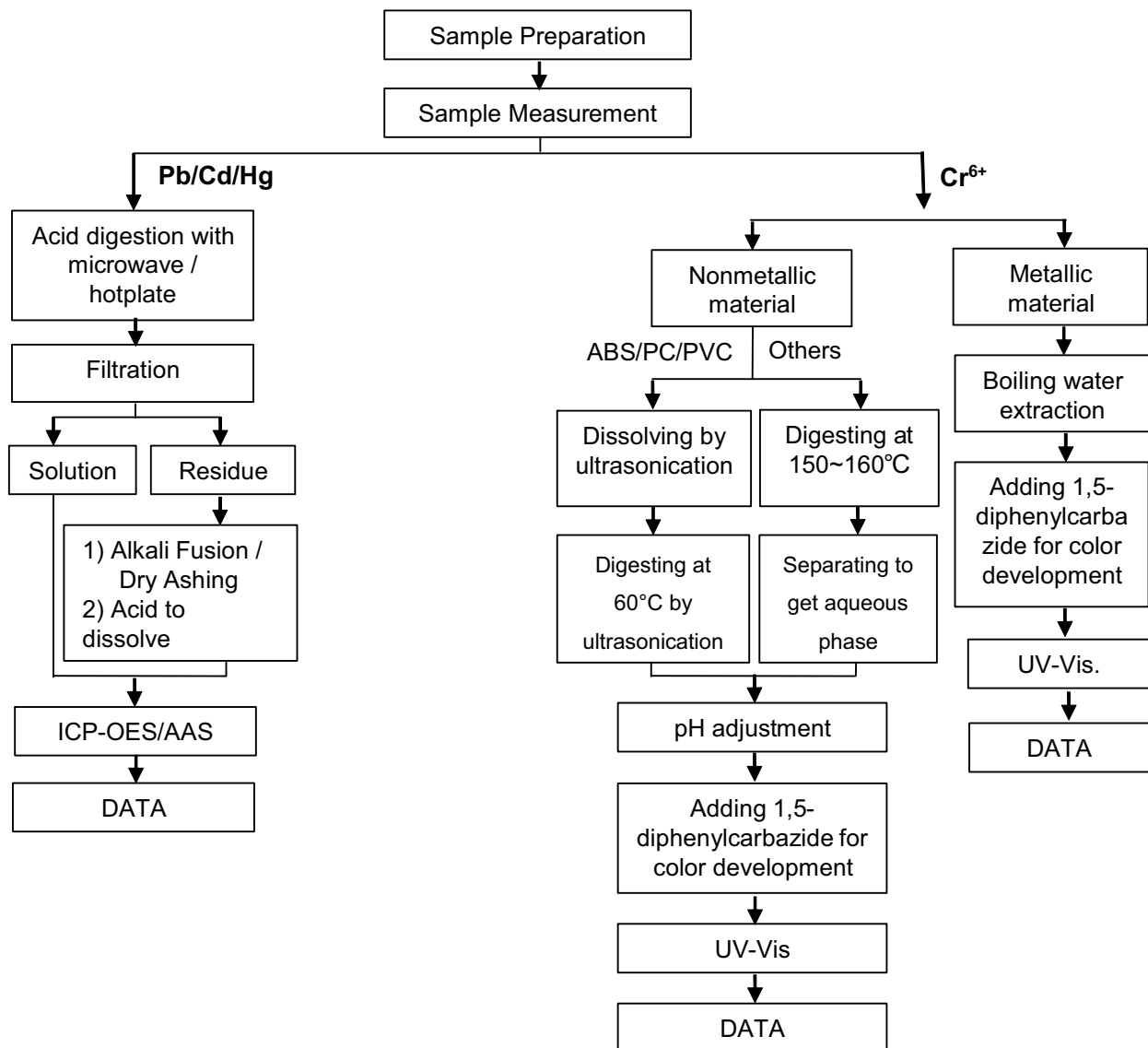
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1 (86-20) 82155555 sgs.china@sgs.com

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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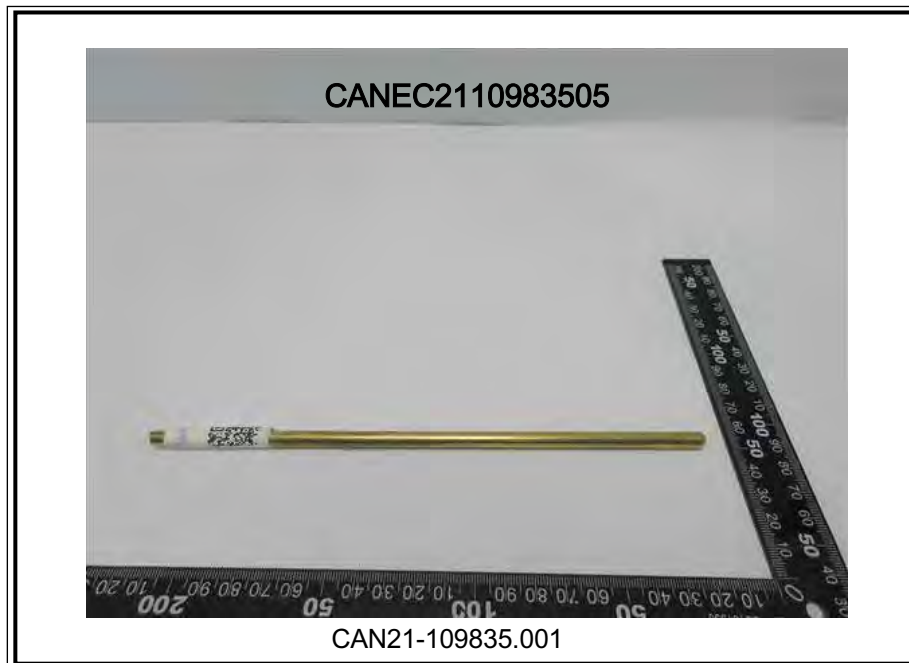
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No. CANEC2110983505

Date: 26 Jun 2021

Page 4 of 4

Sample photo:



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Test Report

No. SHAEC2118528401

Date: 30 Aug 2021

Page 1 of 8

ZHENJIANG SHENGKEDA ELECTRONICS CO.,LTD

XINQI VILLAGE, XINFENG TOWN, DANTU DISTRICT, ZHENJIANG CITY

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

SGS Job No. : SP21-027264 - SH

Client Ref. Information : PTFE INSULATPOR

Date of Sample Received : 26 Aug 2021

Testing Period : 26 Aug 2021 - 30 Aug 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 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.

Sue Sheng

Sue Sheng
Approved Signatory

scan to see the report



SHAEC2118528401



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No. SHAEC2118528401

Date: 30 Aug 2021

Page 2 of 8

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-185284.001	White solid

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	001
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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Test Report

No. SHAEC2118528401

Date: 30 Aug 2021

Page 3 of 8

Test Item(s)	Limit	Unit	MDL	001
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.



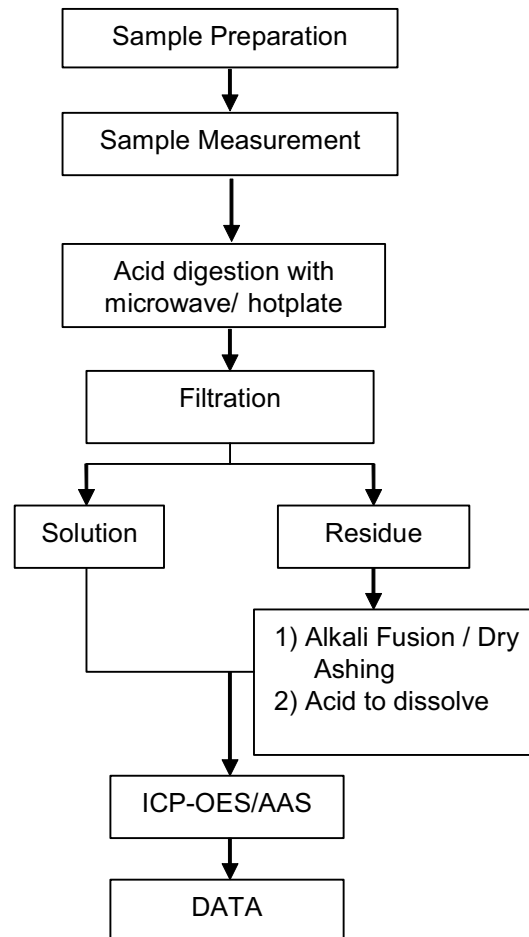
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



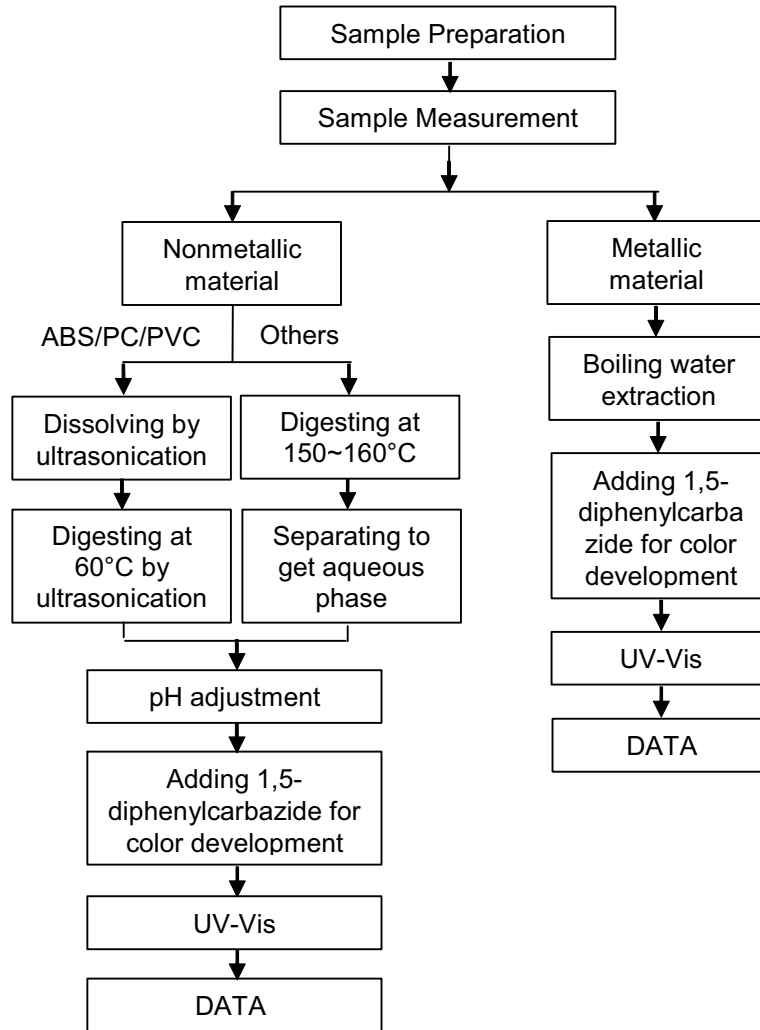
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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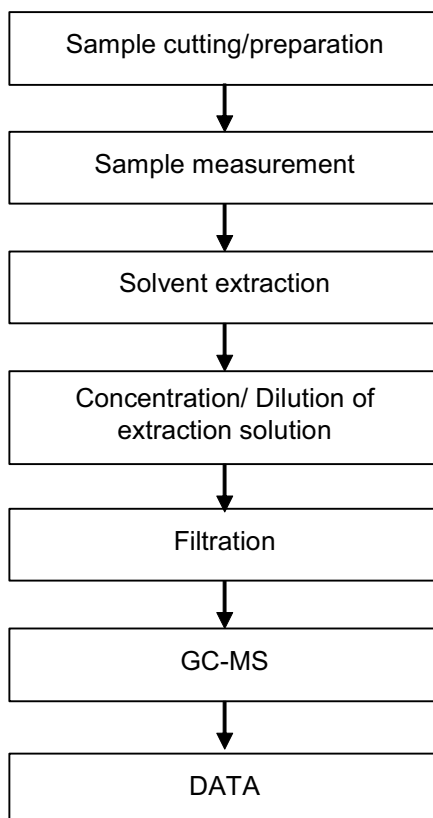
No. SHAEC2118528401

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Page 6 of 8

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PBBs/PBDEs Testing Flow Chart



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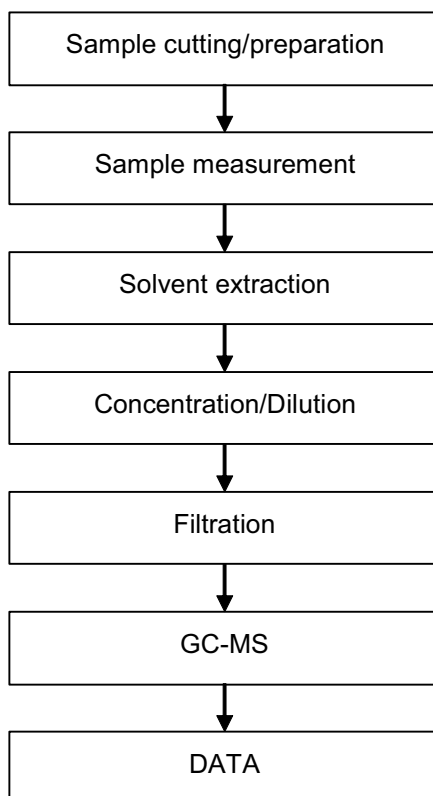
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Page 7 of 8

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Phthalates Testing Flow Chart



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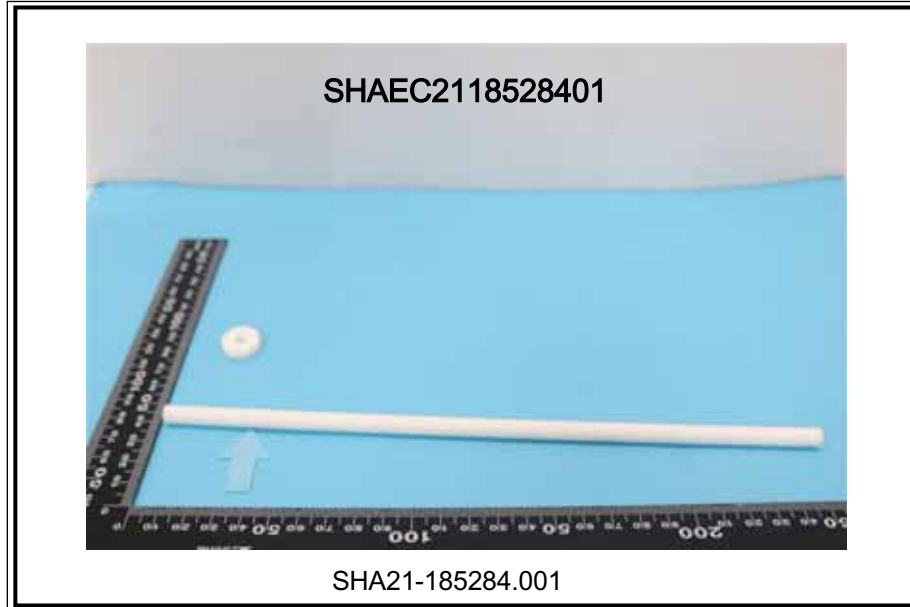
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Page 8 of 8

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Test Report

No. SZXEC2103405301

Date: 12 Nov 2021

Page 1 of 6

SHENZHEN ZHICHENG INDUSTRIAL CO.,LTD.ZHICHENG PLASTIC HARDWARE PRODUCTS FACTORY
NO.2,FIVE LANES,XINSHA INDUSTRIAL ZONE,BILING COMMUNITY,PINGSHAN STREET,PINGSHAN
DISTRICT,SHENZHEN

The following sample(s) was/were submitted and identified on behalf of the clients as : Gold plating (in Chinese as镀金层)

SGS Job No. : RP21-026189 - SZ
Date of Sample Received : 04 Nov 2021
Testing Period : 04 Nov 2021 - 12 Nov 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. Shenzhen Branch

Ford

Ford Shi
Approved Signatory



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Test Report

No. SZXEC2103405301

Date: 12 Nov 2021

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX21-034053.001	Gold 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+AMD1:2017, 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	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	24
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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No. SZXEC2103405301

Date: 12 Nov 2021

Page 3 of 6

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.
- (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.



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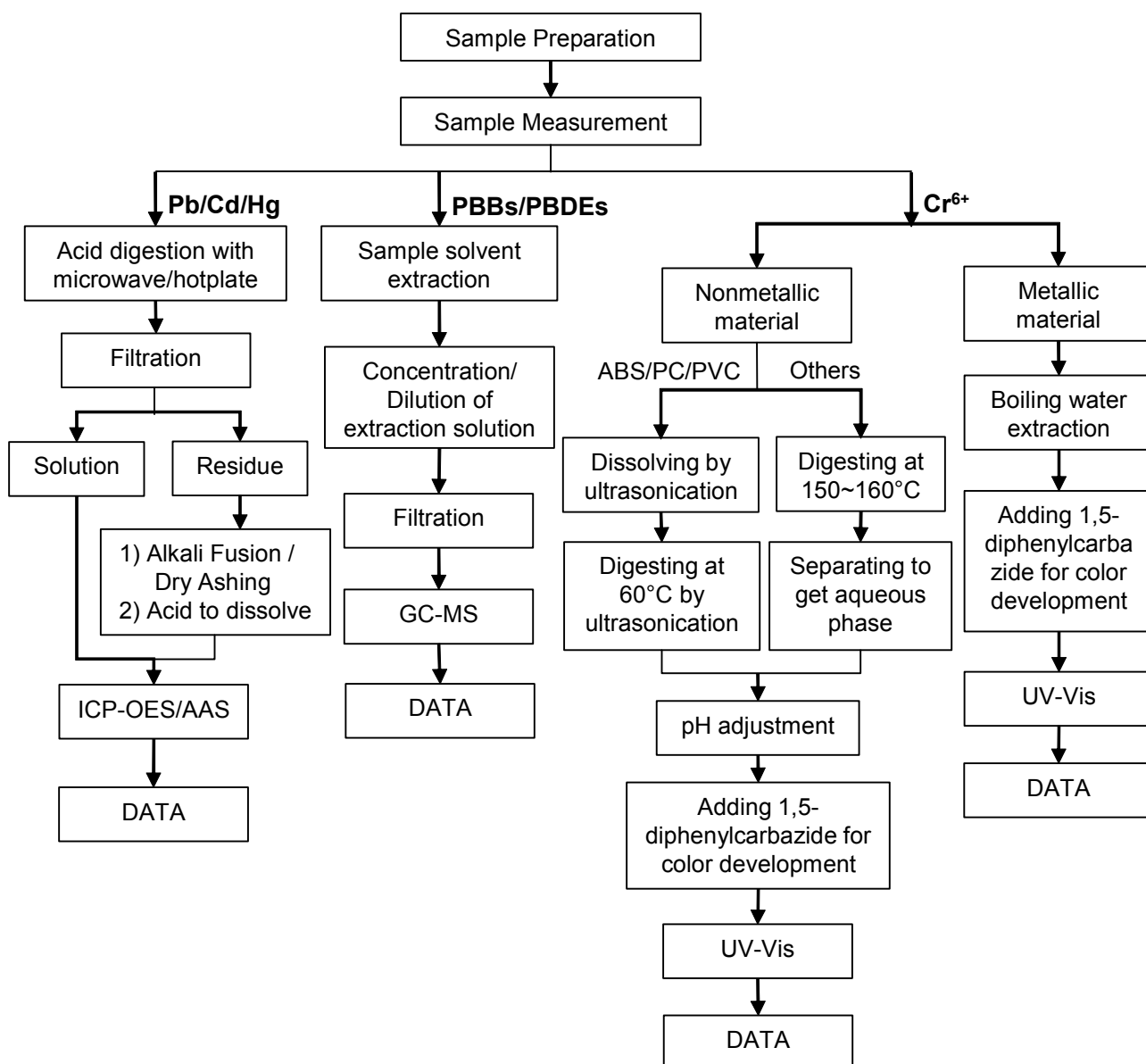
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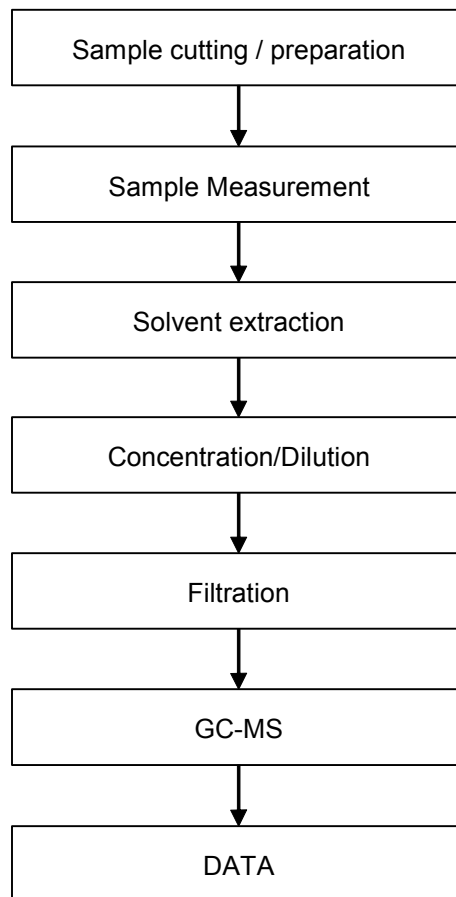
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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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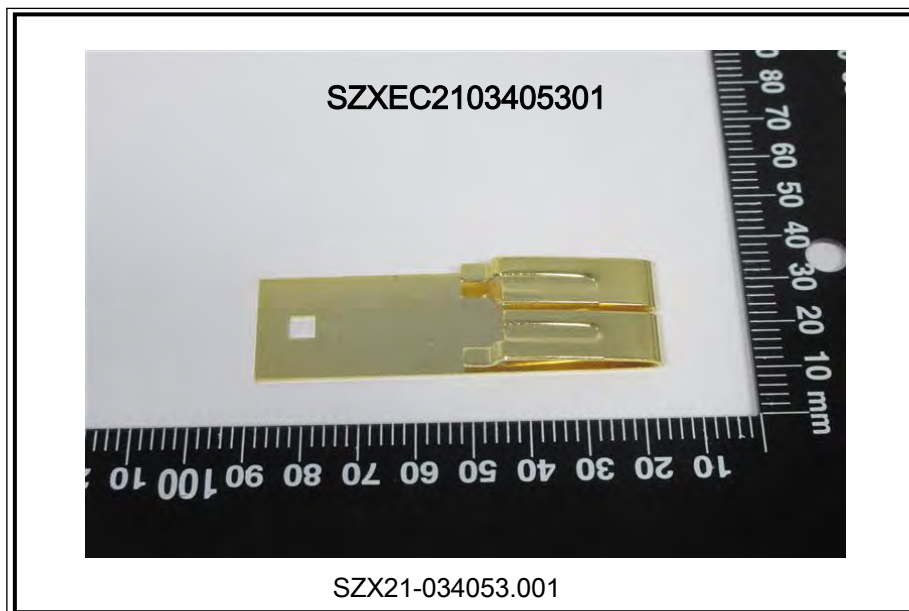
Test Report

No. SZXEC2103405301

Date: 12 Nov 2021

Page 6 of 6

Sample photo:



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*** End of Report ***

Test Report

No. SZXEC2103405307

Date: 12 Nov 2021

Page 1 of 6

SHENZHEN ZHICHENG INDUSTRIAL CO.,LTD.ZHICHENG PLASTIC HARDWARE PRODUCTS FACTORY
NO.2,FIVE LANES,XINSHA INDUSTRIAL ZONE,BILING COMMUNITY,PINGSHAN STREET,PINGSHAN
DISTRICT,SHENZHEN

The following sample(s) was/were submitted and identified on behalf of the clients as : Nickel plating (in Chinese as 镀镍层)

SGS Job No. : RP21-026189 - SZ

Date of Sample Received : 04 Nov 2021

Testing Period : 04 Nov 2021 - 12 Nov 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. Shenzhen Branch

Ford

Ford Shi
Approved Signatory



9BB9F229



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Test Report

No. SZXEC2103405307

Date: 12 Nov 2021

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX21-034053.003	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+AMD1:2017, 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	003
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	28
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. SZXEC2103405307

Date: 12 Nov 2021

Page 3 of 6

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)	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.
- (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.



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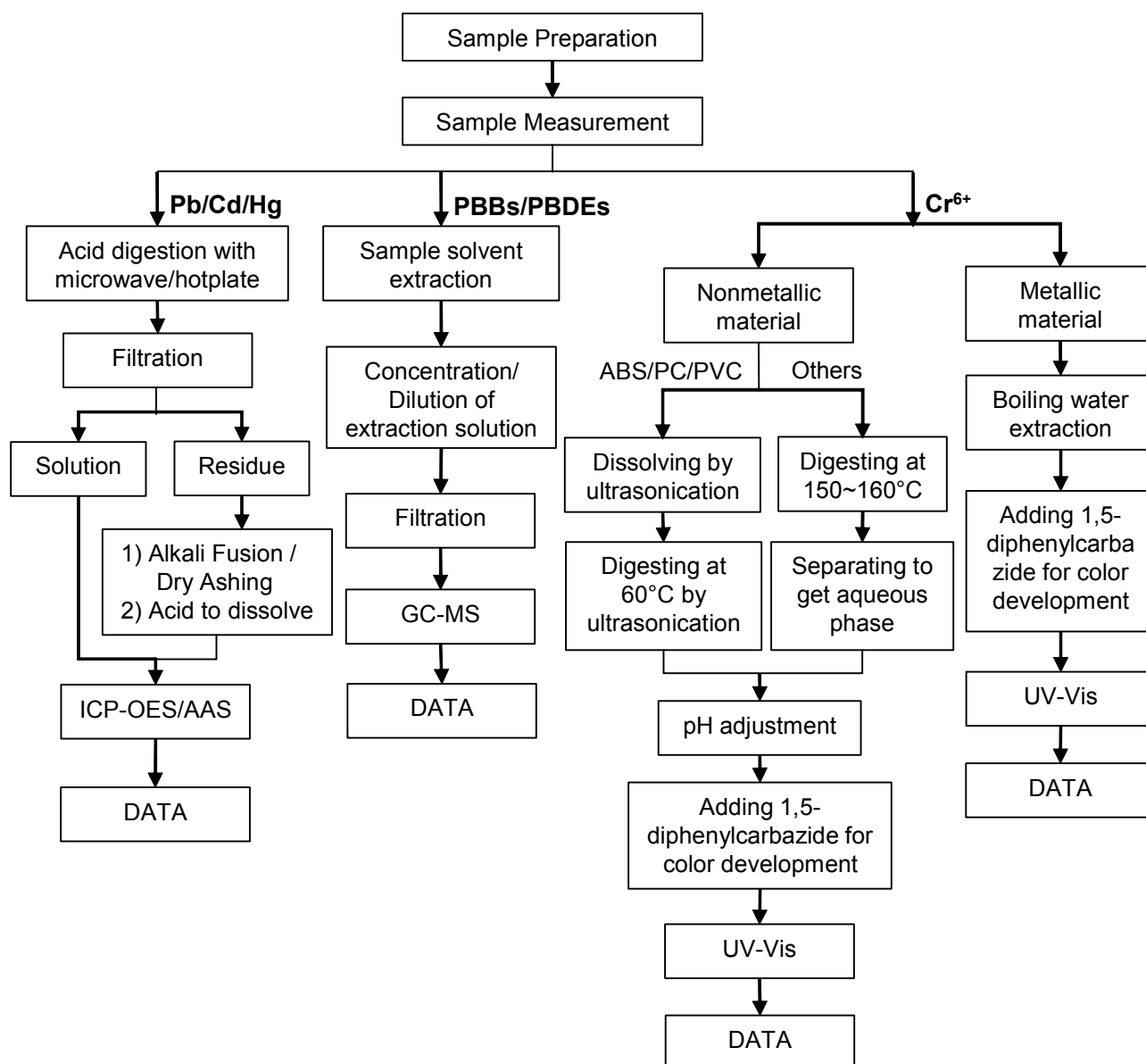
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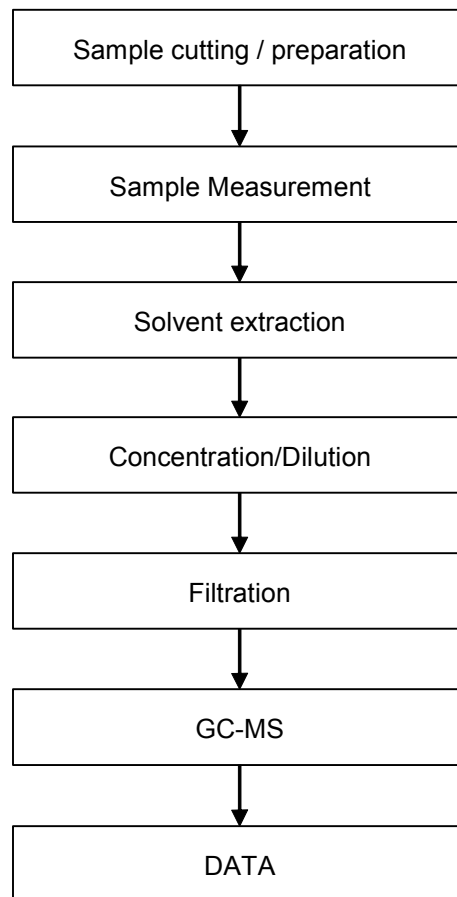
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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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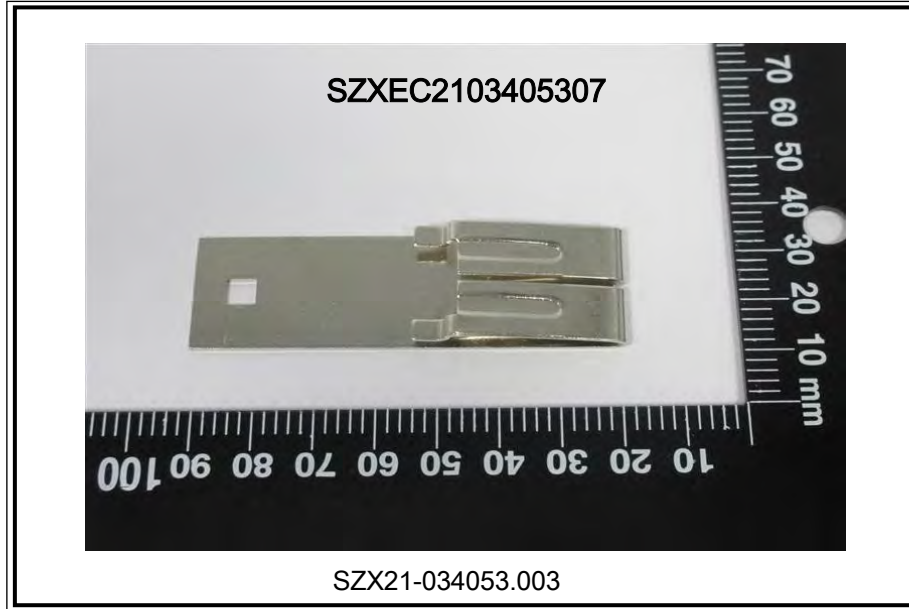
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Page 6 of 6

Sample photo:



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Test Report

No. CANEC2103066123

Date: 15 Mar 2021

Page 1 of 6

SHENZHEN TAIKE TECHNOLOGY CO.,LTD
QIPING INDUSTRIAL ZONE, GUANLAN TOWN, SHENZHEN

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

SGS Job No. : CP21-008519 - SZ
Client Ref. Info. : Used for 1109A 1109AH 1105 1141 1141H 1102 、 1103、
1104、 1105、 1106、 1107、 1110、 1111 1112 1113
Date of Sample Received : 05 Mar 2021
Testing Period : 05 Mar 2021 - 11 Mar 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

Dongyu Xie

Dongyu Xie
Approved Signatory

scan to see the report



CANEC2103066123



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Test Report

No. CANEC2103066123

Date: 15 Mar 2021

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN21-030661.037	Red paste

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	037
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. CANEC2103066123

Date: 15 Mar 2021

Page 3 of 6

Test Item(s)	Limit	Unit	MDL	037
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.

(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) 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.



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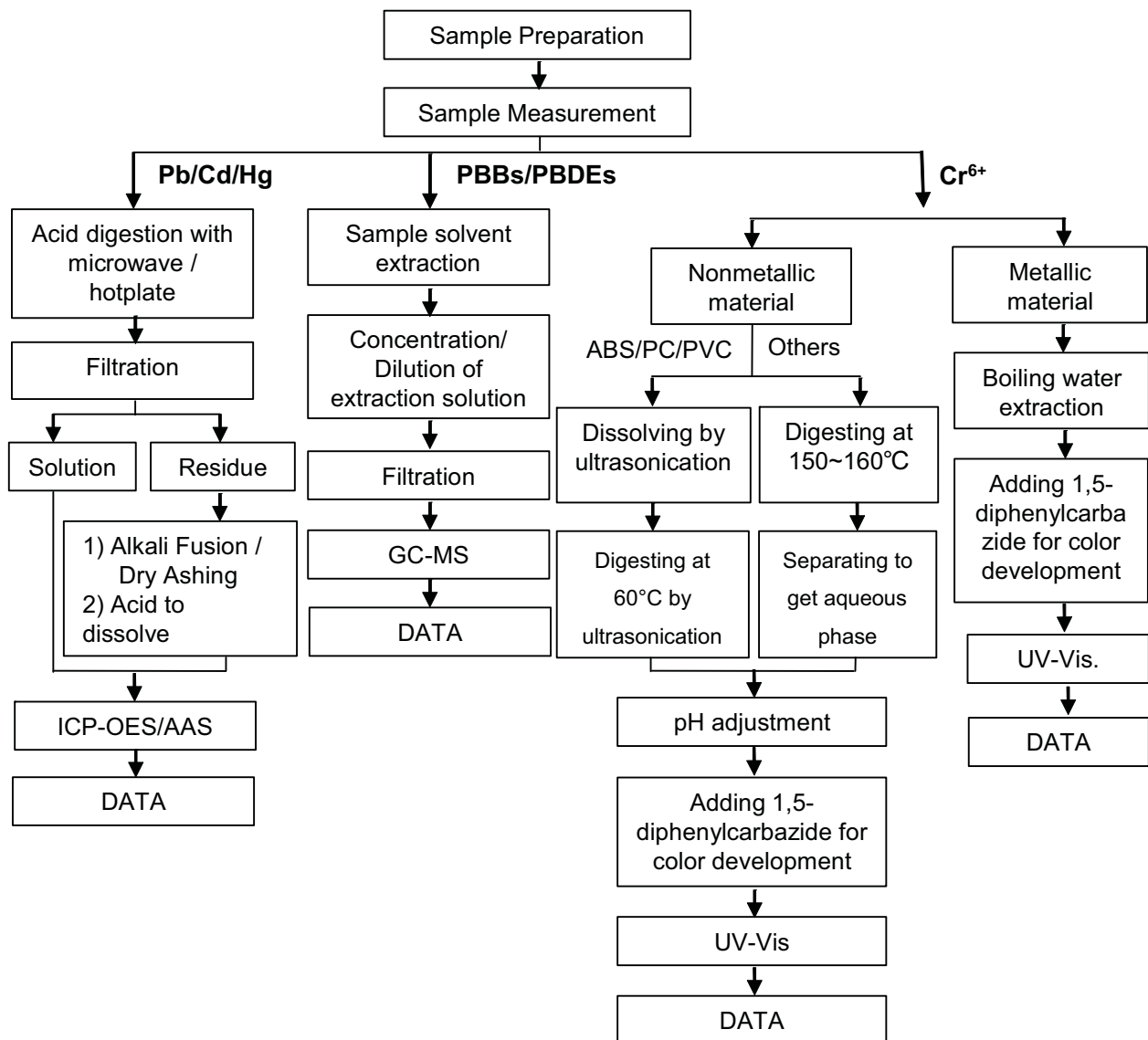
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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

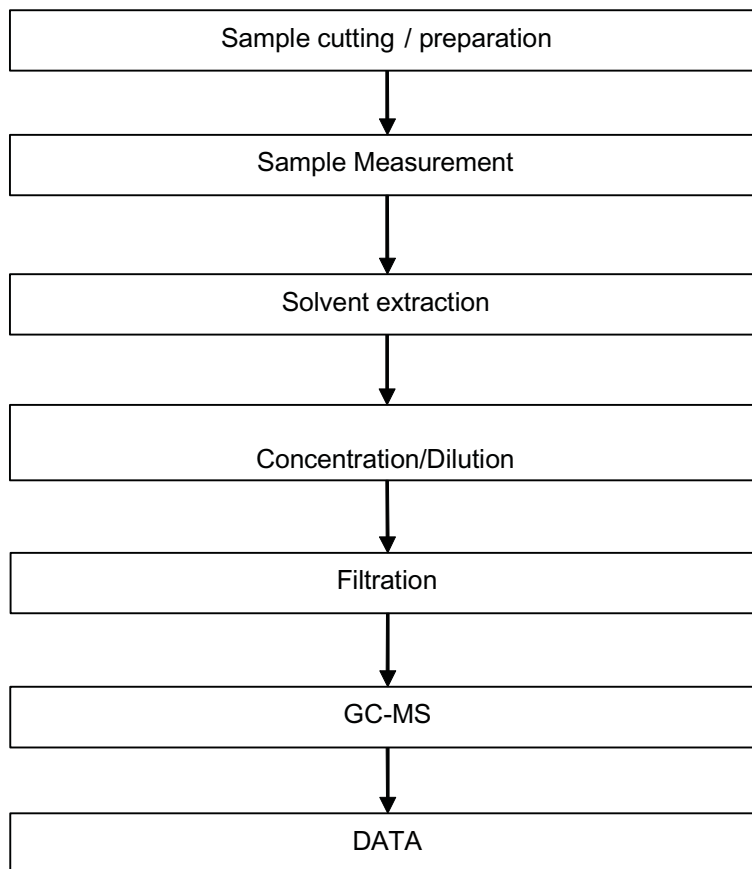


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ATTACHMENTS

Phthalates Testing Flow Chart



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Test Report

No. CANEC2103066123

Date: 15 Mar 2021

Page 6 of 6

Sample photo:



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Test Report



Report No. A2210204804101001

Company Name WHA YU INDUSTRIAL CO.,LTD

shown on Report

Address NO.326,SEC.2,KUNG TAO 5 ROAD, HSIN-CHU CITY, TAIWAN,R.O.C

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

Sample Name SABIC EXLPC 9330, White

Part No. PC9330

Sample Received Date May 29, 2021

Testing Period May 29, 2021 to Jun. 2, 2021

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).

Conclusion

Tested Sample	According to standard/directive	Result
Submitted Sample	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.



Grace Sun

Hill Zheng

Hill Zheng
Technical Manager

Reviewed by

Helen Liu

Date

Jun. 2, 2021

No. R179751920

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

Test Report

Report No. A2210204804101001

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

Test Report

Report No. A2210204804101001

Page 3 of 7

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg	1000 mg/kg
Tested Item(s)	Result	MDL	Limit
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	5 mg/kg	1000 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	Limit
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	5 mg/kg	1000 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. A2210204804101001

Page 4 of 7

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Phthalates (DBP, BBP, DEHP, DIBP)			
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg

Sample/Part Description White plastic grains

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

-1000 mg/kg = 0.1%

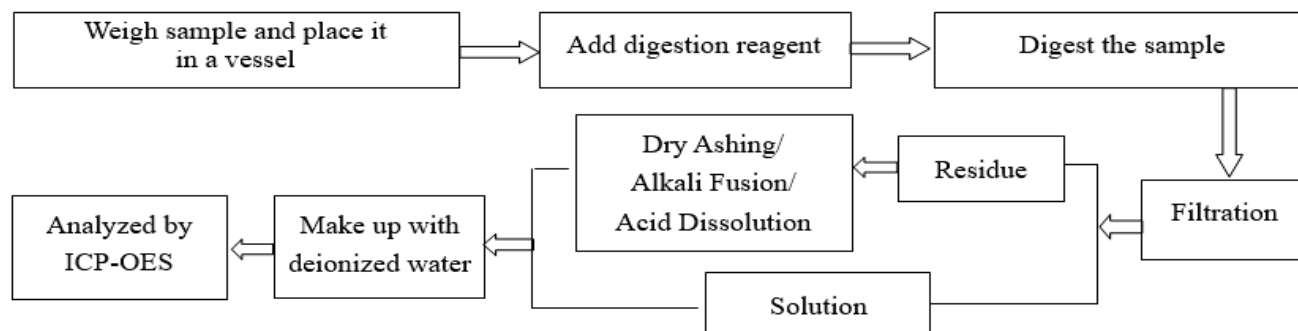
Test Report

Report No. A2210204804101001

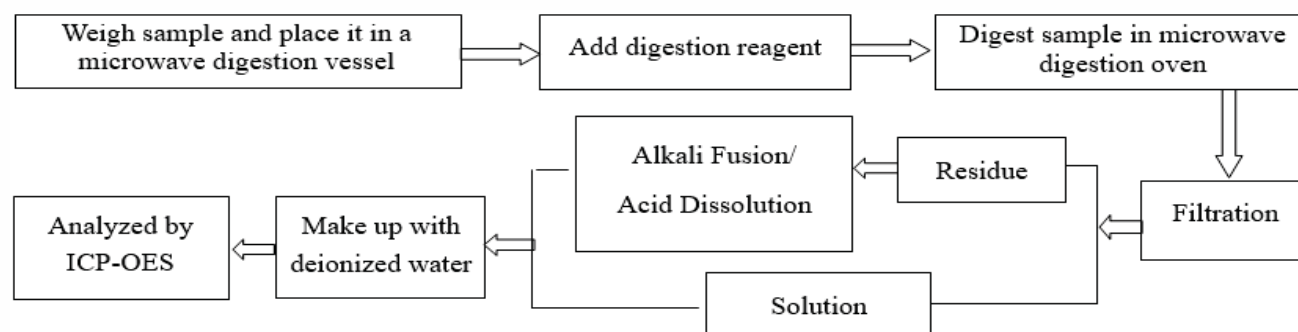
Page 5 of 7

Test Process

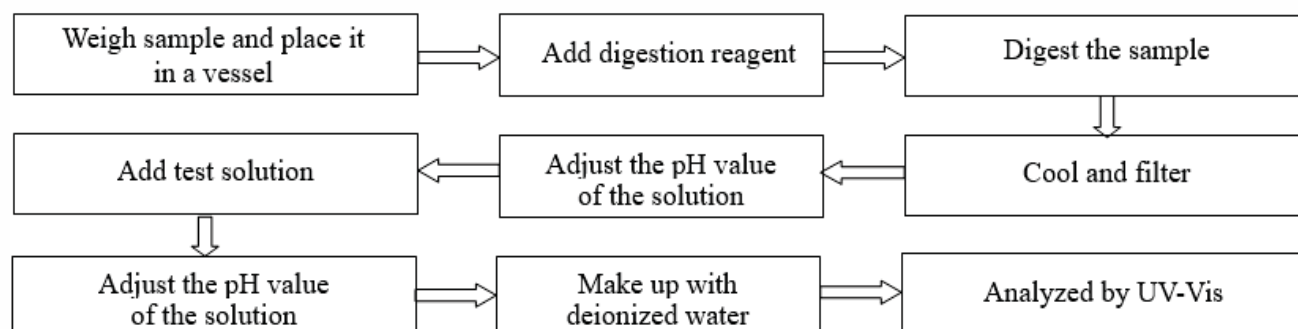
1. Lead (Pb), Cadmium (Cd), Chromium (Cr)



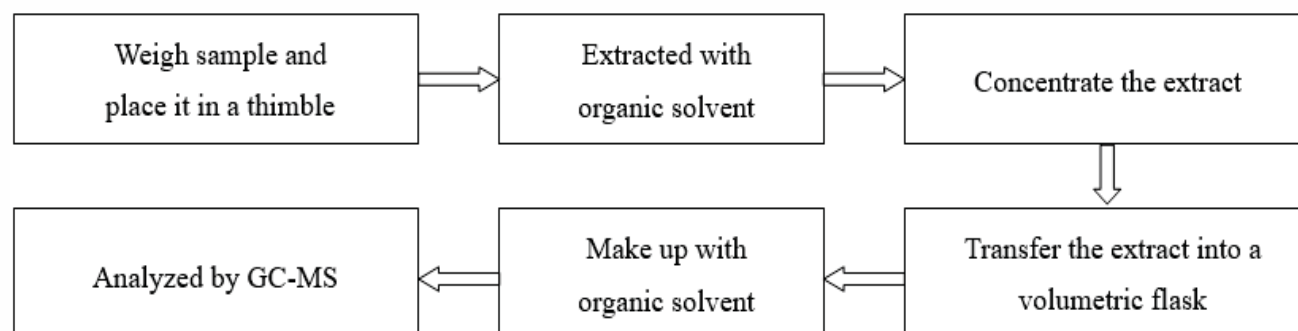
2. Mercury (Hg)



3. Hexavalent Chromium (Cr(VI))



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

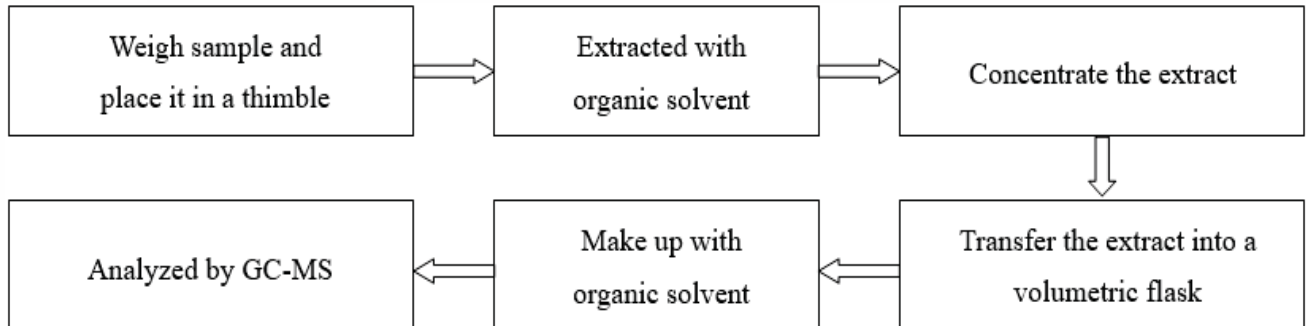


Test Report

Report No. A2210204804101001

Page 6 of 7

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



Test Report

Report No. A2210204804101001

Page 7 of 7

Photo(s) of the sample(s)



Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
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5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** End of report ***

Test Report

No. SZXEC2100525201

Date: 12 Mar 2021

Page 1 of 7

SHENZHEN RONG CAI INK CO,LTD

ROOM516, XINXIN BUILDING SKUINS OORKANT DIE EINDE SHAJING BAOAN BISTRICK SHENZHEN CITY

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

SGS Job No. : RP21-004065 - SZ

Model No. : ABS,180,AUV.HPET.DUVmixture

Client Ref. Info. : PS PBS SAS SY PPY PY PPD PPA PPE DB HDB SP QH
DYH PET EL SR OGS XY H130 SX UV UVA UVB UVC UVD
UVE. UVQ PEL BEL ND TPA MBL MPL LZ MB ET ETA ETB
H680 586 587 180 500 588.690 680 589 650 HZ GS HPUV
SCH COH 102 501 110 104 105 105A 105T 203 206. 209 300
302 304 305 3028 3038 401 403 404 406 408 501A 501T. 102A
601 602 159 133 140 134 160 191 877 9001 9002 9003 9004.
9005 9006 9007 9008 9009 8100 8200 8300 8400 8500 8600
8800. 8900 6800 8310 S-718 S-783 S-414 712 731 733 734 740
748 759. 623 111 112 113 T-3 T-7 T-63 S-3 T-186 S-1 S-2 S-3 S-7
S-3A BEL-01. EL-01 ET-01 DB-01 DB-02 HDB-01 DUV-01 DUV-02
DUV-03 D-03 DUV-04 586-01.586-03 586-04 587-03 587-04 PPE-01
690-01 QH-01 MBL-01 ET-01 ETA-01 650-01 GS-01 COH-03 COH-04
SR-01 OGS-01 588-01 HPET-01 mixture

Date of Sample Received : 08 Mar 2021

Testing Period : 08 Mar 2021 - 12 Mar 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.



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No. SZXEC2100525201

Date: 12 Mar 2021

Page 2 of 7

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

Andy

Andy Ni
Approved Signatory



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Test Report

No. SZXEC2100525201

Date: 12 Mar 2021

Page 3 of 7

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX21-005252.001	Grey paste

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. SZXEC2100525201

Date: 12 Mar 2021

Page 4 of 7

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)	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 Phthalate (DIBP)	1,000	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) 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.



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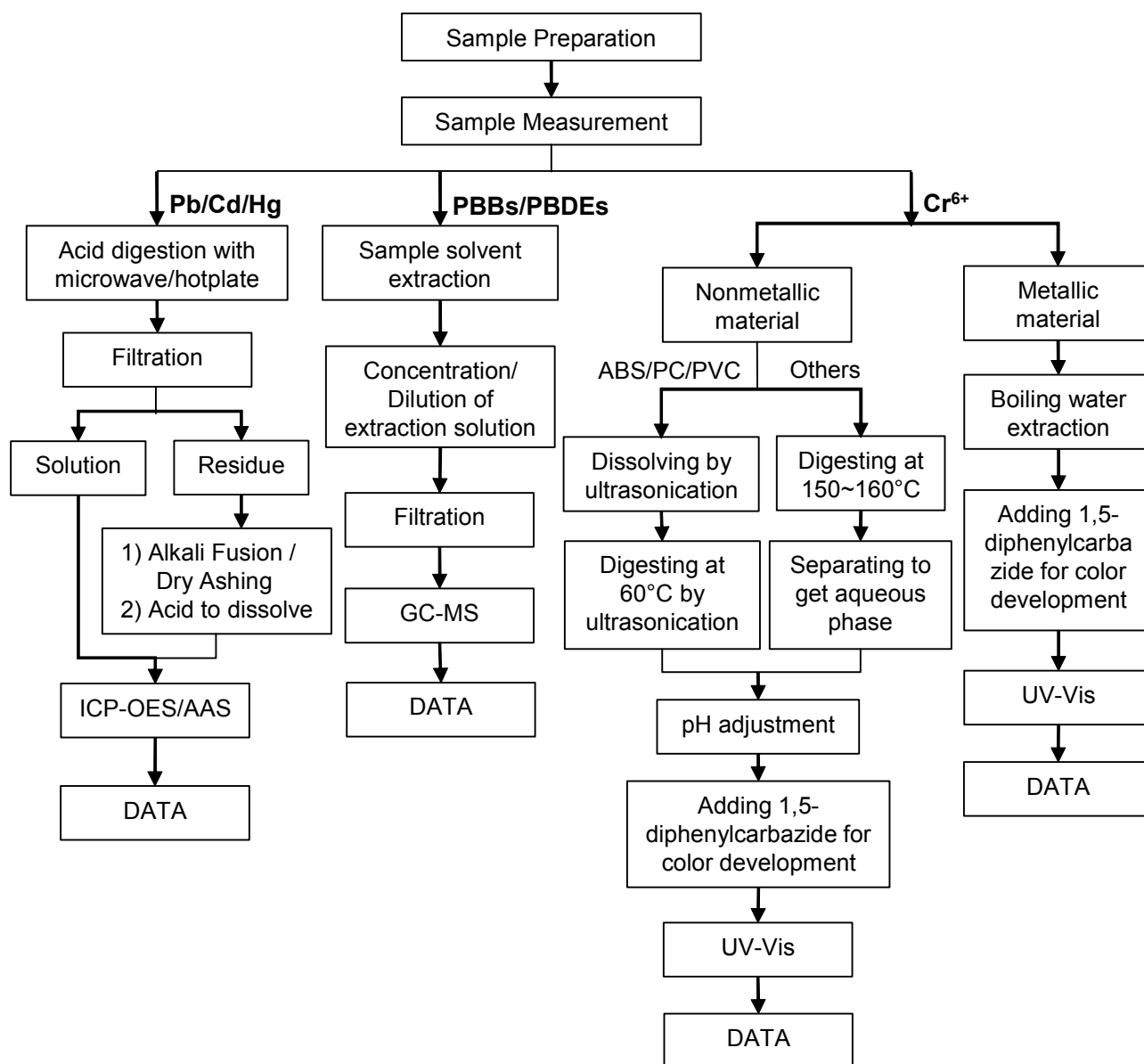
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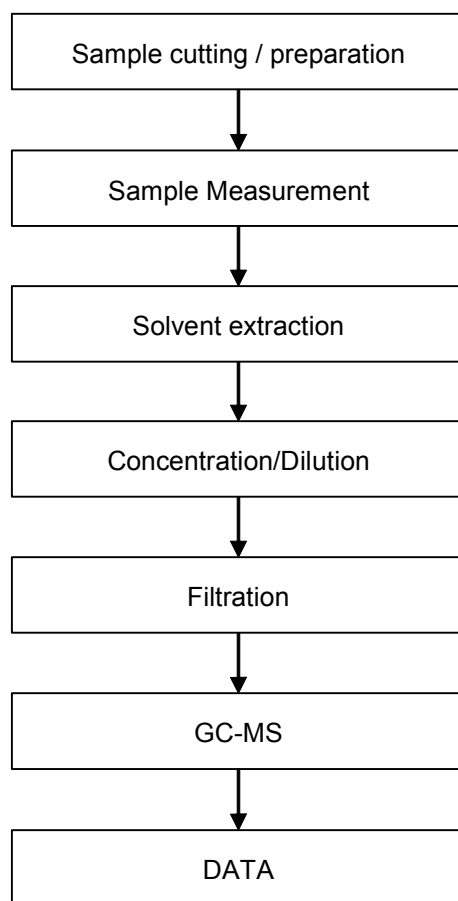
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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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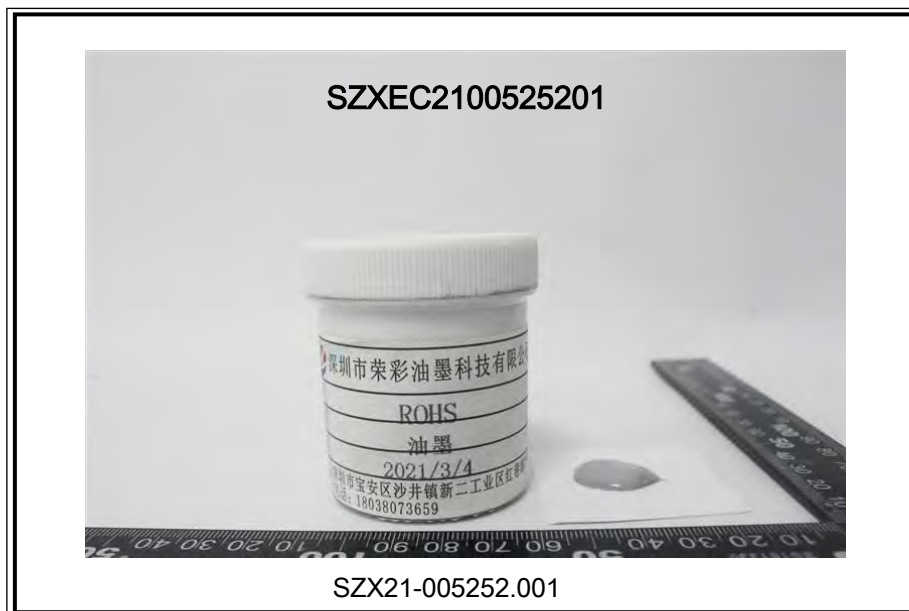
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Date: 12 Mar 2021

Page 7 of 7

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

Test Report

No. CANEC2103944807

Date: 26 Mar 2021

Page 1 of 11

SHENGYI TECHNOLOGY CO., LTD.

5 WESTERN INDUSTRY ROAD, SONGSHAN LAKE, DONGGUAN CITY, GUANGDONG, P.R. CHINA

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

SGS Job No. : CP21-011310 - GZ

Model No. : LNB33

Date of Sample Received : 18 Mar 2021

Testing Period : 18 Mar 2021 - 26 Mar 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

Jessie Li

Jessie Li
Approved Signatory



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Test Report

No. CANEC2103944807

Date: 26 Mar 2021

Page 2 of 11

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN21-039448.005	Double-side copper-clad laminate

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	005
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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No. CANEC2103944807

Date: 26 Mar 2021

Page 3 of 11

Test Item(s)	Limit	Unit	MDL	005
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.

(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) 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.

Elementary Analysis

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

Test Item(s)	Unit	MDL	005
Antimony (Sb)	mg/kg	10	ND
Beryllium (Be)	mg/kg	5	ND

Phthalate

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

Test Item(s)	CAS NO.	Unit	MDL	005
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



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Test Report

No. CANEC2103944807

Date: 26 Mar 2021

Page 4 of 11

Test Item(s)	CAS NO.	Unit	MDL	005
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
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%(w/w)	0.010	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%(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
Diisopentyl Phthalate (DIPP)	605-50-5	%(w/w)	0.003	ND
n-pentyl Isopentyl Phthalate (nPIPP)	776297-69-9	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear (DPP)	84777-06-0	%(w/w)	0.010	ND
Dipentyl Phthalates (DPENP/DnPP)	131-18-0	%(w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, dihexyl ester branched and linear(DHP)	68515-50-4	%(w/w)	0.010	ND
Dimethyl Phthalate (DMP)	131-11-3	%(w/w)	0.003	ND

Notes :

- (1) DBP,BBP,DEHP, DIBP Reference information: Entry 51 of Regulation (EU) 2018/2005 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 material in the articles.
- Please refer to Regulation (EU) 2018/2005 to get more detail information
- (2) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EU) 2015/326 amending Annex XVII of REACH Regulation (EC) No 1907/2006.
- 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 (EU) 2015/326 to get more detail information



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Test Report

No. CANEC2103944807

Date: 26 Mar 2021

Page 5 of 11

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>005</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 :

- (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)

Hexabromocyclododecane (HBCDD)

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

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	mg/kg	10	ND

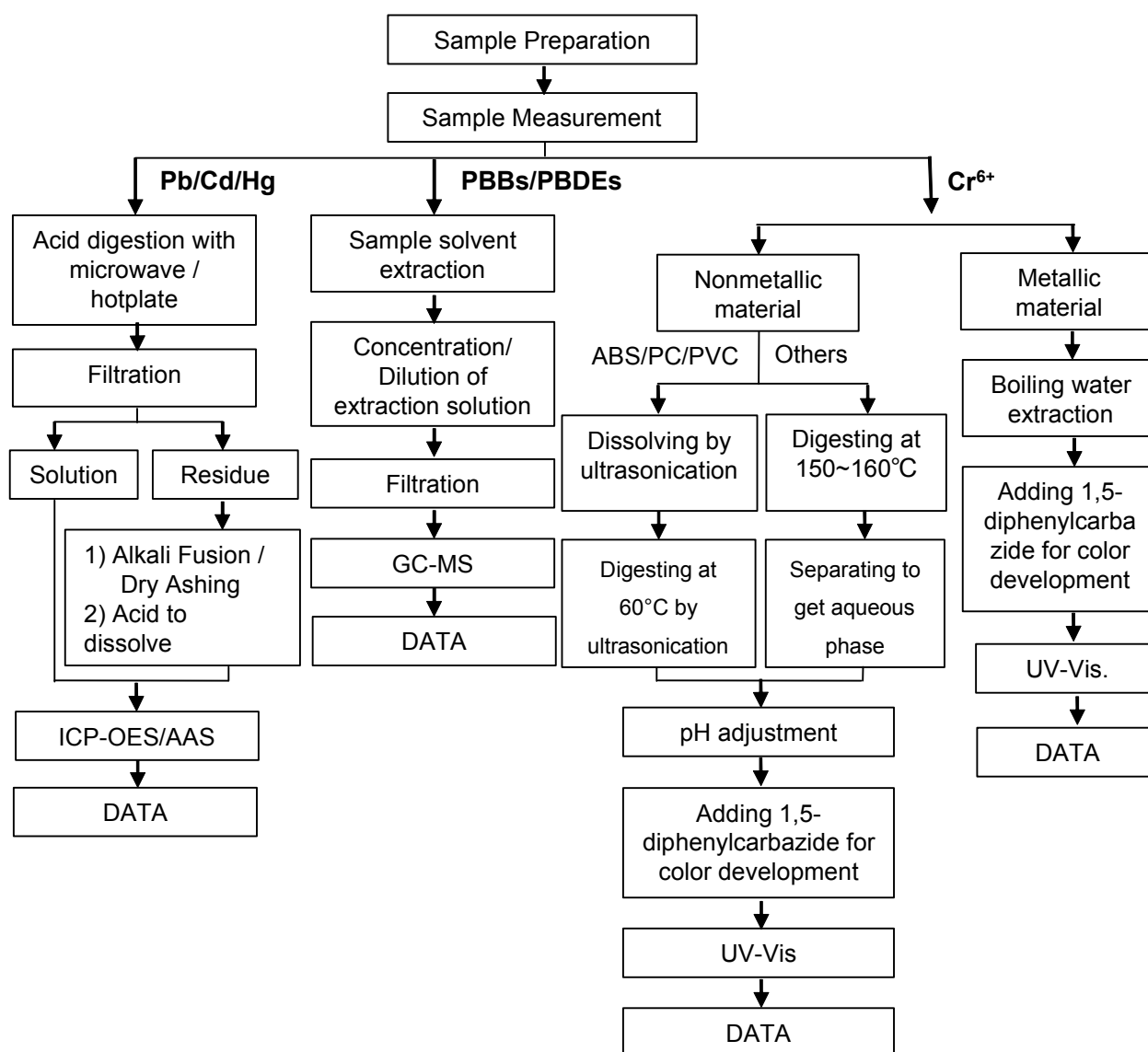


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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) Name of the person who made testing: Edith Zhang / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Qiong Liu
- 3) 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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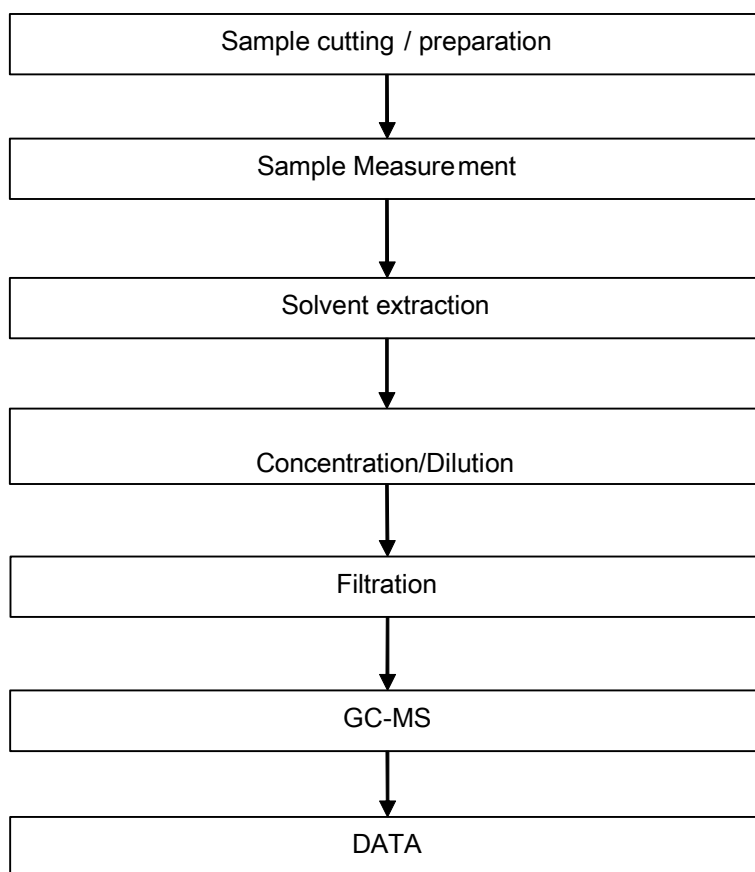
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Phthalates Testing Flow Chart

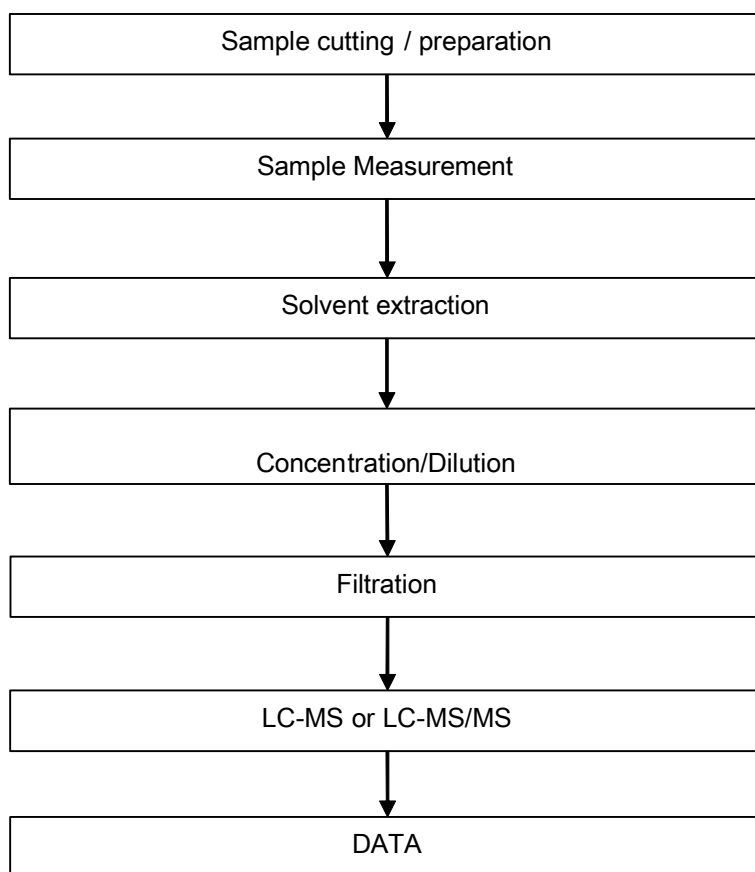
- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Qiong Liu



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PFOA / PFOS Testing Flow Chart

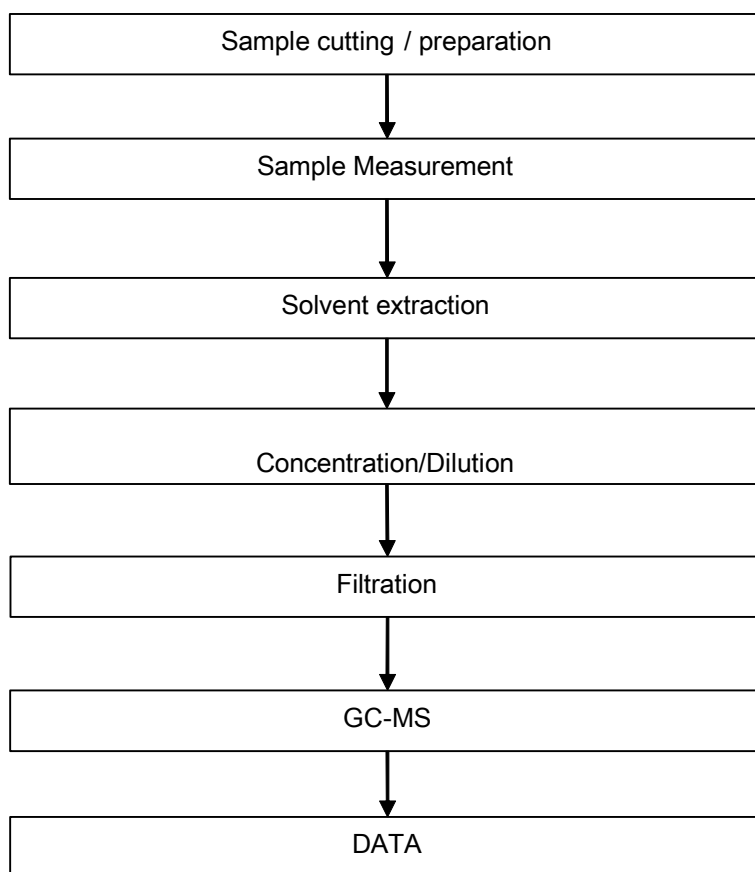
- 1) Name of the person who made testing: Olivia Li
- 2) Name of the person in charge of testing: Qiong Liu



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HBCDD Testing Flow Chart

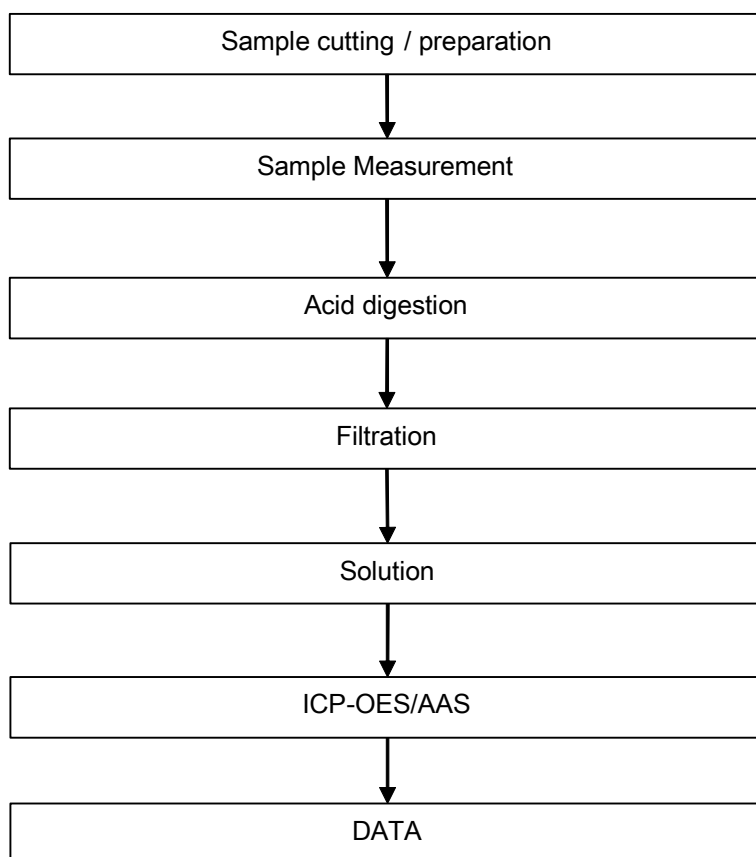
- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Qiong Liu



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Elementary Testing Flow Chart

- 1) Name of the person who made testing : Edith Zhang
- 2) Name of the person in charge of testing : Bella Wang



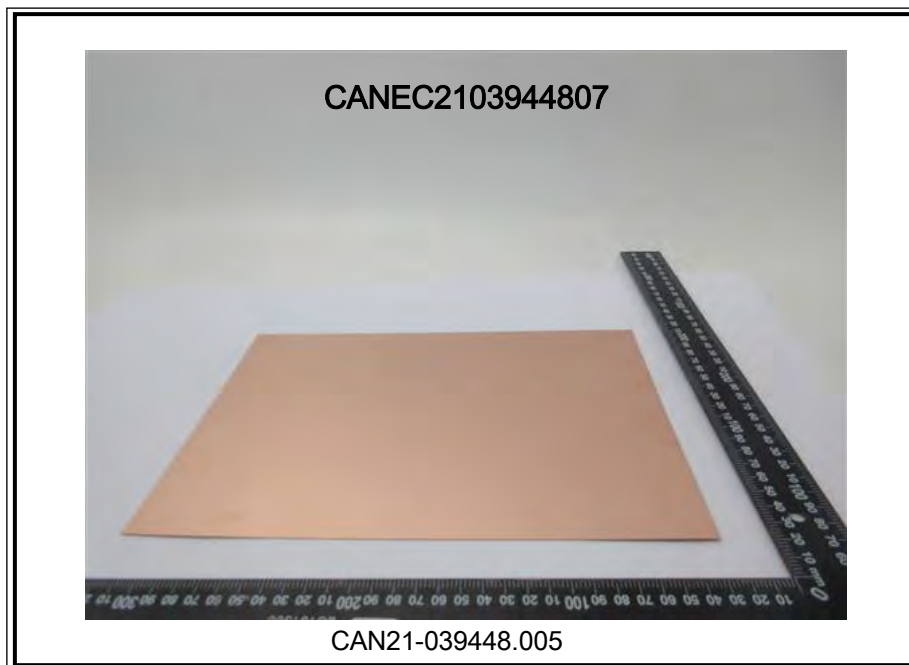
Test Report

No. CANEC2103944807

Date: 26 Mar 2021

Page 11 of 11

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



檢測報告 Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

第 1 頁 共 10 頁
Page 1 of 10

報告抬頭公司名稱 尚洪股份有限公司
Company Name GREENTOP TECHNOLOGY CO.,LTD
shown on Report
地 址 709 台南市安南區工業一路 85 號
Address NO 85,GONGYE 1ST RD,ANNAN DIST,TAINAN CITY 709,TAIWAN

以下測試之樣品及樣品信息由申請者提供並確認

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

樣品名稱 防焊綠色環保油墨
Sample Name GREEN MATERIAL OF SOLDER MASK
樣品型號 S70G1-Z
Part No. S70G1-Z
樣品顏色 綠色
Color GREEN
樣品接收日期 2021.10.19
Sample Received Date Oct. 19, 2021
樣品檢測日期 2021.10.19-2021.10.25
Testing Period Oct. 19, 2021 to Oct. 25, 2021

檢測要求 根據客戶要求，對所提交樣品中的鉛(Pb)，鎘(Cd)，汞(Hg)，六價鉻(Cr(VI))，多溴聯苯(PBBs)，多溴二苯醚(PBDEs)，銻(Sb)，鉍(Be)，砷(As)，六溴環十二烷(HBCDD)，氟(F)，氯(Cl)，溴(Br)，碘(I)，全氟辛烷磺酸(PFOS)，全氟辛酸(PFOA)，鄰苯二甲酸酯進行測試。

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), Antimony (Sb), Beryllium (Be), Arsenic(As), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA), Phthalates in the submitted sample(s).

檢測依據/檢測結果 請參見下頁。
Test Method/Test Result(s) Please refer to the following page(s).

主 檢
Tested by

許振斌

審 核
Reviewed by

黃文昕

批 准
Approved by

馮智聰

日 期
Date

2021.10.25

實驗室經理 Laboratory Manager

No. R556666613

CTI 華測檢測技術有限公司
Testing Center, Centre Testing International (Taiwan) Co., Ltd.

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5F-6, No.9, Sec.2, Nankan Rd, Luzhu Dist., Taoyuan, Taiwan



檢測報告

Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

第 2 頁 共 10 頁
Page 2 of 10

檢測依據 Test Method

測試項目 Tested Item(s)	測試方法 Test Method	測試儀器 Measured Equipment(s)
鉛 Lead(Pb)	IEC 62321-5:2013	ICP-OES
鎘 Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六價鉻 Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017	UV-Vis
多溴聯苯 Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
鄰苯二甲酸酯 Phthalates	IEC 62321-8:2017	GC-MS
銻 Antimony (Sb)	參考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
鈹 Beryllium (Be)	參考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
砷 Arsenic(As)	參考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
六溴環十二烷 (HBCDD) Hexabromocyclododecane (HBCDD)	IEC 62321-6:2015	GC-MS
氟 Fluorine (F)	參考 EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	參考 EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	參考 EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	參考 EN 14582:2016 Refer to EN 14582:2016	IC
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	參考 DIN CEN/TS 15968:2010 Refer to DIN CEN/TS 15968:2010	LC-MS-MS
全氟辛烷酸 Perfluorooctanoic Acid (PFOA)	參考 DIN CEN/TS 15968:2010 Refer to DIN CEN/TS 15968:2010	LC-MS-MS

檢測報告
Test Report報告編號 A221043195210100109E
Report No. A221043195210100109E第 3 頁 共 10 頁
Page 3 of 10

檢測結果 Test Result(s)

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
鉛 Lead (Pb)	N.D.	2 mg/kg
鎘 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六價鉻 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
多溴聯苯 Polybrominated Biphenyls(PBBs)		
一溴聯苯 Monobromodiphenyl	N.D.	5 mg/kg
二溴聯苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴聯苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴聯苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴聯苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴聯苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴聯苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴聯苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴聯苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴聯苯 Decabromobiphenyl	N.D.	5 mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromobiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromobiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromobiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromobiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromobiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromobiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromobiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromobiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromobiphenyl ether	N.D.	5 mg/kg

檢測報告

Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

第 4 頁 共 10 頁
Page 4 of 10

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
鄰苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
鄰苯二甲酸二正丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
鄰苯二甲酸丁基苄酯(BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
鄰苯二甲酸二(2-乙基己基)酯(DEHP) Di-2-ethylhexyl phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
鄰苯二甲酸二異丁酯(DIBP) Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
銻 Antimony (Sb)	N.D.	10 mg/kg
鈹 Beryllium (Be)	N.D.	10 mg/kg
砷 Arsenic (As)	N.D.	10 mg/kg
六溴環十二烷(HBCDD) Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	N.D.	0.01 mg/kg
全氟辛酸 Perfluorooctanoic Acid (PFOA)	N.D.	0.01 mg/kg

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
氟 Fluorine (F)	N.D.	50 mg/kg
氯 Chlorine (Cl)	N.D.	50 mg/kg
溴 Bromine (Br)	N.D.	50 mg/kg
碘 Iodine (I)	N.D.	50 mg/kg

檢測報告
Test Report報告編號 A221043195210100109E
Report No. A221043195210100109E第 5 頁 共 10 頁
Page 5 of 10

測試項目 Tested Item(s)	結果 Result	方法檢出限 MDL
鄰苯二甲酸酯 Phthalates		
鄰苯二甲酸二異壬酯(DINP) Diisononyl phthalate(DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
鄰苯二甲酸二己酯(DNHP) Di-n-hexyl phthalate(DNHP) CAS#:84-75-3	N.D.	50 mg/kg
鄰苯二甲酸二異癸酯(DIDP) Diisodecyl phthalate(DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
鄰苯二甲酸二正辛酯(DNOP) Di-n-octyl phthalate(DNOP) CAS#:117-84-0	N.D.	50 mg/kg
鄰苯二甲酸二戊酯(DPP) Dipentyl phthalate(DPP) CAS#:131-18-0	N.D.	50 mg/kg
鄰苯二甲酸二甲酯 Dimethyl phthalate (DMP) CAS#:131-11-3	N.D.	50 mg/kg

樣品/部位描述 綠色油墨(乾重)
Sample/Part Description Green ink (dry weight)

備註: 對於檢測鉛, 鎘, 汞, 銻, 鉍, 砷之樣品已完全溶解。

-N.D. = 未檢出 (小於方法檢出限)

-mg/kg = ppm = 百萬分之一

-測試樣品經過 140°C 烘烤 3 小時後測試

-根據客戶聲明, 本報告中樣品和報告 A2210431952101001E 中的樣品為同材質, 本報告中樣品的測試結果引自於報告 A2210431952101001E。

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-The sample was tested after drying for 3 hours under 140°C.

-According to the client's statement, the material of sample in this report is the same as the sample in report No. A2210431952101001E, so the test result(s) is(are) presented in reference to that one.

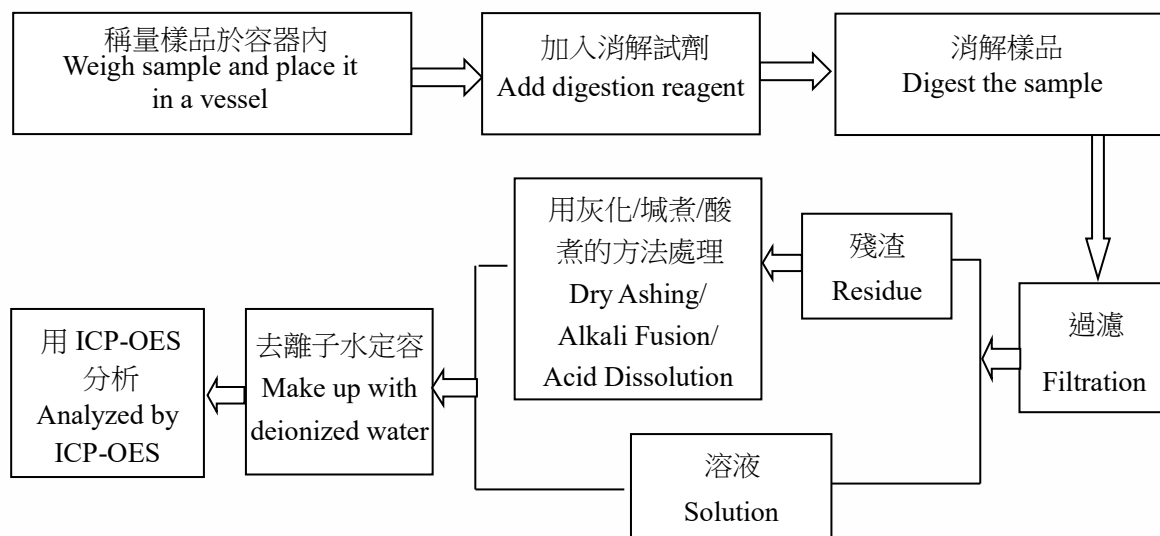
檢測報告 Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

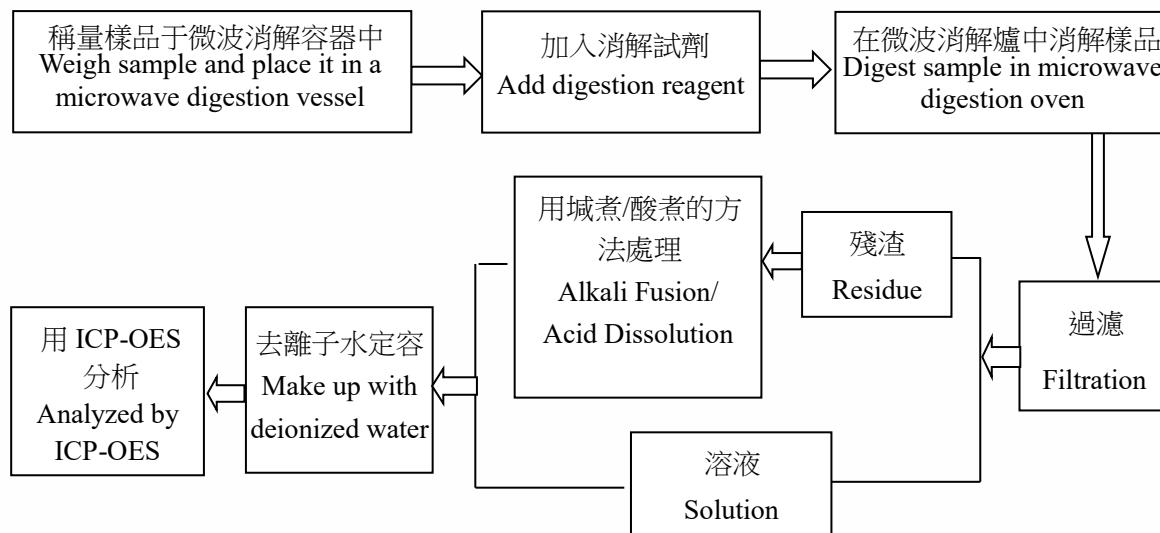
第 6 頁 共 10 頁
Page 6 of 10

檢測流程 Test Process

1. 鉛 Lead(Pb), 鎘 Cadmium(Cd)



2. 汞 Mercury(Hg)

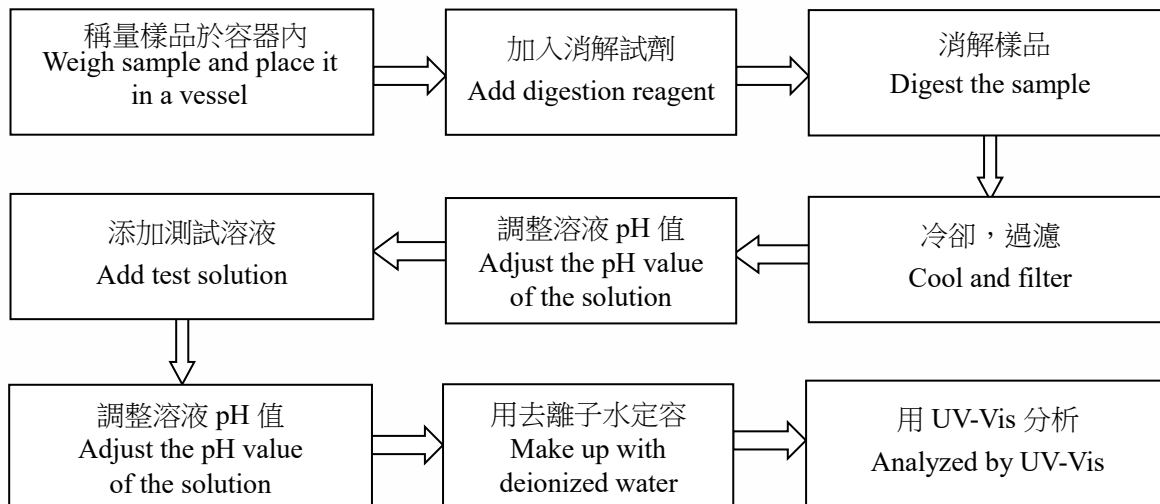


檢測報告 Test Report

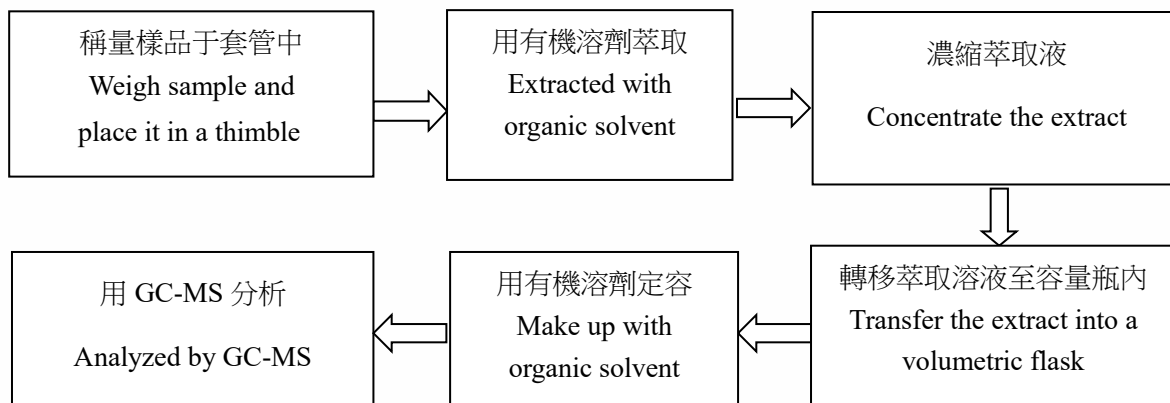
報告編號 A221043195210100109E
Report No. A221043195210100109E

第 7 頁 共 10 頁
Page 7 of 10

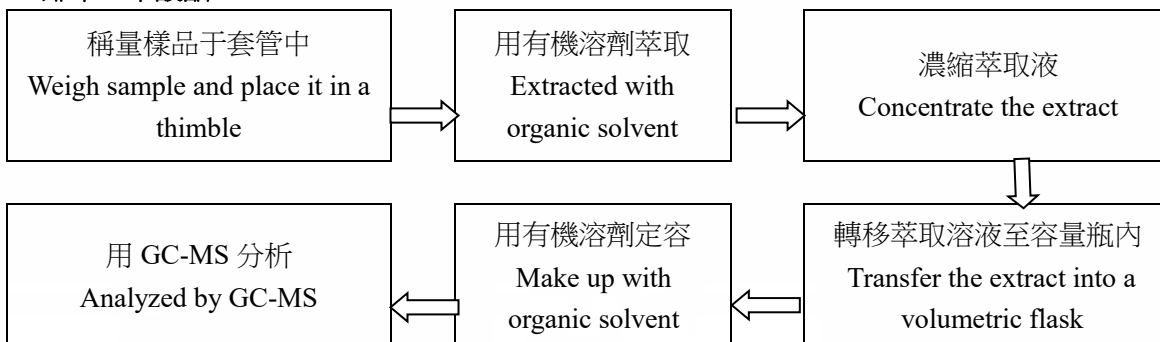
3. 六價鉻 Hexavalent Chromium(Cr(VI))



4. 多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs),多溴聯苯 Polybrominated Biphenyls(PBBs)



5. 鄰苯二甲酸酯 Phthalates

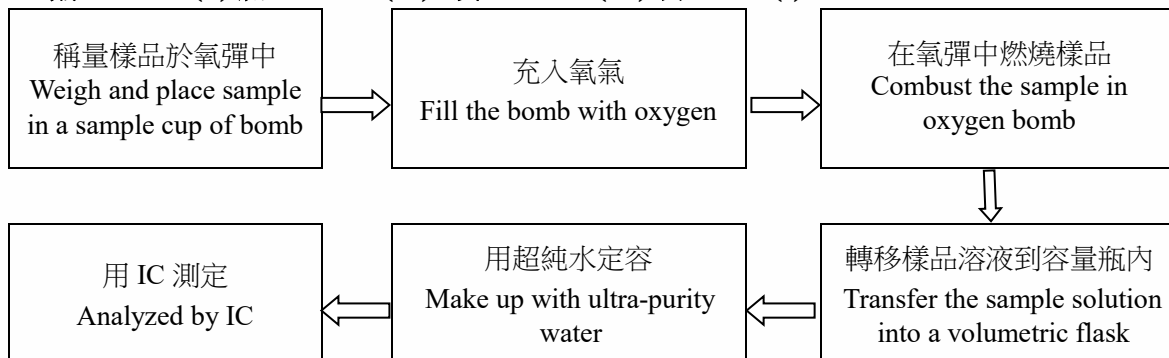


檢測報告 Test Report

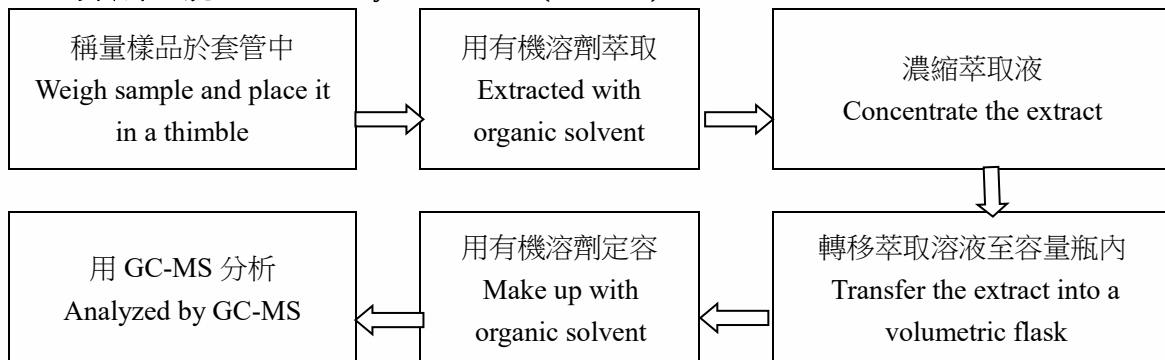
報告編號 A221043195210100109E
Report No. A221043195210100109E

第 8 頁 共 10 頁
Page 8 of 10

6. 氟 Fluorine (F), 氯 Chlorine (Cl), 溴 Bromine (Br), 碘 Iodine (I)

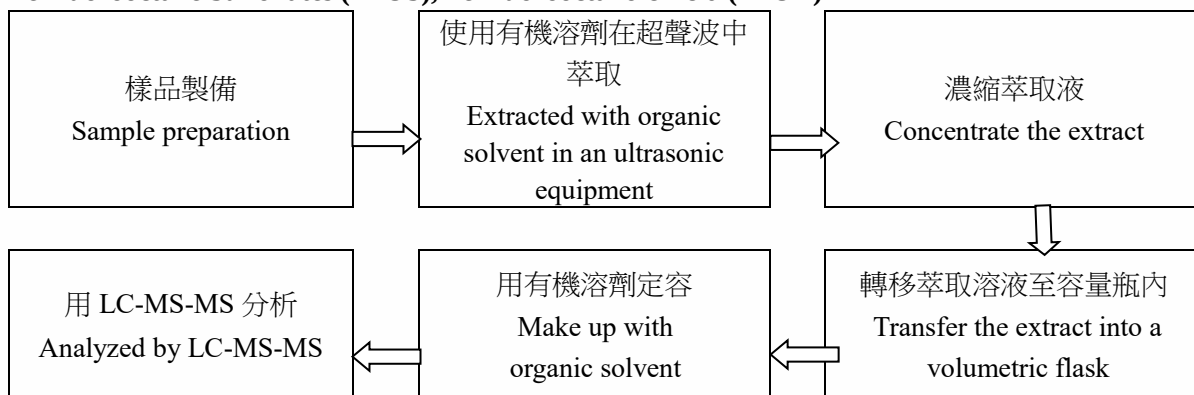


7. 六溴環十二烷 Hexabromocyclododecane (HBCDD)



8. 全氟辛烷磺酸(PFOS), 全氟辛酸(PFOA)

Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA)

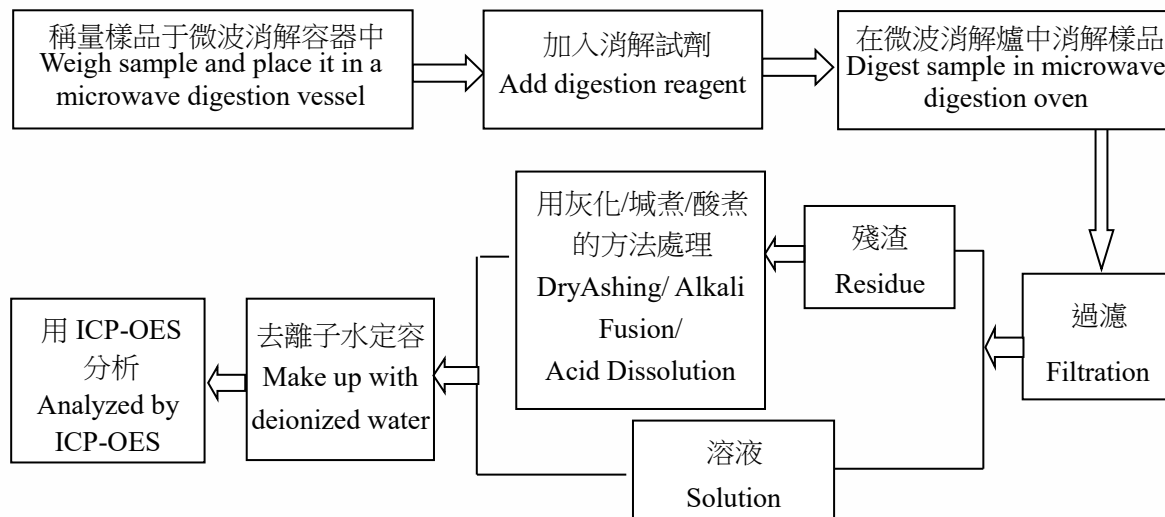


檢測報告 Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

第 9 頁 共 10 頁
Page 9 of 10

9. 銻 Antimony (Sb), 鈹 Beryllium (Be), 砷 Arsenic (As)



檢測報告 Test Report

報告編號 A221043195210100109E
Report No. A221043195210100109E

第 10 頁 共 10 頁
Page 10 of 10

樣品圖片

Photo(s) of the sample(s)



聲明 Statement :

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Company Name and Address shown on Report, 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. 本報告檢測結果僅對受測樣品負責；

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

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*** 報告結束 ***

*** End of Report ***

Test Report

No. SHAEC2125040401

Date: 24 Nov 2021

Page 1 of 11

JIANGSU KUANGSHUN PHOTOSENSITIVITY NEW-MATERIAL STOCK CO., LTD.

Huacheng Road 18, Qingyang Industried Area, Jiangyin City, Jiangsu Province

The following sample(s) was/were submitted and identified on behalf of the clients as : Liquid Photoimageable Solder Mask

SGS Job No. : SP21-035837 - SUZ
 Model No. : KSM-S6189EWT
 Material No. : KSM-19E
 Client Ref. Information : To 75°C pre-bake for 3 hours; 120°C, 1 hour curable mixture
 Date of Sample Received : 18 Nov 2021
 Testing Period : 18 Nov 2021 - 24 Nov 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 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.

Jenny Lan

Jenny Lan
 Approved Signatory

scan to see the report



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Test Report

No. SHAEC2125040401

Date: 24 Nov 2021

Page 2 of 11

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-250404.001	White solid

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	001
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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Test Report

No. SHAEC2125040401

Date: 24 Nov 2021

Page 3 of 11

<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
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.

Sulfur

Test Method : With reference to EN 14582: 2016, analysis was performed by Ion Chromatograph (IC).

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Sulfur (S)	mg/kg	50	236

Hexabromocyclododecane (HBCDD/HBCD)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromocyclododecane (HBCDD/HBCD)	25637-99-4/ 3194-55-6	mg/kg	10	ND

Phthalates Content



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Test Report

No. SHAEC2125040401

Date: 24 Nov 2021

Page 4 of 11

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Dibutyl Phthalate (DBP)	84-74-2	%	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Dimethyl Phthalate (DMP)	131-11-3	%	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND
Di-n-pentyl Phthalates (DnPP)	131-18-0	%	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%	0.003	ND
Diisooctyl Phthalate (DiOP)	27554-26-3	%	0.01	ND
Dipropyl Phthalate (DPrP)	131-16-8	%	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND

Perfluorooctanesulfonate (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA)

Test Method : With reference to CEN/TS 15968:2010, analysis is performed by HPLC-MS or LC-MS-MS.

Test Item(s)	CAS NO.	Unit	MDL	001
Perfluorooctane Sulfonates (PFOS)^	1763-23-1	mg/kg	0.01	ND
Perfluorooctanoic Acid (PFOA) and its salts+		mg/kg	0.01	ND

Notes :

- (1) + PFOA refer to 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)



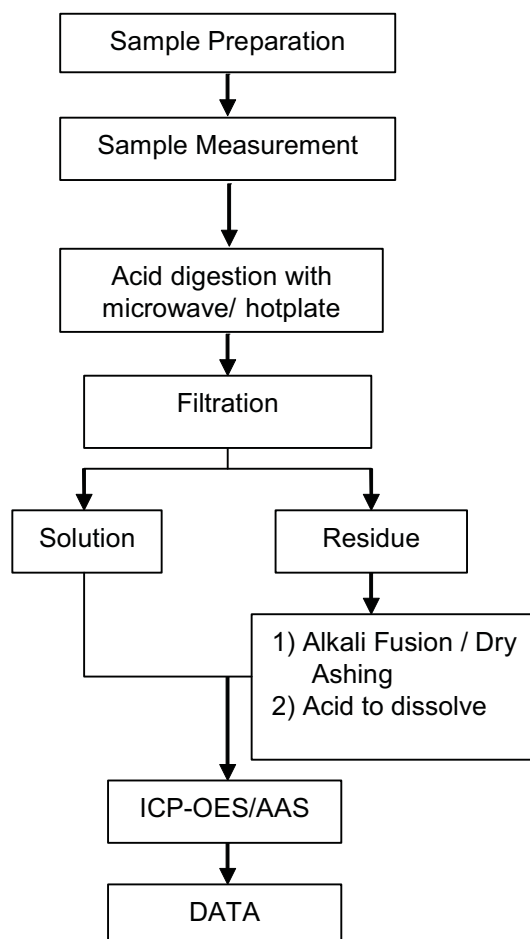
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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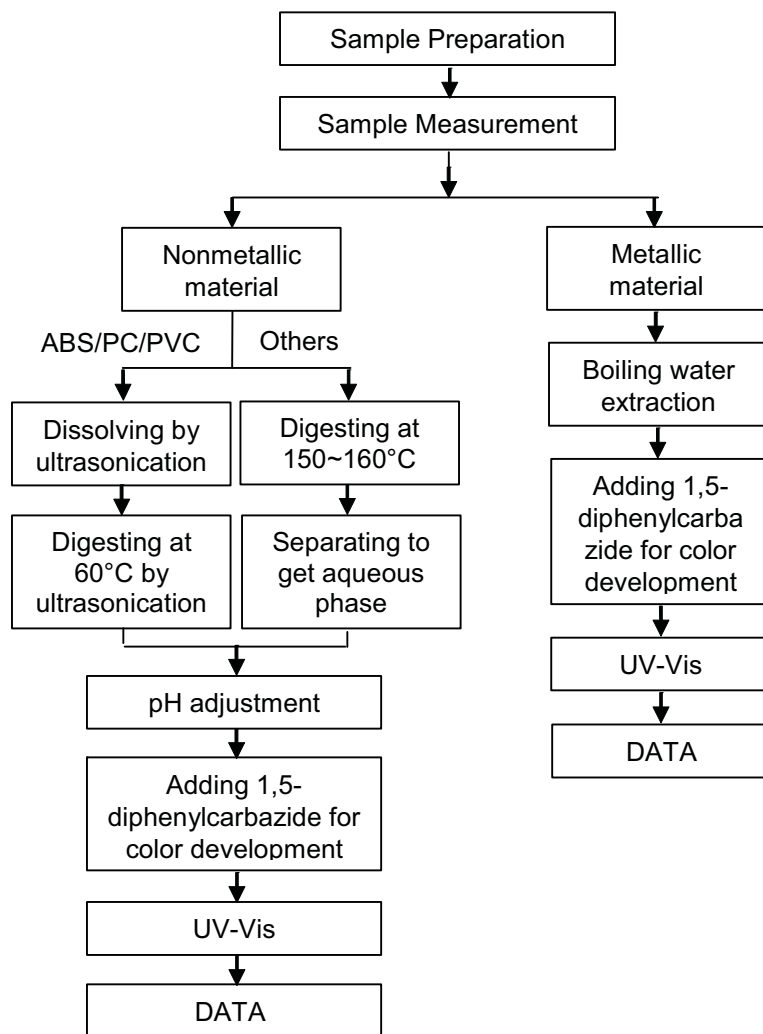
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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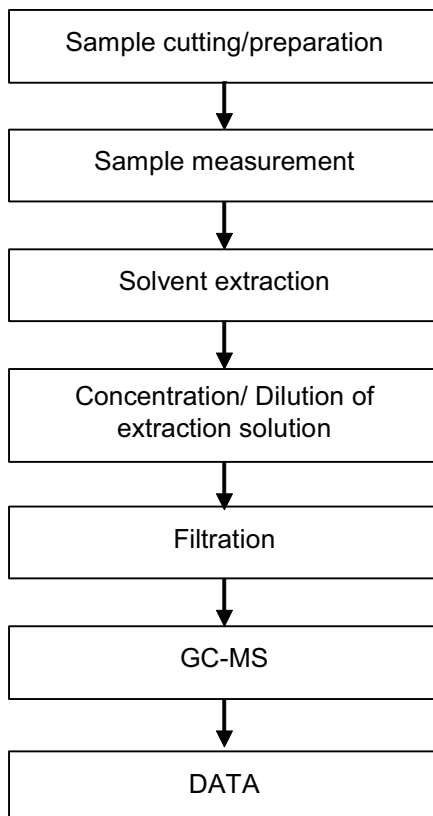
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PBBs/PBDEs Testing Flow Chart



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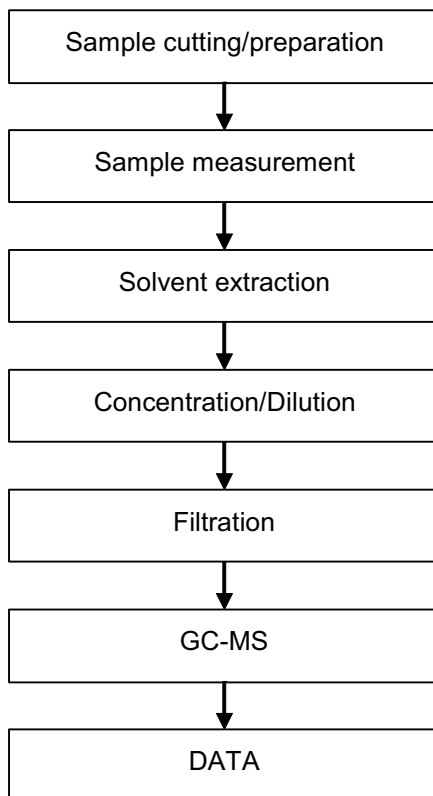
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Phthalates Testing Flow Chart



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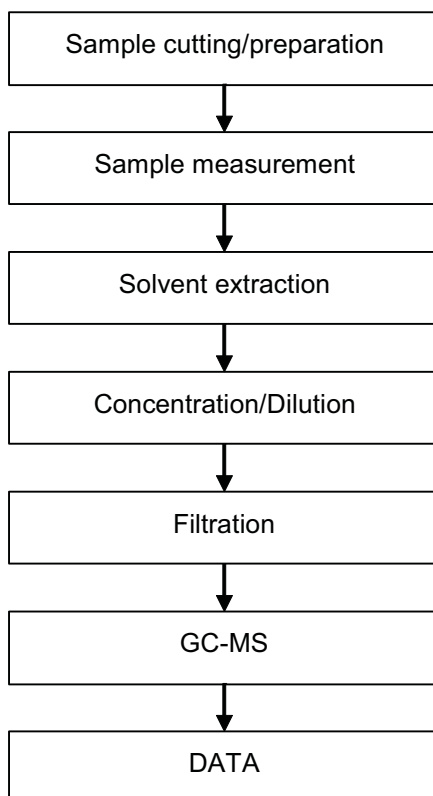
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HBCDD Testing Flow Chart



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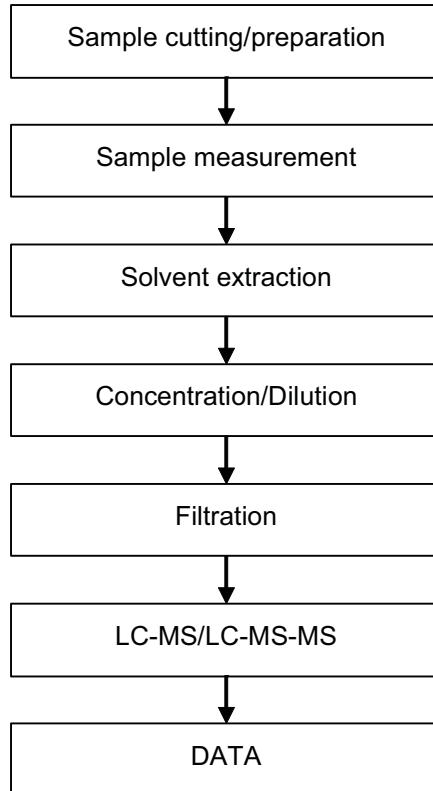
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PFASs/ PFOS/PFOA Testing Flow Chart



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No. SHAEC2125040401

Date: 24 Nov 2021

Page 11 of 11

Sample photo:



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*** End of Report ***



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Test Report

Report No. A2210278310101017

Company Name SHENZHEN BAIKAL ELECTRONIC MATERIALS CO., LTD
shown on ReportAddress 7F, A BLOCK, ZONGTAI BLDG, 2007 BAOYUAN ROAD, XIXIANG, BAOAN,
SHENZHEN, CHINA

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

Sample Name OSP
Part No. M2601/M2601A/M2605/M2605A/M2607/M2607/M2608/M2608A/M2608D/
M2608DA/M2608H/M2608HA/M2608X/M2608Z/M2608XA/M2608T/M2608HT/
M2608TM/M2609/M2609A/M2609T/M3607/M3607/M3608/M3608A/M3608D/
M3608DA/M3608H/M3608HA/M3608X/M3608Z/M3608XA/M3608T/M3608HT/
M3608TM/F302/F302A/F302B/F302D/F302E/F302F/F302K/M302/M302A/M302B/
OSP Stripper/OSP Filmer/OSP Dilution

Sample Received Date Jul. 15, 2021

Testing Period Jul. 15, 2021 to Jul. 21, 2021

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), Phthalates in the submitted sample(s).

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

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

Conclusion

Tested Sample	According to standard/directive	Result
Submitted Sample	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.



Grace Sun

Hill Zheng

Hill Zheng

Technical Manager

Reviewed by

Amosong

Date

Jul. 21, 2021

No. R179757025

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

Test Report

Report No. A2210278310101017

Page 2 of 8

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:2018	GC-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS

Test Report

Report No. A2210278310101017

Page 3 of 8

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg	1000 mg/kg
Tested Item(s)	Result	MDL	Limit
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	5 mg/kg	1000 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	Limit
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	5 mg/kg	1000 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. A2210278310101017

Page 4 of 8

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Phthalates (DBP, BBP, DEHP, DIBP)			
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg
Tested Item(s)	Result	MDL	
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg	
Tested Item(s)	Result	MDL	
Phthalates			
Di-n-octyl phthalate(DNOP) CAS#:117-84-0	N.D.	30 mg/kg	
Di-isononyl phthalate(DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg	
Di-iso-decyl phthalate(DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg	
Dimethyl phthalate(DMP) CAS#:131-11-3 [#]	N.D.	30 mg/kg	
Diethyl phthalate(DEP) CAS#:84-66-2 [#]	N.D.	30 mg/kg	
Diisobutyl phthalate(DIBP) CAS#:84-69-5 [#]	N.D.	30 mg/kg	
Dipentyl phthalate(DPP) CAS#:131-18-0 [#]	N.D.	30 mg/kg	
Di-n-hexyl phthalate(DNHP) CAS#:84-75-3 [#]	N.D.	30 mg/kg	
Bis(2-methoxyethyl) phthalate(DMEP) CAS#:117-82-8	N.D.	30 mg/kg	
Diisopentylphthalate(DIPP) CAS#:605-50-5 [#]	N.D.	30 mg/kg	
^① 1,2-Benzenedicarboxylic acid, di-(C7-11)-branched and linear alkyl esters(DHNUP) CAS#:68515-42-4	N.D.	50 mg/kg	

Test Report

Report No. A2210278310101017

Page 5 of 8

Sample/Part Description Light blue liquid

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

-1000 mg/kg = 0.1%

-^①: In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.

-Information Statement: The sample is a mixture of several substances.

Note: -#indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.

CTI 华测检测
A2210278310101017
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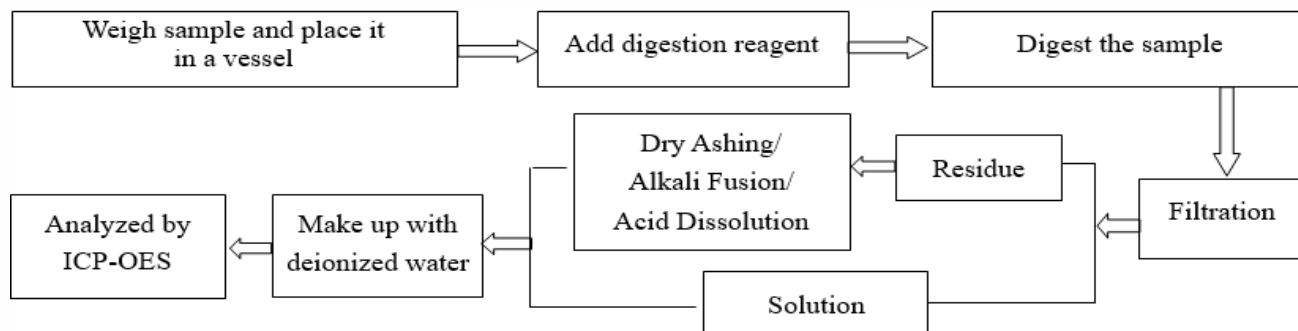
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Report No. A2210278310101017

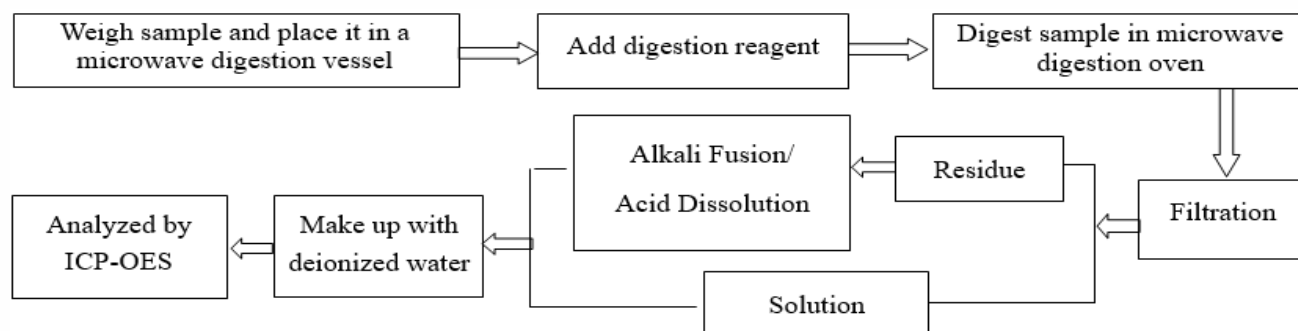
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Test Process

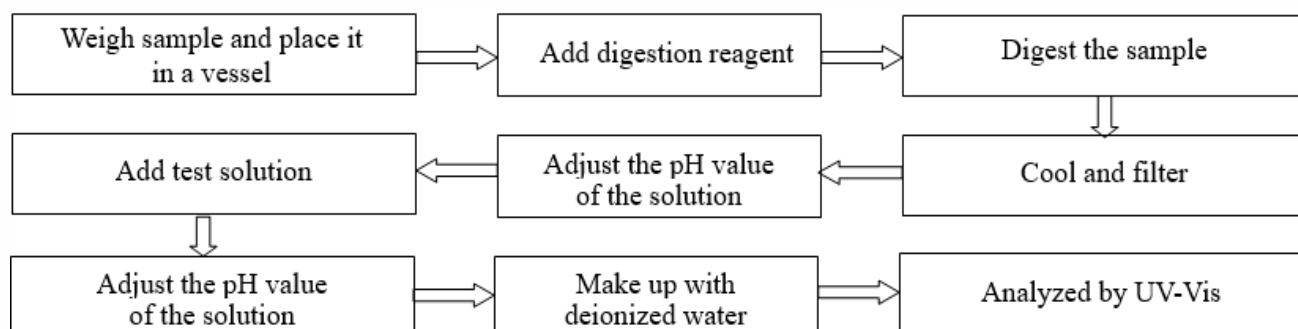
1. Lead (Pb), Cadmium (Cd), Chromium (Cr)



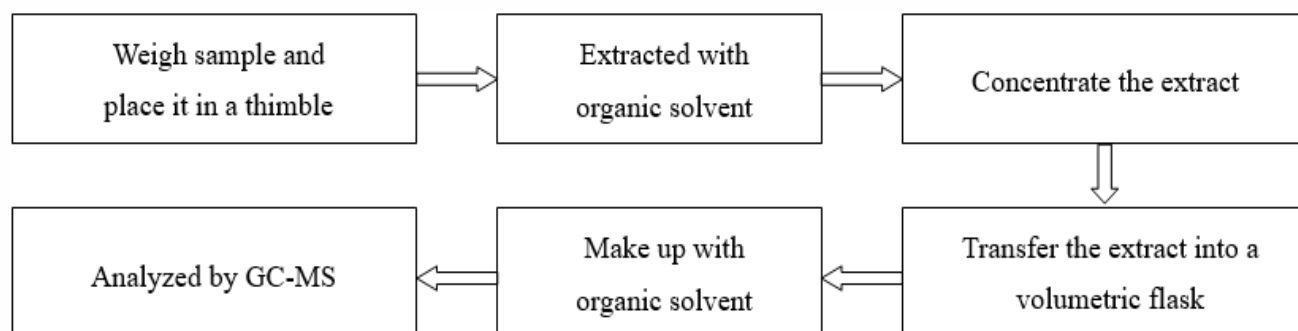
2. Mercury (Hg)



3. Hexavalent Chromium (Cr(VI))



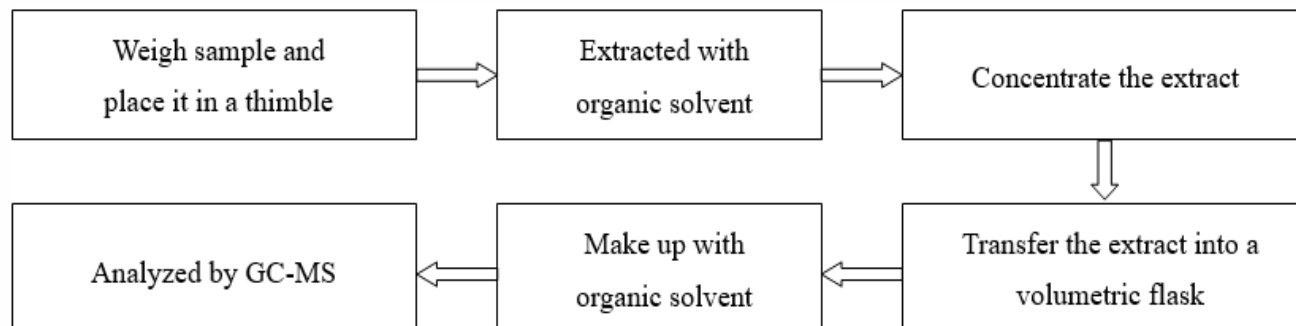
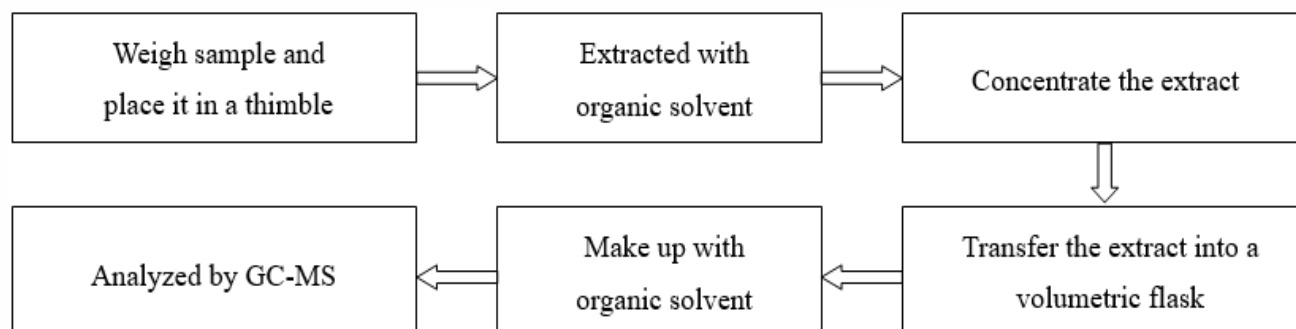
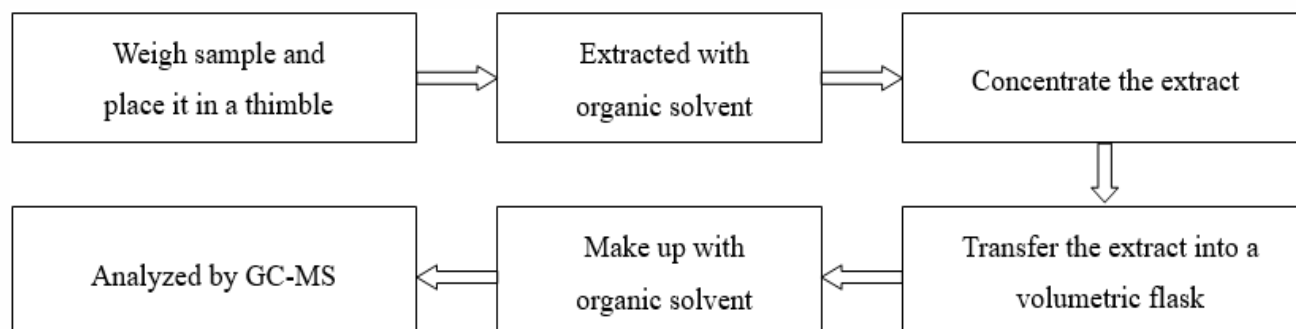
4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



Test Report

Report No. A2210278310101017

Page 7 of 8

5. Phthalates (DBP, BBP, DEHP, DIBP)**6. Hexabromocyclododecane (HBCDD)****7. Phthalates**

Test Report

Report No. A2210278310101017

Page 8 of 8

Photo(s) of the sample(s)



Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant 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.

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Test Report

No. CANEC2124348309

Date: 10 Jan 2022

Page 1 of 6

HUI ZHOU CITY FAN-ZHONG-BAO RUBBER&PLASTIC FOAM FACTORY CO.,LTD.
XINTANG INDUSTRIAL ZONE,QIU-BAO ROAD,QIU-CHANG TOWN,HUIYANG
DISTRICT,HUIZHOU,GUANGDONG PROVINCE

The following sample(s) was/were submitted and identified on behalf of the clients as : Environmental protection
EVA foam rubber

SGS Job No. : CP21-068413 - SZ
Date of Sample Received : 23 Dec 2021
Testing Period : 23 Dec 2021 - 04 Jan 2022
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



Zm guan
Approved Signatory



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

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Test Report

No. CANEC2124348309

Date: 10 Jan 2022

Page 2 of 6

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN21-243483.006	Black material

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 .

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>006</u>
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



Test Report

No. CANEC2124348309

Date: 10 Jan 2022

Page 3 of 6

Test Item(s)	Limit	Unit	MDL	006
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) 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.



Test Report

No. CANEC2124348309

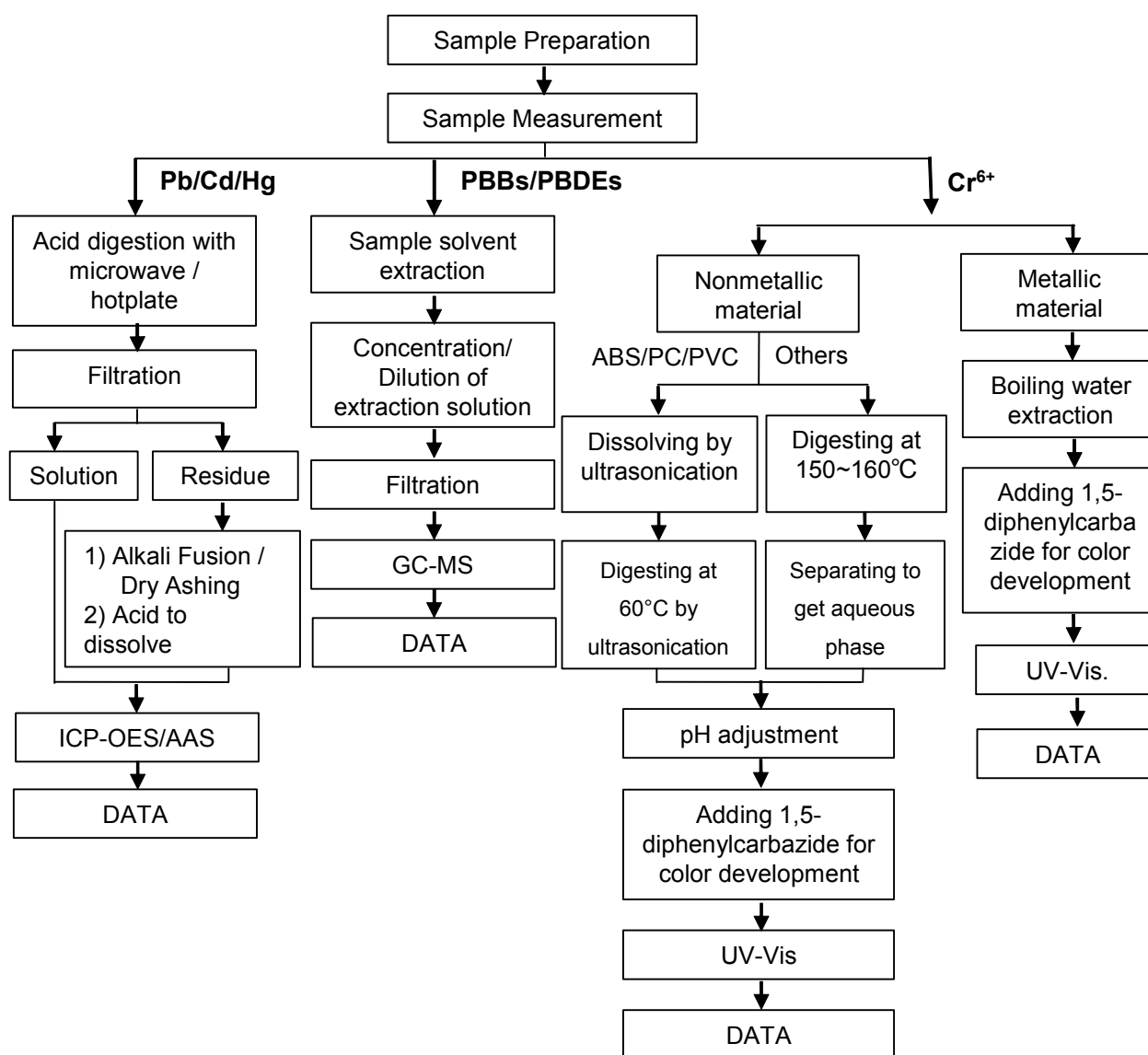
Date: 10 Jan 2022

Page 4 of 6

ATTACHMENTS

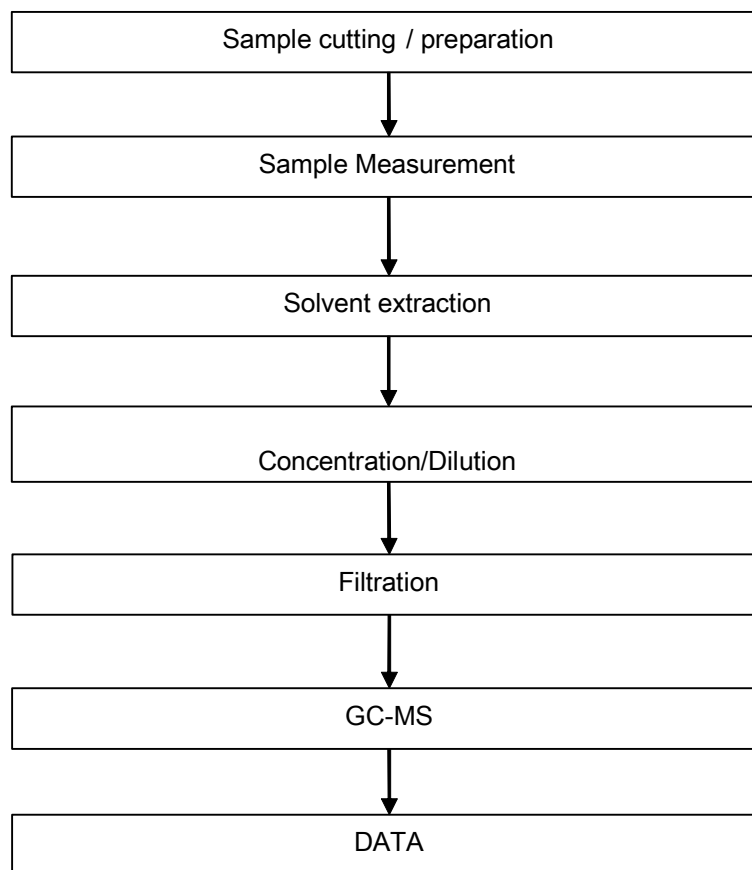
Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 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. CANEC2124348309

Date: 10 Jan 2022

Page 6 of 6

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***





Test Report

No.: ETR22105664

Date: 07-Feb-2022

Page: 1 of 7

DEXERIALS CORPORATION
1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

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

Sample Name : ADHESIVE
Style/Item No. : G4000
Lot No. : 1B04

Sample Receiving Date : 24-Jan-2022
Testing Period : 24-Jan-2022 to 07-Feb-2022

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample(s).
(2) As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.

Test Results : Please refer to following pages.

Troy Chang, Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



PIN CODE: B7923889

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Test Report

No.: ETR22105664

Date: 07-Feb-2022

Page: 2 of 7

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Test Part Description

No.1 : TRANSPARENT DOUBLE SIDED ADHESIVE (EXCLUDING THE RELEASE LINER)

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Lead (Pb) (CAS No.: 7439-92-1)		mg/kg	2	n.d.
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Hexavalent Chromium Cr(VI) (CAS No.: 18540-29-9)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.
Dibromobiphenyl		mg/kg	5	n.d.
Tribromobiphenyl		mg/kg	5	n.d.
Tetrabromobiphenyl		mg/kg	5	n.d.
Pentabromobiphenyl		mg/kg	5	n.d.
Hexabromobiphenyl		mg/kg	5	n.d.
Heptabromobiphenyl		mg/kg	5	n.d.
Octabromobiphenyl		mg/kg	5	n.d.
Nonabromobiphenyl		mg/kg	5	n.d.
Decabromobiphenyl		mg/kg	5	n.d.
Sum of PBBs		mg/kg	-	n.d.
Monobromodiphenyl ether	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.
Dibromodiphenyl ether		mg/kg	5	n.d.
Tribromodiphenyl ether		mg/kg	5	n.d.
Tetrabromodiphenyl ether		mg/kg	5	n.d.
Pentabromodiphenyl ether		mg/kg	5	n.d.
Hexabromodiphenyl ether		mg/kg	5	n.d.
Heptabromodiphenyl ether		mg/kg	5	n.d.
Octabromodiphenyl ether		mg/kg	5	n.d.
Nonabromodiphenyl ether		mg/kg	5	n.d.
Decabromodiphenyl ether		mg/kg	5	n.d.
Sum of PBDEs		mg/kg	-	n.d.

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Test Report

No.: ETR22105664

Date: 07-Feb-2022

Page: 3 of 7

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Test Item(s)	Method	Unit	MDL	Result
				No.1
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	195
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Iodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.

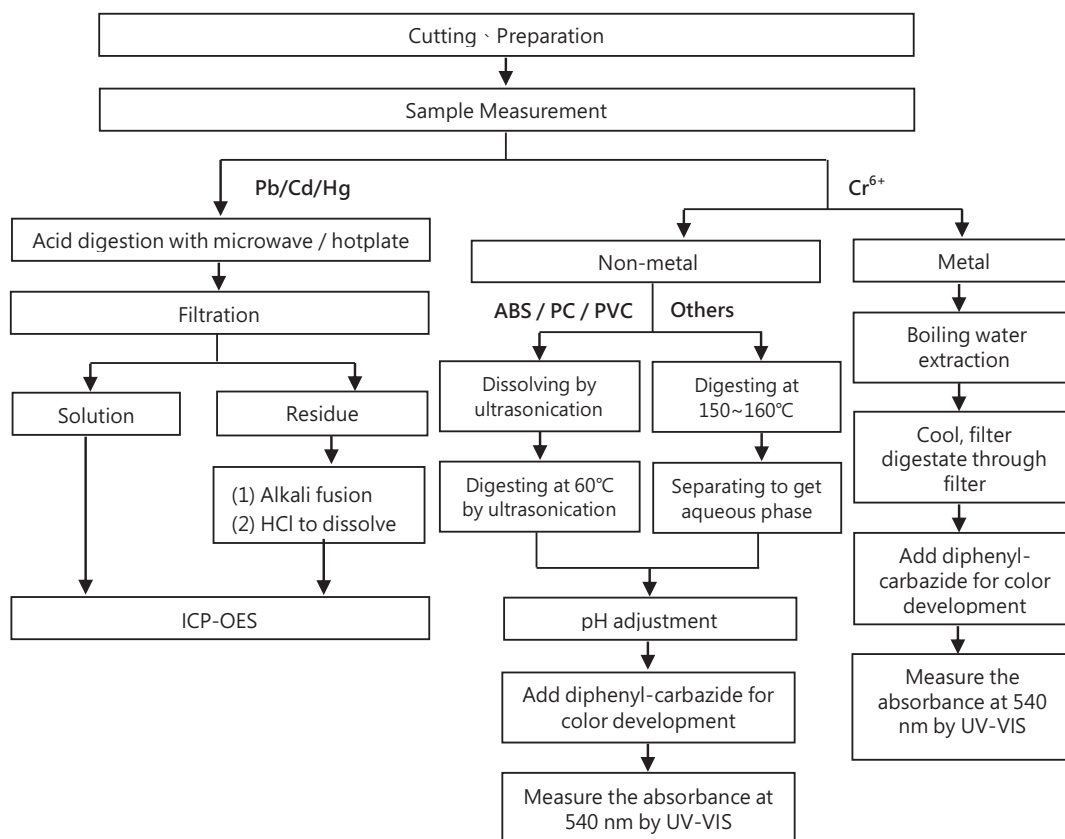
Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated

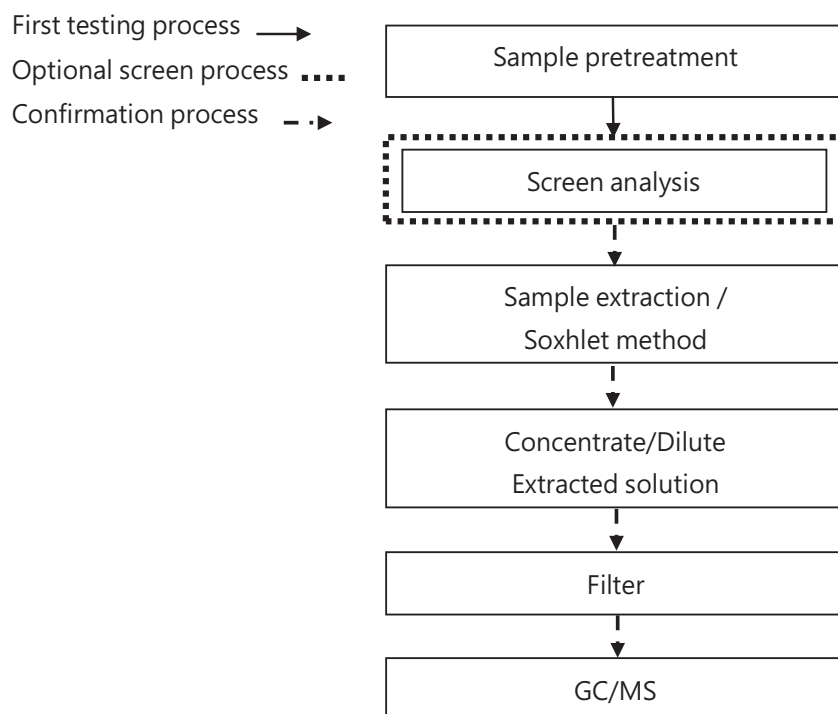
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Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr^{6+} test method excluded)



Analytical flow chart – PBBs / PBDEs



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Test Report

No.: ETR22105664

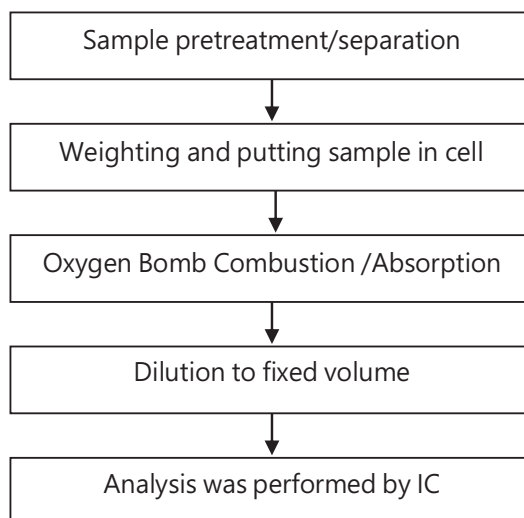
Date: 07-Feb-2022

Page: 6 of 7

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Analytical flow chart of Halogen



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Test Report

No.: ETR22105664

Date: 07-Feb-2022

Page: 7 of 7

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR22105664



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Test Report

No.: ETR22105665

Date: 07-Feb-2022

Page: 1 of 5

DEXERIALS CORPORATION
1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

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

Sample Name : ADHESIVE
Style/Item No. : G4000
Lot No. : 1B04

Sample Receiving Date : 24-Jan-2022
Testing Period : 24-Jan-2022 to 07-Feb-2022

Test Requested : (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine DBP, BBP, DEHP, DIBP contents in the submitted sample(s).
(2) Please refer to next pages for the other item(s).
Test Results : Please refer to following pages.

Troy Chang, Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



PIN CODE: 1887E689

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Test Report

No.: ETR22105665

Date: 07-Feb-2022

Page: 2 of 5

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Test Part Description

No.1 : TRANSPARENT DOUBLE SIDED ADHESIVE (EXCLUDING THE RELEASE LINER)

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Butyl benzyl phthalate (BBP) (CAS No.: 85-68-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Dibutyl phthalate (DBP) (CAS No.: 84-74-2)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.: 117-81-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Diisobutyl phthalate (DIBP) (CAS No.: 84-69-5)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Dimethyl phthalate (DMP) (CAS No.: 131-11-3)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Di-ethyl phthalate (DEP) (CAS No.: 84-66-2)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Antimony (Sb) (CAS No.: 7440-36-0)	With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.

Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)

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Test Report

No.: ETR22105665

Date: 07-Feb-2022

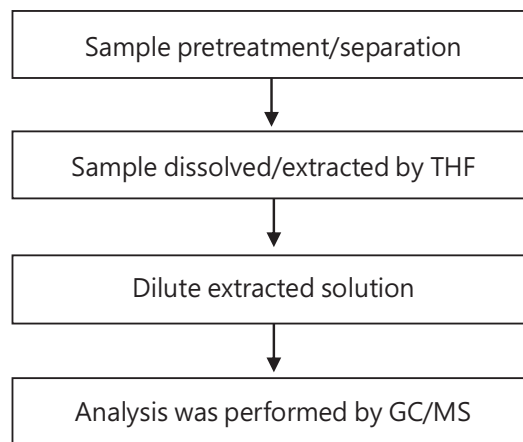
Page: 3 of 5

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



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Test Report

No.: ETR22105665

Date: 07-Feb-2022

Page: 4 of 5

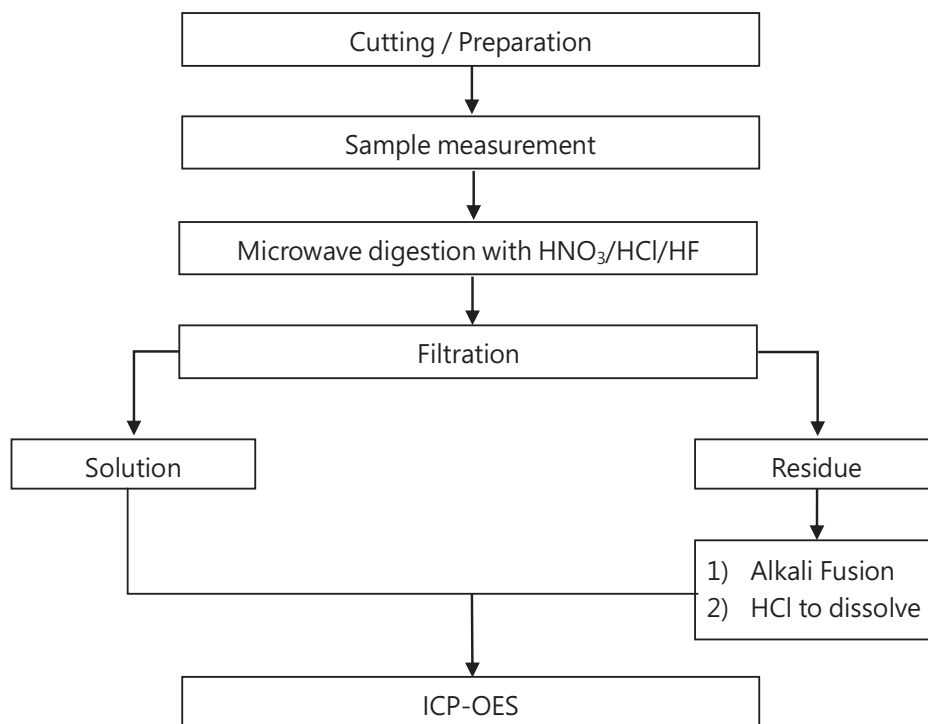
DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

Analytical flow chart of Elements (Heavy Metal included)

These samples were dissolved totally by pre-conditioning method according to below flow chart.

【Reference method : US EPA 3051A 、US EPA 3052】



* US EPA 3051A method does not add HF.

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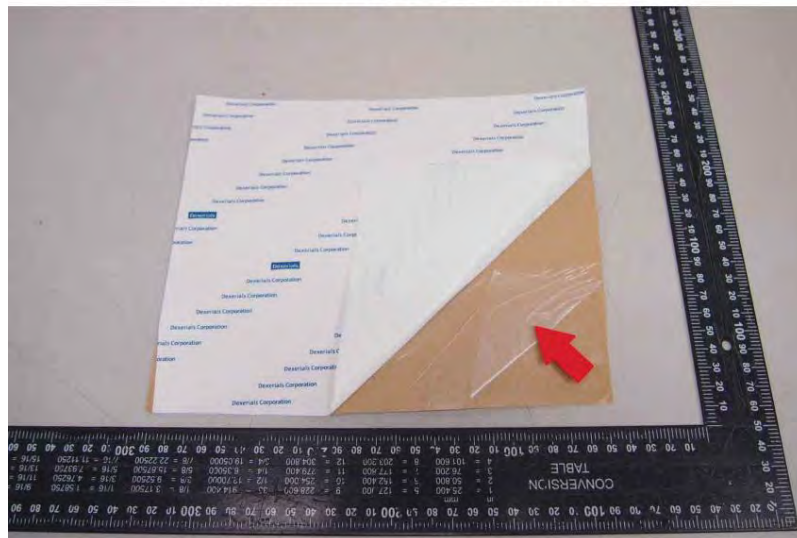
Page: 5 of 5

DEXERIALS CORPORATION

1724 SHIMOTSUBOYAMA, SHIMOTSUKE-SHI, TOCHIGI 323-0194, JAPAN

* The tested sample / part is marked by an arrow if it's shown on the photo. *

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RoHs 排外條款說明

RoHs Exclusive item Hazardous Substance

本公司保證，本產品均屬環保產品，皆符合 RoHs 法規要求，並適用於 RoHs 規定之排除條款。

We hereby confirm and assure that all parts and sub-materials delivered to your company with RoHs Standard and apply to RoHs Exclusive item.

RoHs 合金類排除條款如下：

RoHs Exclusive item:

合金種類 alloys item	鉛允許含量(ppm) Lead acceptance concentration
鋼材 steel	< 3,500ppm
鋁合金 aluminum alloys	< 4,000ppm
銅合金 copper alloys	< 40,000ppm
高鎔點錫料(有鉛焊錫) Lead in high melting temperature type solder	≥ 85,000 PPM

公司名稱：譚裕實業股份有限公司

Company name: WHA YU INDUSTRIAL CO., LTD

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Company address: No. 326, Sec. 2, Kung Tao 5 Road, Hsin Chu City, Taiwan

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負責人：林祺生 董事長

Sign by:

立約日期：2017.06.20

Date: 2017/06/20

