

承认书

Approval Sheet

客户(Customer): /

客户料号 (Cus . P/N): /

华联威料号 (HLW P/N): U323-1311-G67018

品名规格 (PronameSpec): USB 3.0AF180 度无卷边直脚

送样日期 (Delivery Date):2021/12/16

承认日期 (Acknowledge Date):2021/12/21

Approved No:	客	户									
Customer											
采 购 部	品 质 部	工程部	确认								
Purchasing Dept	QC Dept	Engineering Dept	Approved By								
深圳	市华联威电-	子科技有限公司									
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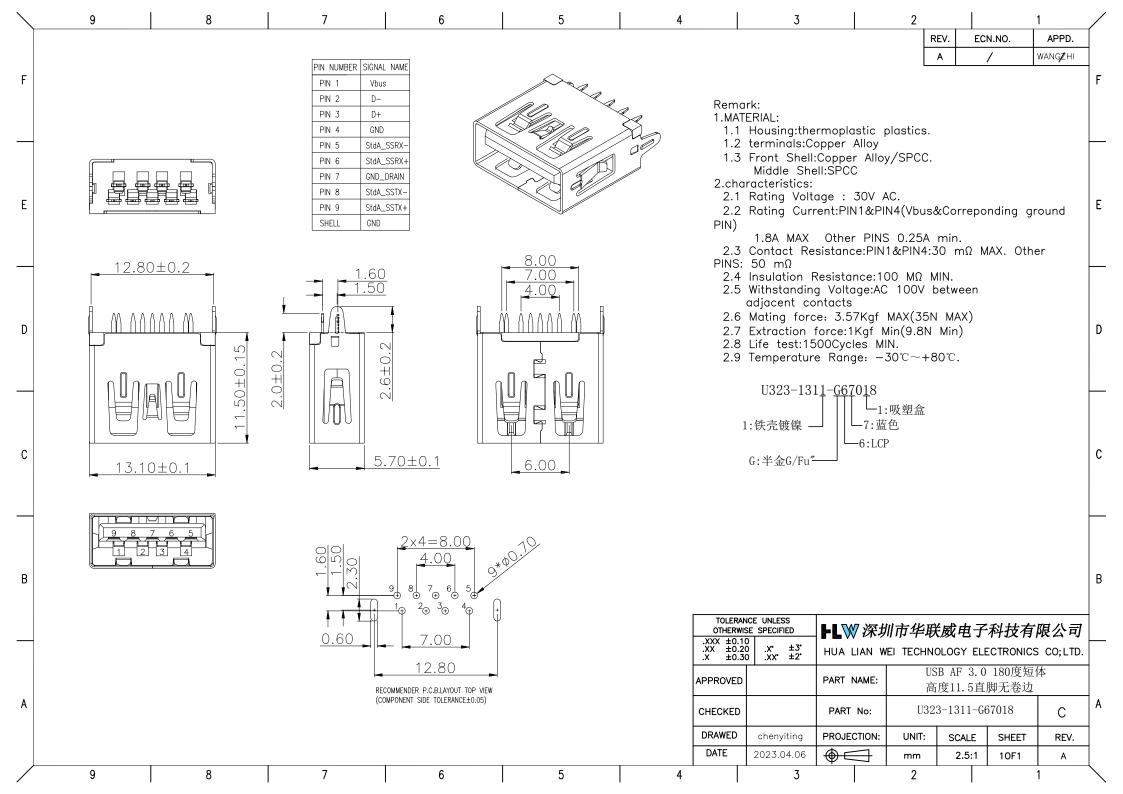


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SGS



FLWCONN®

深圳市华联威电子科技有限公司

HUA LIAN WEI TECHNOLOGY ELECTRONICS CO., LTD

USB3.0系列产品SPEC

版本版次: C 制定日期 20200707 适用范围 通用

- 1. Scope (范围)
- 1.1 Contents(内容)

This specification covers the performance, tests and quality requirements for the Electronics USB3.0 Connector. (此份产品规格适用于USB3.0连接器的产品功能,测试方法及质量要求)

- 2. Requirements (要求):
- 2.1 Rating(额定条件)
- A. Voltage rating(额定电压):30V AC
- B. Current rating(额定电流):1.5A
- C. Operation Temperature Range(操作温度范围):-25℃ to +85℃
- 3. Test Condition(测试条件):
- 3.1 Temperature range(温度范围):-+15℃ to +35℃
- 3.2 Humidity range (湿度范围):25% to 85%
- 4. Test Methods and Requirements:(测试方法及要求)

4.1 Examination of	product (产品外观)
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	<u> </u>	(
4.1.1	Examination of Product 产品外观	Visual 目视	No peeling off the plating deformation of the base or damage. 不得有电镀层剥落,塑料变形或破损
4.2. El	ectrical Performan	nce(电气性能)	
4.2.1	Contact Resistance 接触阻抗	(EIA-364-06B) Mated connectors, Contact: measure by dry circuit, 30 m Volts maximum,20 mA 配对的连接器, 端子:测试端子在回路中施加直流最大30mV	Initial Contact resistance Excluding conductor Resistance:30 mΩ max (Target design value)接触电阻初始值最大不能超过30 mΩ(目标设计值)

Dielectric	(EIA-364-20C)
	Unmated connectors, apply 100V AC (RMS.) for 1
Voltage	minute between adjacent terminals of ground.
(耐电压)	没有配对的连接器在相邻的端子或接地之间通上
	100V的交流电压1分钟

- 1. No Breakdown or flashover
- 2. Leakage current:0.5mA Max
- 1. 不能有损坏或跳火花
- 2. 漏电流<0.5mA

4.2.3 nsulation Resistance 绝缘阻抗

(EIA-364-21C)

Unmated connectors, apply 500V DC for 1 minute between adjacent terminals of ground. 没有配对的连接器在相邻的端子或接地之间通上

没有配对的连接器任相邻的编 500V的直流电压1分钟

20mA的电流再测端子的电阻值

100MΩ min(unmated) 没有配对需大于100 MΩ

4.3Mechanical Performance(机械性能)

L			· · · · · · · ·							
I	4.3.1	Insertion/Withdr	(EIA-364-13)	Maximum insertion force35N;						
		awal	Insertion and withdrawal speed:	插入力不超过35N(3.57kg);						
		Force	25mm/minute.	Withdrawal force 10N Min;						
		插入力/拔出力	插入和拔出的速度为25mm/分	拔出力最小10N (1.02kg);						
				EXTRACTION FORCE(AFTER TEST):8N						
				MIN						
l				拔出力(耐久测试后):8N最小						

4.3.2	Durability 寿命测试 Vibration	(EIA-364-09) Measure contact and shell resistance after the Following. Automatic cycling:1500 cycles at 100±5 Cycles per hour. 以每小时100±5插拔次数测试1500循环后测量端子和外壳的接触阻抗	Contact Resistance 接触阻抗 Contact: Change from initial Value: 30 milliohms maximum. 端子: 从初始值开始变化量小于30m Ω Maximum insertion force 35N 插入力不超过35N(3.57kg) Withdrawal force 8N min 拔出力量小8N (0.82kg) Appearance: No damage
	振动	Amplitude:1.52mm P-P or 147m/s^2 {15G} Sweep time: 50-2000-50Hz in 20 minutes. Duration: 12 times in each (total of 36 times) X, Y, Z, axes. Electrical load DC 100mA current shall be flowed during the test.(ANSI/EIA-364-28 Condition III) 在直流100毫安通电状态下测试,在X,Y,Z垂直3方向上,频率50-2000-50赫兹(加速度往复20分钟),全振幅1.52mm P-P或147 m/s^2 {15G},每轴12回计36回	外观: 无损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value:30mΩ Max. 端子: 从初始值开始变化量小于30m Ω 间断性: 不超过1微秒
4.3.4	Physical shock 冲击性	(EIA-364-27条件A) Pulse width: 11msec Waveform: Half-sine 490m/s²(50G)3 strokes in each X, Y, Z axes. (ANSI/EIA-364-27 condition A) 周期: 11msec 冲击波形: 正弦半波490m/s²(50G)3 循环在X, Y, Z 轴	Appearance: No damage 外观: 无损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max 端子: 从初始值开始变化量小于30m Ω Discontinuity: 1μ sec Max. 间断性,不超过1微秒
4.4 En	vironmental Perfo	rmance	
4.41	Thermal shock test 冷热冲击	EIA-364-32C条件1) 10 cycles of:10个循环, a)-55±3℃ for 30 minutes b) +85±3℃ for 30 minutes	Appearance: No Damage. 外观:没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max 端子:从初始值开始变化量小于30m
4.42	Solder ability 焊锡性	(EIA-364-52) To be sipped in the solder bath 245±5℃ Coverage for 3 seconds. 将焊锡脚浸在245±5℃的锡炉中<3秒	The inspected area of each lead must have 90% solder coverage minimum 表面粘锡面积不少于90%
4.43	Humidity 恒温恒湿	(EIA-364-31B) (A) Mate connectors together and perform the test as follows配对的连接器测试条件 Temperature: +25℃ to +85℃(温度: +25℃到+85℃) Relative Humidity: 90% to 95%(相对湿度: 90%到95%) Duration:4 cycles(96 hours) (持续时间: 4个循环共96小时) Upon completion of the test, specimens shall be conditioned ambient room conditions for 24 hours, after which the specified measurements shall be performed.试验完成后,样品放置于室温条件中24小时后再进行测试	Appearance: No Damage 外观,没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max 端子: 从初始值开始变化量小于30m Ω

	Salt Spray 盐水喷雾	EIA-364-26B) Temperature: 35±2℃ 温度: 35±2℃ Concentration for salt: 5% 盐水浓度: 5% (1)Duration: 24H 持续时间: 24小时 Condition(条件): Contact plated gold more than 15u″ (include 15 u″), and the material of shell for copper alloy, or stainless.端子镀金厚度大于等于15 u″且壳体材质是铜合金或是不锈钢(2) Duration: 12H 持续时间: 12小时 Condition(条件): Contact plated gold less than 15 u″, and/or the aterial of shell for steel 端子镀金厚度小于15u″且/或壳体材质是铁材	Ω
4.45	Cold resistance (Unmated) 冷阻抗	(EIA-364-17B) Unmated connectors and expose to -25±3℃ for 168 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 没配对的连接器放置于-25±3℃温度中168小时,当完成实验后,样品放置一般环境中1到2小时后,在进行测试	
4.46	Heat resistance (Unmated) 热阻抗	(EIA-364-17B) Mated connectors and expose to 85±2℃ for 168 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 配对的连接器放置于85±2℃温度中168小时,当完成实验后,样品放置一般环境中1到2小时后,在进行测试	Appearance: No Damage. 外观:没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max Shell Part: Change from initial Value 50mΩ Max 端子:从初始值开始变化量小于30m Ω 外壳:从初始值开始变化量小于50m
4.47	Thermal Aging 高温老化	(EIA-364-31B,Condition 4, Method A)Unmated connectors and expose to +85±2℃ for 168 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 没配对的连接器放置于+85±2℃温度中168小时,当完成实验后,样品放置一般环境中1到2小时后,在进行测试	Appearance: No Damage. 外观:没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max Shell Part: Change from initial Value 50mΩ Max 端子:从初始值开始变化量小于30m Ω 外壳:从初始值开始变化量小于50m
4.4.8	Resistance to Soldering Heat	for wave soldering: mil-std-202f,method 210 A,test condition B 波峰焊: mil-std-202f, method 210 A,试验条件B Pre-heat:80℃,60 Seconds 预热:80℃,60秒 Temperature:260±5℃ 温度:260±5℃ Immersion duration:10±1 sec. 浸泡时间:10±1秒	No physical damage shall occur. 不可有损坏

for manual soldering:手动焊接: mil-std-202f,method 210 A,test condition A Pre-heat : No预热:没有 Temperature : 350 ± 10 ℃温度:350±10℃ Immersion duration :3.5±0.5 sec.浸泡时间:3.5±0.5 for 用-10s Prε 260℃ 预 降温速度 4℃/s 升温速度 4℃/s Ter 220°C lmı 180°C 100s 升温速度 4℃/s 温度曲线以本体作 为测试点 时间;

Note 1: Shall meet visual requirements, show no physical damage, and meet requirement of additional tests as specified in the test sequence in Figures 2

说明1: 测试要求不能有物理损坏,测试依据表格二的顺序进行

3.Product Qualification And Requalification Test:产品测试顺序表 Figure 2

Test or Examination							Tes	t Group)							
	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N		
	=	-	-	-	Test	Seque	nce	-	-	-	-		-	-		
4.1.1.Examination of Product 产品外观	1,9	1,3	1,5	1	1,5	1,5	1,5	1,3	1,5	1,5	1,5	1,5	1,5	1		
4.2.1.Contact Resistance 接触阻抗	2,8		2,4		2,4	2,4	2,4		2,4	2,4	2,4	2,4	2,4			
4.2.2.Dielectric Withstanding Voltage	3,7															
4.2.3.Insulation Resistance 绝缘阻抗	4,6															
4.3.1.Insertion/Withdra wal force 插拔力		2														
4.3.2.Durability 寿命测 试			3													
4.3.3.Vibration 振动性					3											
4.3.4.Physical shock 冲 击性						3										
4.4.1.Thermal shock test 冷热冲击							3									
4.4.2.Solderability 焊锡 性								2								

4.4.3.Humidity 恒温恒 湿	5								3					
4.4.4.Salt Spray 盐水喷雾										3				
4.4.5.Cold resistance 冷 阻抗											3			
4.4.6.Heat resistance 热阻抗												3		
4.4.7.Thermal Aging 高 温老化													3	
4.4.8.IR-reflow 回流焊 测试														2
NO. of Test samples(Min.) 测试样	5	5	5	5	5	5	5	5	5	5	5	5	5	5

NOTE 2: (a) Numbers indicate sequence in which tests are performed.

(b) Discontinuities shall not take place in this test group, during tests.

说明 2: (a)测试依照矩阵要求数量进行。

(b)在测试中,群组测试不能间断

核准: 唐竹君

制作人: 覃裕华



深圳市华联威电子科技有限公司 SHENZHENHUALIANWEIELECTRONICS CO., LTD.

測試報告

TEST REPORT

	産品名稱 Part Name	USB 3.0AF180 度无卷边 直脚	測試日期 Date of Testing	2021.12.16 2021.12.21		報告編號 Rep ort NO		MD20211223-08				
	産品型號 Part Name	U323-1311-G67018	樣品數量 Quantity	5PCS		測試環境 ring Envir		濕度 Te	emp:18~2 R.H.:499			
_	. 電性測試 ELECT	RICAL TEST										
						測試記	錄 Testin	ıg Result		判定 Judge		
序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	1	2	3	4	5	Pass	Fail	
1	Contact resis tance	Test current:100mA max	DIGITAL MICROOHMMETER	30m Ω Max	15.85 m Ω	15.15 m Ω	14.27 m Ω	15.61 m Ω	15.20 m Ω	Р		
2	In sula tion resis tance	Test voltage:500VAC Operation stated:1min	ULTRA HIGH RESISTANCE METER	100M Ω Min	Pass	Pass	Pass	Pass	Pass	Р		
3	Dielec trie withstand voltage	Test voltage:100VAC Cut-off current:0.5mA Operation stated:1 min	BREAKDOWN TESTER	No discharge or flashover occur	Pass	Pass	Pass	Pass	Pass	Р		
二. 機	械特性測試 MEC	HANICAL TEST										
序號	油砂油目	測試項目 測試條件 測試設備 Testing Con di tions Testing Equipmen	測計設備	規格		測試記	錄 Testin	g Result	判定 Judge			
NO.	が成立で見口 Testing Item		アパロシロス (角 Testing Equipment	SPEC		2	3	4	5	Pass	Fail	
1	Durab ilitytest	Rat e:200cycles/hour Tot al: 1500cycles	LIFE TESTER FOR CONNECTOR	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		
2	Mating Force	35 Newtons maximum at a maximum rare of 12.5mm(0.492") per mi nute	Insertion force testing machine	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		
3	Un-Mating Force	10 Newtons minimum at a maximum rare of 12.5mm(0.492") per mi nute	Insertion force testing machine	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		
三. 環	I境特性測試 ENVI	RONMENTAL TEST										
字號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					定 Ige		
	3	January Sandalasia				2	3	4	5	Pass	Fail	
1	Humidi ty- Tempera ture cycle	Tempera ture:40±2°C Humidity: 90—95% Dura tion:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		
2	Heattest	Temperature: 70±2°C Dura tion:168H	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		
3	Cold test	Temperature: -25±3°C Dura ti on:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	Р		

4	Tempera ture cycling test	Temperature: 7025°C CONTROLLED TEMP. & HUMIDTY CHAMBER		No physical damage	Pass	Pass	Pass	Pass	Pass	Р				
四. 物	四. 物理測試 PHYSICAL TEST													
序號	測試項目	測試項目 測試條件		規格		判 Juc								
NO.	Testing Item	Testing Conditions	Testing Equipment	SPEC		2	3	4	5	Pass	Fail			
1	Sa It spray test	Temperature: 35±2°C Concentrat io n: 5±1 % Dura tion:12H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	Р				
2	Resistance to soldering heat test	Temperature: 260±5C Dura tio n:10±1sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	Р				
3	Solder ability test	Temperature: 265±5°C Duration:3 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area 295%	Pass	Pass	Pass	Pass	Pass	Р				
	判定 Result	■合格 (ACCE	EPT)		□不	合格 (F	REJEC	CT)						

核准(Approver): 欠必锋

測試(Tester): 但芬

FLWCONN® 深圳市华联威电子科技有限公司 檢驗報告

■首件檢験	■首件檢驗 □入庫檢驗 □			字退檢	驗口	退料模	魚驗 [1其他		2021 [±]	F 12 月	21日 版	i次:A1
料號	U323-1311-G67	018	制令国	單號	1	1	送檢	單位		[程部	首件	製作者	裝配
品名	USB 3.0AF180度无	卷边直	客戶個	半蛙	,	/	批	量		1		僉時間	1
ПП477	脚		台)	73111			數	量	Ę	PCS	確語	忍時間	1
	抽樣標準			單均	Z []雙次		抽样	数	AQL	CRI:0	MAJ:0.40	MIN:0.65
N	MIL-STD-105E(II)		1	常	□加膚	曼	減量	(5PC	CS)	ACC/REJ	0	/	/
不良数	•	CRI (/)	MAJ	(/)	MIN	1 (/)	不良	具率(%)	/
NO.	檢驗項目	檢測		檢	驗記	錄		品管料	判定	CRI	MAJ	MIN	備注
NO.	單位:MM/G	儀器	1	2	3	4	5	AC	RE	CKI	IVIAJ	IVIIIN	_
尺	12.80±0.20	D	12.78	12.77	12.81	12.82	12.83	\checkmark					
	11.50±0.15	D	11.55	11.50	11.53	11.51	11.52	√					
寸	13.10±0.10	D	13.09	13.08	13.11	13.13	13.12	√					
測	5.70±0.10	D	5.68	5.69	5.71	5.72	5.73	√					
1//1	2.00±0.20	D	2.01	2.03	2.05	2.07	2.09	√					
量	2.60±0.20	D	2.61	2.59	2.62	2.58	2.61	√					
	1.50±0.20	D	1.48	1.45	1.54	1.52	1.53	√					
	1.60±0.20	D	1.56	1.65	1.64	1.58	1.62	√					
	6.00±0.20	D	6.02	6.01	6.03	5.99	5.98	√					
	8.00±0.20	D	8.03	8.05	8.07	7.98	7.86	\checkmark					
	7.00±0.20	D	7.05	6.99	6.96	7.04	7.02	\checkmark					
	4.00±0.20	D	4.03	4.05	3.98	3.96	3.99	√					
檢驗依據:	<<工程圖紙>>		檢驗規範	—— 範>>	☐<<7	承認書	>> [1樣品		其它			
檢測儀器:	A游標卡尺 B千分尺	C厚薄	儀 D投景	杉鏡 E	放大鏡	F顯微	鏡 G鎖	易爐 Hi	番拔 た	力器 I間位	之尺 J	其它	
品保判定:			合格Ac	cept	□退	貨Reje	ect	□特兒	Ŕ₩a	aive []挑選	Sort	

核准: 欠必锋 审核: 刘联英 检验员: 但芬

FLWCONN® 深圳市华联威电子科技有限公司

电镀报告表

品名:USB 3.0AF180度无卷边直脚(外壳) 版次:A.0 电镀规格:Cu:30u", Ni:30u" 日期:2021/12/16 页次:1/1

厂商:同华

测试设备:CMI X-射线膜厚测试仪

1、表层电镀测试(Ni)

数据	测试标准	实测值	判定	测试日期	测试时间
1	30u"min	30. 12u"	OK	2021/12/16	11:35:05
2	30u″min	31. 04u"	OK	2021/12/16	11:36:07
3	30u″min	33. 45u"	OK	2021/12/16	11:37:09
4	30u″min	35. 01u"	OK	2021/12/16	11:38:11

2、底层电镀测试(Cu)

数据	测试标准	实测值	判定	测试日期	测试时间
1	30u"min	30. 22u"	OK	2021/12/16	11:35:05
2	30u″min	30. 04u"	OK	2021/12/16	11:36:07
3	30u″min	30. 08u″	OK	2021/12/16	11:37:09
4	30u″min	30. 13u"	OK	2021/12/16	11:38:11

核准: 欠必锋

审核: 刘联英

检验员: 但芬

FLWCOND® 深圳市华联威电子科技有限公司

电镀报告表

品名:USB 3.0AF180度无卷边直脚(端子) 电镀规格:Ni40u", Sn40u"MIN , Au G/Fu" 日期:2021/12/17 页次:1/1

厂商:同华

测试设备:CMI X-射线膜厚测试仪

1、底层电镀测试(Ni)

数据	测试标准	实测值	判定	测试日期	测试时间
1	40u"MIN	45. 3u"	OK	2021/12/17	13:50:12
2	40u"MIN	48. 5u"	OK	2021/12/17	13:50:14
3	40u"MIN	44. 2u"	OK	2021/12/17	13:50:16
4	40u"MIN	45. 6u"	OK	2021/12/17	13:50:18

2、表层电镀测试(Sn)

数据	测试标准	实测值	判定	测试日期	测试时间
1	40u"MIN	43. 3u"	OK	2021/12/17	14:10:36
2	40u"MIN	42. 4u"	OK	2021/12/17	14:10:38
3	40u"MIN	46. 7u"	OK	2021/12/17	14:10:40
4	40u"MIN	43. 1u"	OK	2021/12/17	14:10:42

3、表层电镀测试(Au)

数据	测试标准	实测值	判定	测试日期	测试时间
1	0.5u"MIN	0.56u"	OK	2021/12/17	14:18:20
2	0.5u"MIN	0.58u"	OK	2021/12/17	14:18:22
3	0.5u"MIN	0.59u"	OK	2021/12/17	14:18:24
4	0.5u"MIN	0. 57u"	OK	2021/12/17	14:18:26

核准: 欠必锋 审核: 刘联英 检验员: 但芬



深圳市华联威电子科技有限公司

盐水喷雾实验报告

试验方法	盐水喷雾腐蚀试验法	参考资料	MIL-STD-1216
METHOD	NEUTRL SALT SPRAY CORROSION TEST	REF	MIL 01D 1210
客户	/	试验起始日期	2021年12月20日 08:00 时起
谷厂	/	DATE	2021年12月21日 20:00 时止
样品名称	USB 3.0AF180度无卷边直脚	试验数量	5PCS
P/N	U323-1311-G67018		

试验条件 (TEST CONDDITION)

- 1、盐水溶解(SALT SOLUTION:浓度50±10g/L,PH值6.5-7.2.
- 2、试验室温度 (TEMP. IT THE SPRAY DHAMBR):35±1℃.
- 3、盐水桶温度 (TEMP. OF SALE SOL'N TANK): 35±1℃.
- 4、 压力桶温度 (TEMP.OF SAR SUPPLIERY): 47±1℃.
- 5、 试验室相对湿度(R.H IN THE CHAMBER) 85%.
- 6、 压缩空气压力(COMPRESSED AIR PRESSURE): 1.00±0.01Kg/cm².
- 7、 样品放置位置(SPECIMEN SUPPORTED ANGLE): 尼龙绳吊挂70°-90°.
- 8、 喷雾收集量(COLLECT RATE OF SALT SOL'N)1-2mL/(8 cm²hr).
- 9、盐雾测试时间: 12小时 (H)

判定方法(ADFUSGD METHOD)

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

CCIMCII at 20	Amagnitication no blac of green corrobion pr	dadets are acceptable,
样品序号	试验后现象	判定
件前分写	PHENOMENON AFTER TEST	COMMENT
1	无蓝、绿色腐蚀物之现象	OK
2	无蓝、绿色腐蚀物之现象	OK
3	无蓝、绿色腐蚀物之现象	OK
4	无蓝、绿色腐蚀物之现象	OK
5	无蓝、绿色腐蚀物之现象	OK

核准:欠必锋 审核:刘联英 试验员:但芬

东莞市煜春塑料科技有限公司

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÷ + W	含量	备》
主成份	LCP E130i 蓝色	H (
LCP 树脂	69%±5%	
玻纤	30%±5%	
抗氧剂	₩ 0.3% ===	
润滑剂	0.3%	
蓝色粉	0. 4%	

佛山市顺德区天硕贸易有限公司 Foshan Shunde Tianshuo Trade Company Limited

2021-10-19 日期:

编号: FB2110136

		一種度 (HV)	143	141		
1 1 20	ROPERTIES	杯祭 (mm)				
	力学性能MECHANICAL PROPERTIES	屈服强度Y.S Mpa	259	256		胡万锒
	—————— 学性能MECI	延伸奉旺 (%)	59	30		制表人:
SPCC-SD 合格	7	抗拉强度T.S Mpa	361	362		
	P 00	AI %				
秦 克 """	ITION	ς %	0.24	0.22		紐
产品名称: 检验情况:	化学成份CHEMICAL COMPOSITION	- %	0.22	0.21		谢和钢
A 54	MICAL (Si %	0.07	0.07		· · · · · · · · · · · · · · · · · · ·
	\$份CHE	Mn %	0.17	0.16		
	化学员	U %	0.031	0.032		
G 3141		ъ %	66	66		
ION: JIS	净重 WEIGHT	KG	7835	0692		
收货单位PURCHASER: 检验标准SPECIFICATION: JIS G 3141	材质牌号 SYMBOL		SPCC-SD	SPCC-SD		
收货单位F 检验标准S	钢卷号 COIL. NO		DL45657	DL45658		
	产品规格 钢卷号 SPECIFICATION COIL. NO	WW	0.30x1250	0.30x1250		质量控制中心:

斯和钢 甲核:



钜鼎銅材廠檢驗報告單

公司名稱 Customer	22 10	钜鼎銅材廠檢驗報告單			重量 Weight(kg)	1078		出貨日期 Date		2021/11/23	
品名	N 15 15 15 15 15 15 15 15 15 15 15 15 15	標准			尺寸		狀態		銅卷編號		
Article		Stand	ard No		Dime	ension	Tei	nper	Co	il No	
C2680	v	JISH31	00:2017		0.18	*400	E	EH	1021	-C-08	
				化學	式分Chemical Con	mpositions(%)					
元素 Element	Cu %	Zn%	Pb%	Fe%	\	\		\	化學成分	雜質	
規範 Spec	64.0-68.0	餘量	<0.05	<0.05	\	1	\	\	合格	合格	
實測 Actual	64.32	餘量	0.0036	0.0136	\	1	١	\	合格	合格	
				機械性	質子Mechanical	Properties					
項目	結晶粒度	硬度	抗拉強度	伸長度	導電率	彎曲試驗	表面	粗度	彎	曲度	
Item	Grain Size	Hardness	TensionStrength	Elongation	Electrical Conduc	Bending Test	Surface F	Roughness		nber	
	Mm	Hv	Mpa	%	%IACS	180	Ra(u m)	m	m\n	
規範MAX Spec	\	170-190	490-610	\	\	\		\		1.	
實測 Actual	\	178	574	5	\	\		١		\ - ·	

品質部

聯系電話:0755-28111847 傳真: 0755-28110077 送货专用量



Test Report No. CANEC2222380709 Date: 26 Oct 2022 Page 1 of 6

SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD Client Name:

Client Address: 101, 201, PLANT 1, NO.307, GUANLAN GUIHUA ROAD, GUIXIANG COMMUNITY, GUANLAN

SUB-DISTRICT, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

Sample Name: LCP plastic blue color

LCP Plastic Model No.:

Client Ref. Info.: Used for USB series, HDMI series, RJ series, 1394 series, MICRO series, MINI

series, DISPLAYPORT series, VGA series, DVI series, TYPE-C series, JACK

series

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

SGS Job No.: CP22-057100 - GZ

Date of Sample Received: 20 Oct 2022

Testing Period: 20 Oct 2022 - 26 Oct 2022

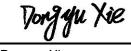
Test Requested: Selected test(s) as requested by the client.

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

Result Summary:

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

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



Dongyu Xie Approved Signatory





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Test Report No. CANEC2222380709 Date: 26 Oct 2022 Page 2 of 6

Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description SN1 CAN22-223807.009 Blue plastic

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

	<u>Unit</u>	<u>MDL</u>	<u>009</u>
100	mg/kg	2	ND
1000	mg/kg	2	5
1000	mg/kg	2	ND
1000	mg/kg	8	ND
1000	mg/kg	-	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
1000	mg/kg	-	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
-	mg/kg	5	ND
	1000 1000 1000 	100 mg/kg 1000 mg/kg 1000 mg/kg 1000 mg/kg 1000 mg/kg 1000 mg/kg - mg/kg	100 mg/kg 2 1000 mg/kg 2 1000 mg/kg 8 1000 mg/kg - - mg/kg 5 1000 mg/kg - - mg/kg 5 - </td



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Test Report	No. CANEC22223807	09	Date: 2	6 Oct 2022	Page 3 of 6
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>009</u>	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

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



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No. CANEC2222380709

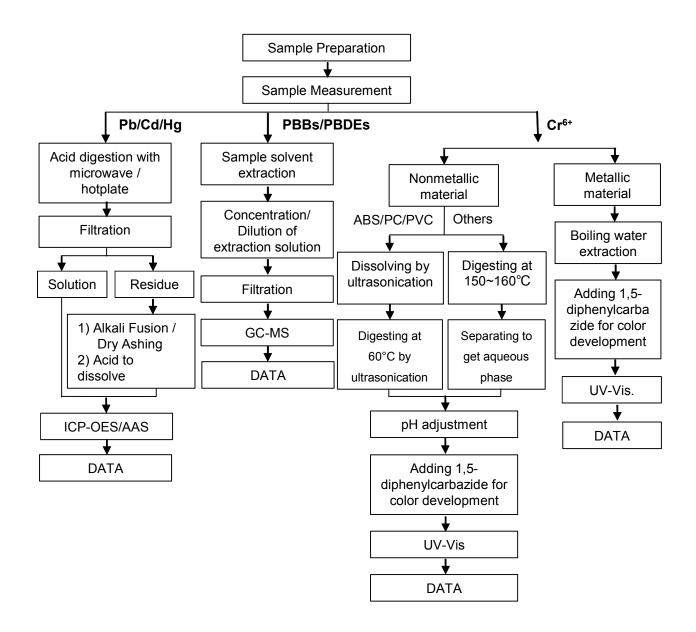
Date: 26 Oct 2022

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ATTACHMENTS

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

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





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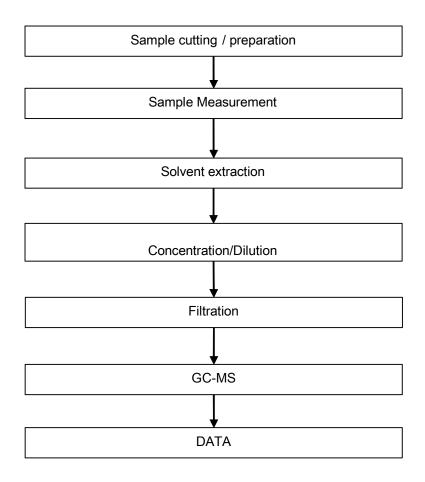
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Date: 26 Oct 2022

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ATTACHMENTS

Phthalates Testing Flow Chart





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No. CANEC2222380709

Page 6 of 6

Date: 26 Oct 2022

Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report No. CANEC2222380704 Date: 26 Oct 2022 Page 1 of 4

Client Name: SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

Client Address: 101, 201, PLANT 1, NO.307, GUANLAN GUIHUA ROAD, GUIXIANG COMMUNITY, GUANLAN

SUB-DISTRICT, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

Sample Name : SPCC hardware

Model No.: SPCC

Client Ref. Info.: Used for USB series, HDMI series, RJ series, 1394 series, MICRO series, MINI

series, DISPLAYPORT series, VGA series, DVI series, TYPE-C series, JACK

series

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

SGS Job No. : CP22-057100 - GZ

Date of Sample Received: 20 Oct 2022

Testing Period: 20 Oct 2022 - 26 Oct 2022

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

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

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

Result Summary:

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

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



Dongyu Xie Approved Signatory





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Test Report No. CANEC2222380704 Date: 26 Oct 2022 Page 2 of 4

Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description

> SN1 CAN22-223807.004 Silver-grey/brassy metal

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
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/cm²	0.10	ND

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Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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



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No. CANEC2222380704

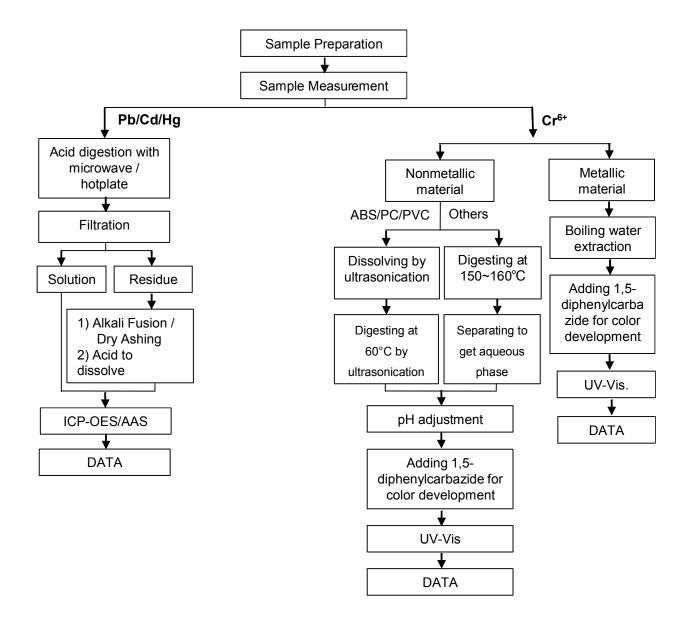
Date: 26 Oct 2022

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ATTACHMENTS

Pb/Cd/Hg/Cr6+ Testing Flow Chart

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





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Date: 26 Oct 2022 Page 4 of 4

Sample photo:



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Test Report No. CANEC2222380701 Date: 26 Oct 2022 Page 1 of 4

Client Name: SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

Client Address: 101, 201, PLANT 1, NO.307, GUANLAN GUIHUA ROAD, GUIXIANG COMMUNITY, GUANLAN

SUB-DISTRICT, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

Sample Name: C2680 Terminal

Model No.: C2680 terminal after plating

Client Ref. Info.: Used for USB series, HDMI series, RJ series, 1394 series, MICRO series, MINI

series, DISPLAYPORT series, VGA series, DVI series, TYPE-C series, JACK

series

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

SGS Job No. : CP22-057100 - GZ

Date of Sample Received: 20 Oct 2022

Testing Period: 20 Oct 2022 - 26 Oct 2022

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

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

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

Result Summary:

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

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



Dongyu Xie

Approved Signatory



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Test Report No. CANEC2222380701 Date: 26 Oct 2022 Page 2 of 4

Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description

SN1 CAN22-223807.001 Silver-grey/brassy metal

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	3
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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



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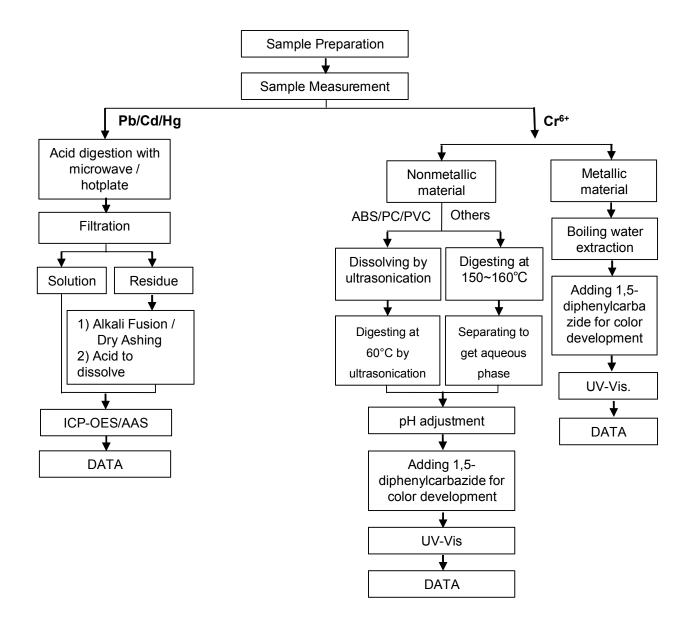
Date: 26 Oct 2022

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ATTACHMENTS

Pb/Cd/Hg/Cr6+ Testing Flow Chart

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





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No. CANEC2222380701

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Date: 26 Oct 2022

Sample photo:



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Test Report No. CANEC2218227002 Date: 30 Aug 2022 Page 1 of 8

Client Name: SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

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

Sample Name : Gold (AU)

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

SGS Job No. : CP22-047169 - SZ

Date of Sample Received : 25 Aug 2022

Testing Period : 25 Aug 2022 - 30 Aug 2022

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

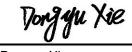
Test Method(s): Please refer to next page(s).

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

Result Summary:

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

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



Dongyu Xie Approved Signatory





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No. CANEC2218227002

Date: 30 Aug 2022

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Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description SN1 CAN22-182270.002 Gold plated metal

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	50
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. CANEC22182270	02	Date: 3	0 Aug 2022	Page 3 of 8
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

Test Item(s)	CAS NO.	<u>Unit</u>	MDL	002
•	CAO NO.	Offic	IVIDE	002
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido) -ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes:



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No. CANEC2218227002 Date: 30 Aug 2022 Page 4 of 8

(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(C $_2$ H $_5$) $_4$ (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)

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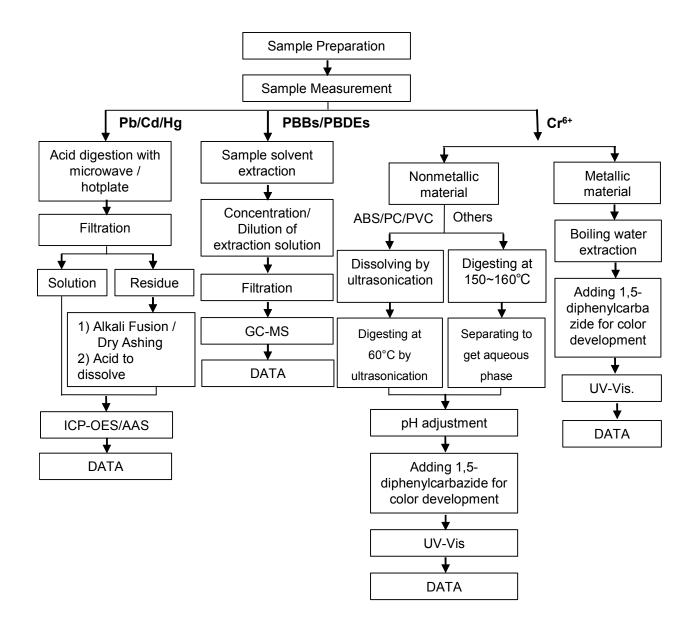
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ATTACHMENTS

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

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





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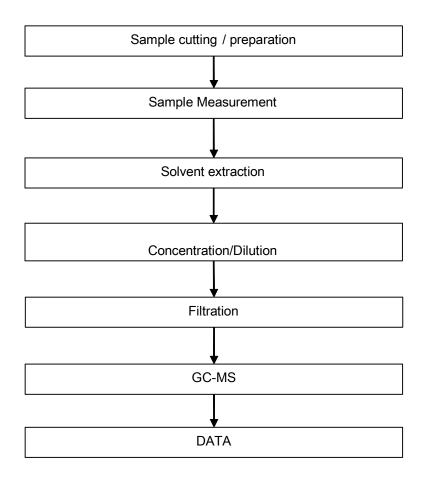


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Date: 30 Aug 2022 Page 6 of 8

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Phthalates Testing Flow Chart





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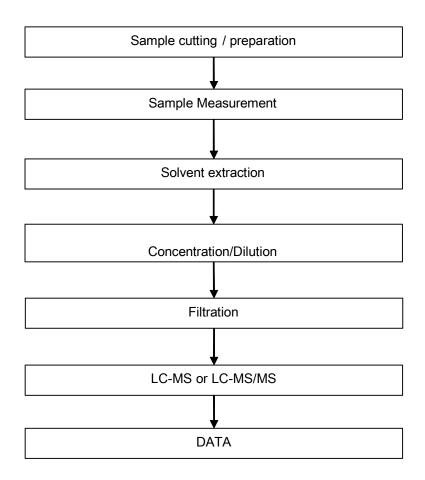
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PFOA / PFOS Testing Flow Chart





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No. CANEC2218227002

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Date: 30 Aug 2022

Sample photo:



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Test Report No. CANEC2218227001 Date: 30 Aug 2022 Page 1 of 8

Client Name: SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD

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

Sample Name: Nickel(Ni)

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

SGS Job No. : CP22-047169 - SZ

Date of Sample Received: 25 Aug 2022

Testing Period : 25 Aug 2022 - 30 Aug 2022

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

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

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

Result Summary:

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

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



Dongyu Xie Approved Signatory





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Test Report No. CANEC2218227001 Date: 30 Aug 2022 Page 2 of 8

Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description

> SN1 CAN22-182270.001 Silver-gray plated metal

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	49
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. CANEC22182270	01	Date: 3	0 Aug 2022	Page 3 of 8
Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido) -ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes:



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No. CANEC2218227001 Date: 30 Aug 2022 Page 4 of 8

(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(C_2H_5)₄ (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)

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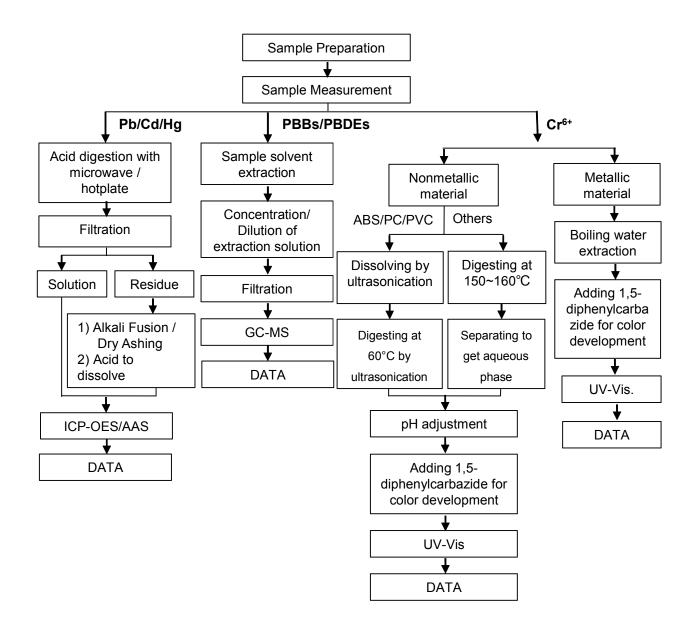
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Pb/Cd/Hg/Cr6+/PBBs/PBDEs Testing Flow Chart

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





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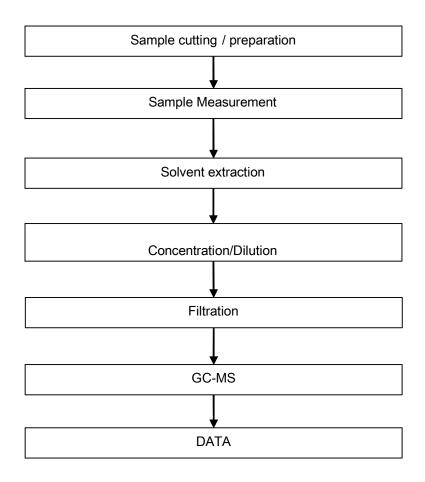
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Date: 30 Aug 2022

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Phthalates Testing Flow Chart





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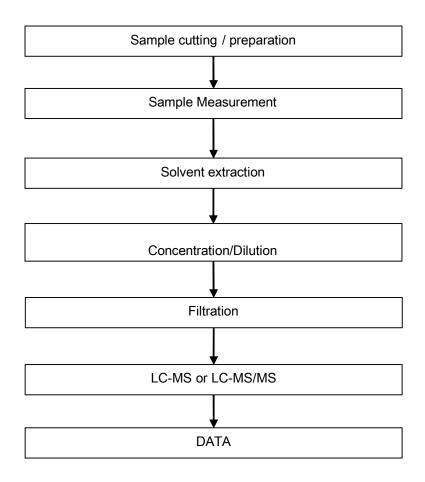
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PFOA / PFOS Testing Flow Chart





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Date: 30 Aug 2022

Sample photo:



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Test Report Date: 30 Aug 2022 No. CANEC2218227003 Page 1 of 8

SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD Client Name:

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

Sample Name: Bright Tin(SN)

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

SGS Job No.: CP22-047169 - SZ

Date of Sample Received: 25 Aug 2022

Testing Period: 25 Aug 2022 - 30 Aug 2022

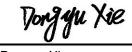
Test Requested: Selected test(s) as requested by the client.

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

Result Summary:

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

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



Dongyu Xie Approved Signatory





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Test Report No. CANEC2218227003 Date: 30 Aug 2022 Page 2 of 8

Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID Description

> SN1 CAN22-182270.003 Silver-gray plated metal

Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	44
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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<u>Limit</u>	<u>Unit</u>	MDL	<u>003</u>	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
1000	mg/kg	50	ND	
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1000	mg/kg	50	ND	
1000	mg/kg	50	ND	
	Limit 1000 1000	- mg/kg 1000 mg/kg 1000 mg/kg	LimitUnitMDL-mg/kg5-mg/kg5-mg/kg5-mg/kg5-mg/kg5-mg/kg51000mg/kg501000mg/kg501000mg/kg501000mg/kg50	Limit Unit MDL 003 - mg/kg 5 ND 1000 mg/kg 50 ND 1000 mg/kg 50 ND 1000 mg/kg 50 ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido) -ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND

Notes:



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(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)

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



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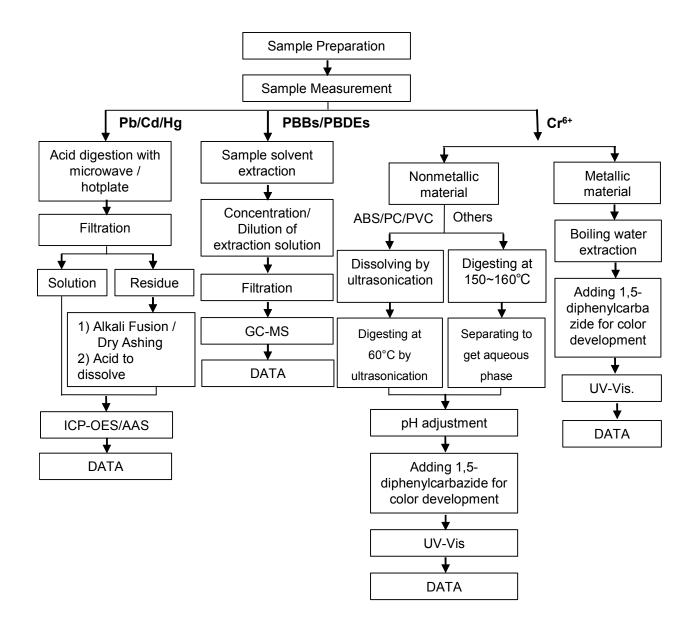
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Pb/Cd/Hg/Cr6+/PBBs/PBDEs Testing Flow Chart

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





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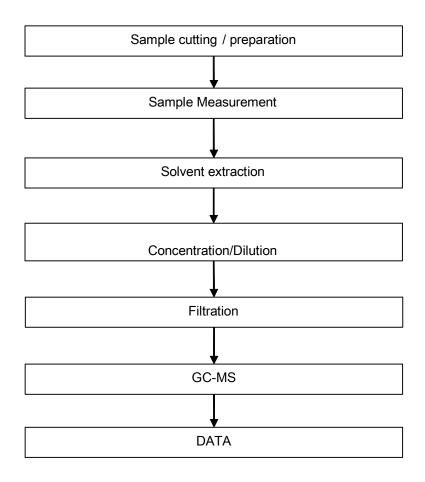
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Phthalates Testing Flow Chart





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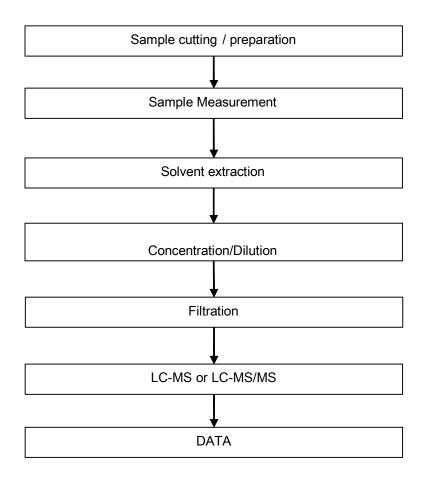
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PFOA / PFOS Testing Flow Chart





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