

## 承认书

Approval Sheet

客户(Customer): /

客户料号 (Cus . P/N):/

华联威料号 (HLW P/N): U326-053B-127011

品名规格 (PronameSpec): USB 3.0AF 侧插 90 度

送样日期 (Delivery Date):2022/01/18

承认日期 (Acknowledge Date):2022/01/20

Approved No:	客	户									
	Customer										
采 购 部	品 质 部	工程部	确认								
Purchasing Dept	QC Dept	Engineering Dept	Approved By								
深均	市华联威电	子科技有限公司									
SHEN ZHEN S	HI HUA LIAN WEI EI	ECTRONICS TECHNOLOG	Y CO; LTD.								
业务部	品 管 部	工程部	核 准								
Sales Dept	QC Dept	Engineering Dept	Checked By								
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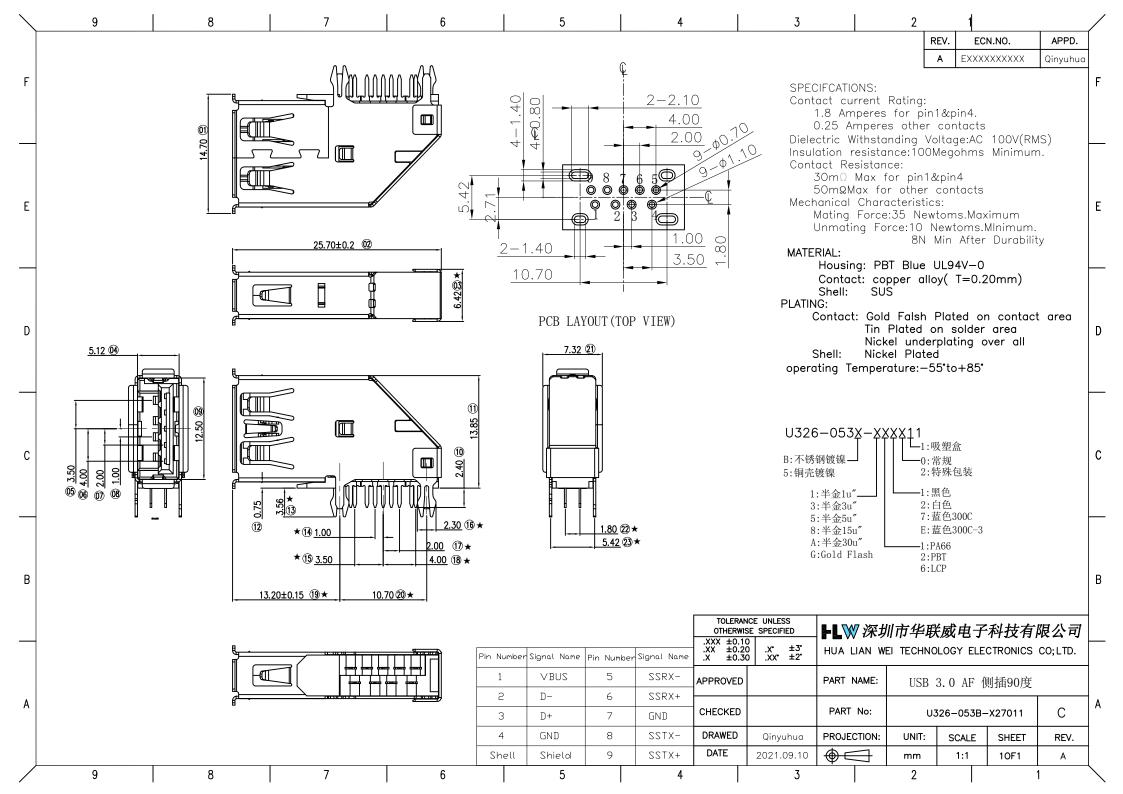


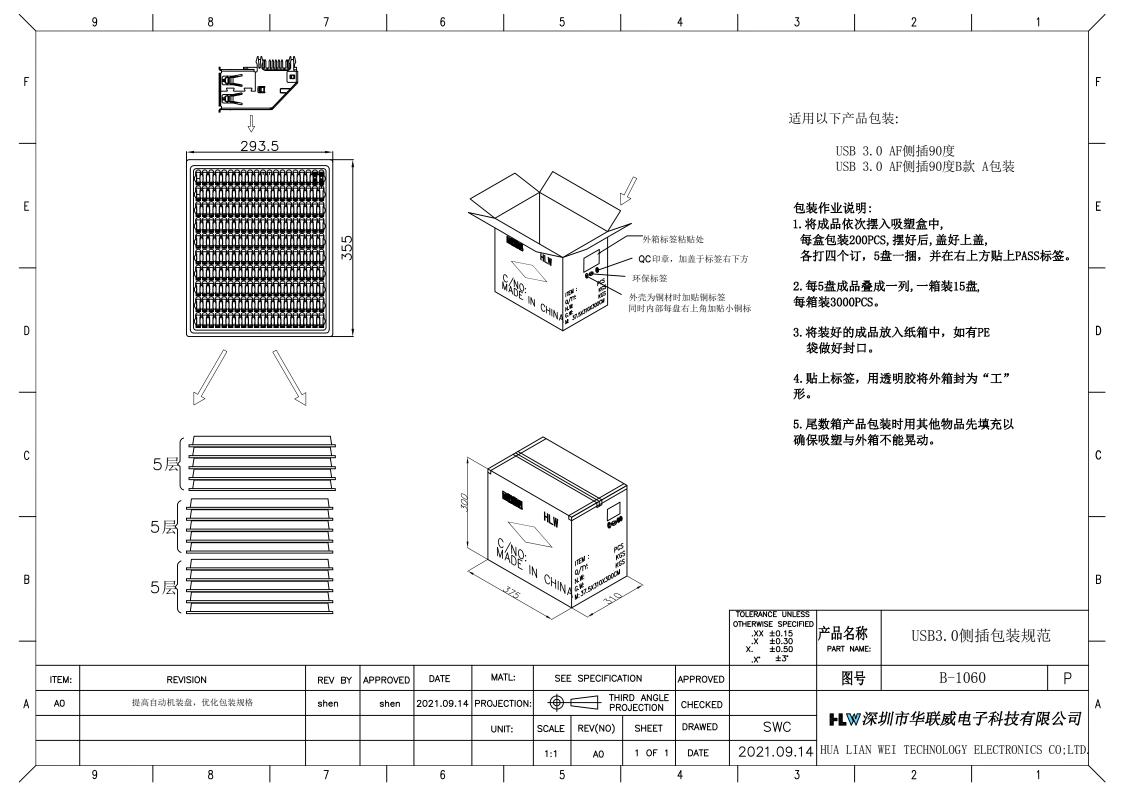
## **FLWCONN**®

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## 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):

4.1.1 Examination of Visual

- 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)

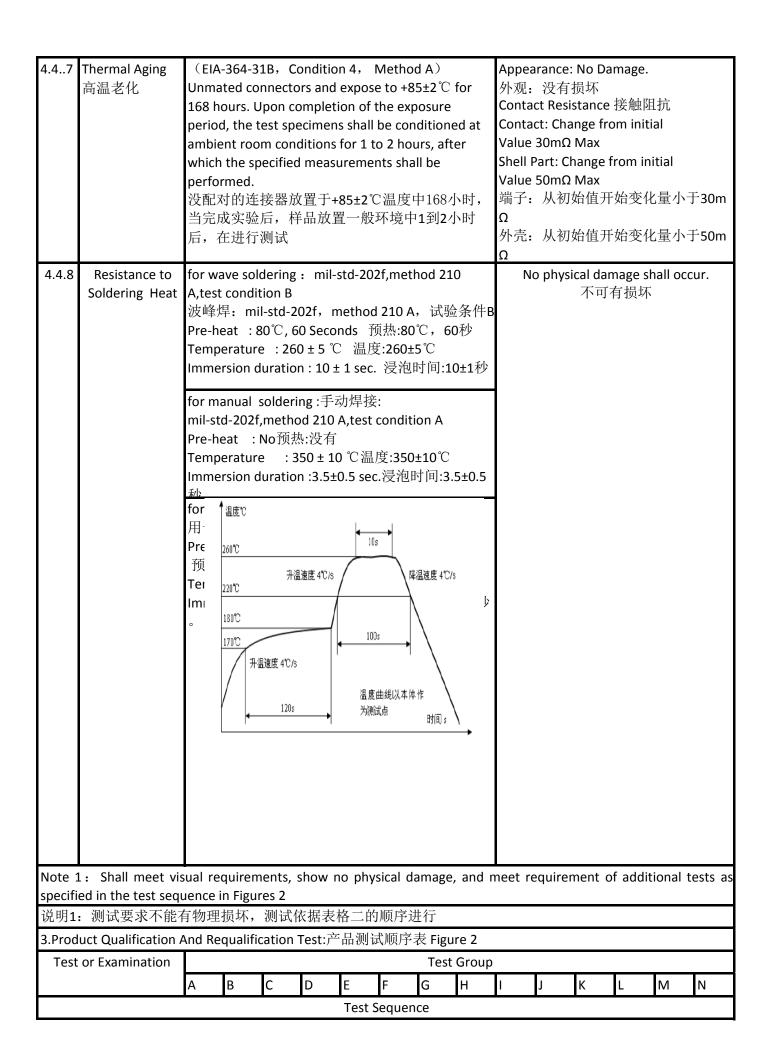
4.3Mechanical Performance(机械性能)

	Product 产品外观	目视	of the base or damage. 不得有电镀层 剥落,塑料变形或破损							
4.2. El	4.2. Electrical Performance(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 20mA的电流再测端子的电阻值	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)							
4.2.2	Dielectric Withstanding Voltage (耐电压)	(EIA-364-20C) Unmated connectors, apply 100V AC (RMS.) 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 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 500V的直流电压1分钟	100MΩ min(unmated) 没有配对需大于100 MΩ							

No peeling off the plating deformation

Insertion/Withdr		
awal Force	Insertion and withdrawal speed: 25mm/minute.	Maximum insertion force35N; 插入力不超过35N(3.57kg); Withdrawal force 10N Min; 拔出力最小10N (1.02kg); EXTRACTION FORCE(AFTER TEST):8N MIN 拔出力(耐久测试后):8N最小
Durability 寿命测试	(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 拔出力最小8N (0.82kg)
Vibration 振动	(EIA-364-28条件3) 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	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
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
vironmental Perfo	rmance	
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
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%
	awal Force 插入力/拔出力  Durability 寿命测试  Vibration 振动  Physical shock 冲击性  fironmental Perfo Thermal shock test 冷热冲击	Insertion and withdrawal speed: 25mm/minute. 插入力/拔出力  (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  (EIA-364-28条件3) 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  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  rironmental Performance  Thermal shock test 10 cycles of:10个循环, a)-55±3℃ for 30 minutes b)+85±3℃ for 30 minutes  Solder ability  [EIA-364-52) To be sipped in the solder bath 245±5℃ Coverage for 3 seconds.

4 4 4	11 . 10.	(FIA 264 24B)	
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	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
4.44	alt 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	No detrimental corrosion( Terminal solder tail unrequested) 产品无氧化,锈蚀(端子焊脚镀锡处不作要求)  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30mΩ 外壳: 从初始值开始变化量小于50mΩ
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



4.1.1.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:	制作人:
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# 深圳市华联威电子科技有限公司 SHENZHENHUALIANWEIELECTRONICS CO., LTD.

## 測試報告

### **TEST REPORT**

_		ı	I	ı	1						
	產品名稱 Part Name	USB 3.0AF侧插90度	測試日期 Date of Testing	2022.01.19- 2022.01.20	報告編號 Report NO.			MD20220120-01			
	產品型號 Part Name	U326-053B-127011	樣品數量 Quantity	5PCS		測試環境 ing Envir		濕 度Temp:18~2 相對濕度R.H.:49%			
一.電	性測試 ELECTRIC	CAL TEST									
						測試記錄	綠Testin	g Result	t	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 resistance	Test current:100mA max	DIGITAL MICRO- OHMMETER	30 m Ω Max	15.65 mΩ	15.25 m Ω	14.37 m Ω	15.41 mΩ	15.20 mΩ	Р	
2	Insulation resistance	Test voltage:500VAC Operation stated:1min	ULTRA HIGH RESISTANCE METER	100 M Ω Min	Pass	Pass	Pass	Pass	Pass	Р	
3	Dielectric 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 MECI	HANICAL TEST									
			.= \ \	1=14		測試記録	綠Testin	g Result	t	判定Judge	
序號 測試項目 NO. 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	Durability test	Rate:200cycles/hour Total: 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 minute	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 minute	Insertion force testing machine	No physical damage	Pass	Pass	Pass	Pass	Pass	Р	
<b>三.環</b> 序號 NO.	<b>境特性測試 ENVI</b> 測試項目 Testing Item	RONMENTAL TEST 測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC		測試記録	綠Testin	g Result	t	判定、	Judge
110.	rosting Itom	resum goonardons	Tooting Equipment	0, 20	1	2	3	4	5	Pass	Fail
						<b>-</b>			l l		<del></del>
1	Humidity- Temperature cycle	Temperature: 40±2°C Humidity: 90~95% Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	Р	
1 2	Temperature	Humidity: <b>90~</b> 95%	CONTROLLED TEMP. & HUMIDTY		Pass Pass	Pass Pass	Pass Pass	Pass Pass	Pass Pass	P P	
	Temperature cycle	Humidity: 90~95% Duration:168H Temperature: 70±2°C	CONTROLLED TEMP. & HUMIDTY CHAMBER	damage No physical							

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄Testing Result						判定Judge	
	resumg team	. seamily contained	Treesing Equipment	5. 25	1	2	3	4	5	Pass	Fail	
1	Salt spray test	Temperature: 35±2°C Concentration:5±1 % Duration:12H	SALT SPRAY TESTER No Oxidation		Pass	Pass	Pass	Pass	Pass	Р		
2	Resistance to soldering heat test	Temperature: 260±5°C Duration: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 ≷95%	Pass	Pass	Pass	Pass	Pass	Р		
判 定 Result ■合格 (ACCEPT) □ 不合格 (REJECT)												

審核(Approver): 欠必峰

測試(Tester): 但芬



# **上** 深圳市华联威电子科技有限公司 檢驗報告

■首件	-檢驗 口入庫	檢驗 口出	貨檢驗	口客	退檢驗	口退料	檢驗	口其他	1	2022	年01月2	20日 版》	欠: <b>A0</b>
料號	U326-053B-	127011	制令	單位	/			食單位		工程部		牛製作者	裝配
品名	USB 3.0 AF (	则插90度	客戶	代號		/	批	量		/		時間	/
	47 11 44 11						數	量		PCS		時間	/
	抽樣標準			■單		]雙次		抽机		AQL		MAJ:0.40	
	MIL-STD-105E	· /	■正常 □加嚴 □減量		`	CS)	ACC/REJ	0	/	/			
不良	之数:	CRI (	/ )	MA	J ( /	)	MIN	(	/ )		不良	率(%)	/
NO.	檢驗項目	檢測		檢	驗記	錄		品管	判定	CRI	MAJ	MIN	備注
110.	單位:MM/G	儀器	1	2	3	4	5	AC	RE	Cita	1,111	17111	
	$25.70 \pm 0.2$	D	25.76	25.74	25.75	25.79	25.77	$\checkmark$					
	6.42±0.20	D	6.45	6.44	6.40	6.39	6.42	<b>√</b>					
	5.12±0.20	D	5.19	5.22	5.18	5.23	5.26	<b>√</b>					
	12.50±0.20	D	12.45	12.48	12.50	12.57	12.55	<b>√</b>					
	13.85±0.20	D	13.81	13.86	13.85	13.88	13.90	<b>√</b>					
	3.56±0.20	D	3.55	3.50	3.58	3.55	3.51	<b>√</b>					
	1.00±0.20	D	0.99	0.98	1.02	1.00	1.05	<b>√</b>					
	3.50±0.20	D	3.38	3.40	3.39	3.42	3.44	<b>√</b>					
	2.30±0.20	D	2.30	2.35	2.39	2.37	2.31	<b>√</b>					
尺	2.00±0.20	D	2.03	2.06	2.04	2.09	2.11	√					
, -	4.00±0.20	D	4.01	3.98	4.03	4.07	4.04	√					
寸	13.20±0.15	D	13.10	13.15	13.20	13.18	13.12	<i>√</i>					
्राचार	10.70±0.20	D	10.70	10.65	10.62	10.69	10.72	<i>√</i>					
測	1.80±0.20	D	1.72	1.75	1.79	1.81	1.75						
量	5.42±0.20	D	5.32	5.35	5.38	5.42	5.40	<b>√</b>					
	3.42±0.20	Б	3.32	3.33	3.30	3.72	3.40	~					
1.4 2.4 4.1	. I.E	UEI Art		EV I H &		→ >	<b>—</b>	<u> </u>					
	【據: ■<<工程									· -	□ <b>т</b> ++	<b>→</b>	
使测像 品保判	器:A游標卡尺 [完·		沙學溥儀 答Accep		競 E放え 退貨Re			<u> </u>		J器 I简位。 T挑選Soi		<u> </u>	
<u> ロロレドナ!</u>	<u>」足·</u> 核 准		Z必峰	, <u> </u>	審		□1寸不	/				但芬	
	INSPBY												

保存部門: 品保部 保存期限:三年 QR-M-003



# **▶■** 深圳市华联威电子科技有限公司

## 电镀报告表

品名:USB 3.0 AF 侧插90度(端子) 版次:A.0 电镀规格:Ni40u", Sn40u", Au1u" 日期:2021-09-04 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	66. 5u"	OK	2021/9/4	14:12:15
2	40u″MIN	61. 6u″	OK	2021/9/4	14:12:17
3	40u″MIN	75. 2u″	OK	2021/9/4	14:12:19
4	40u″MIN	63. 8u″	OK	2021/9/4	14:12:21

#### 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	62. 9u″	OK	2021/9/4	14:20:05
2	40u″MIN	61. 3u"	OK	2021/9/4	14:20:07
3	40u″MIN	63. 3u″	OK	2021/9/4	14:20:09
4	40u″MIN	62. 5u″	OK	2021/9/4	14:20:11

#### 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	1u"MIN	1. 26u"	OK	2021/9/4	14:35:10
2	1u"MIN	1.35u"	OK	2021/9/4	14:35:12
3	1u"MIN	1. 44u"	OK	2021/9/4	14:35:14
4	1u"MIN	1.36u"	OK	2021/9/4	14:35:16

核准: 欠必锋

检验员: 但芬



# 

## 电镀报告表

品名: USB 3.0 AF 侧插90度外壳 版次:A.0 电镀规格:Cu:40u"Ni:50u"MIN 页次:1/1 日期:2021/8/29

厂商:金和源

测试设备:CMI X-射线膜厚测试仪

#### 1、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	40u"min	45. 3u"	OK	2021/8/29	19:55:05
2	40u"min	48. 5u"	OK	2021/8/29	19:55:57
3	40u"min	44. 2u"	OK	2021/8/29	19:56:48
4	40u"min	45. 6u″	OK	2021/8/29	19:57:31

#### 2、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	50u″min	57. 3u"	OK	2021/8/29	19:58:12
2	50u"min	55.6u″	OK	2021/8/29	19:59:04
3	50u″min	56. 2u"	OK	2021/8/29	20:01:44
4	50u"min	58. 3u"	OK	2021/8/29	20:02:36

核准: 欠必锋 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 OID 1210
客户	/	试验起始日期	2022年01月19日 20:00 时起
谷尸	/	DATE	2022年01月20日 08:00 时止
样品名称	USB 3.0AF 侧插90度	试验数量	5PCS
P/N	U326-053B-127011		

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)

样品序号	试验后现象	判定
件加力亏	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

## 东莞市强能金属有限公司

产品质量证明书

		la la	公差	(mm)	壬胄 /1)	日期	
牌号	状态	规格	厚度	宽度	重量 (kg)		
C2680 (H65)	EII	0. 25*305	±0.01	+0/-0.1	kg .	2011-7-16	
	元素	CU%	P%	Pb%	Fe%	Zn%	
化学 成份	标准	63. 5-68	0. 01	0.03 X	<b>荒市</b> 州	余量	
77.0	实际值	64. 4	0. 0024	0.0006	0.0137	余量	
成品	项目	抗拉强度 Mpa	延伸率	硬度值。 HV	学 中国	品粒度 mm	
性能	实际值 560			175	111		
执行标注:	GB/T2	059-2000	检验员:	欧明端	质管部经理	覃中文	

备注: 货到用户:请顾客在七天内提出供货质量异议我厂负责产品质量三包,超出七天后顾客反映供货质量异议,我厂概不负责.

## 材质证明

兹有我司邦奇塑料科技有限公司为贵司所提供的产品防火原料 PBT 防火加纤 15% 300C 蓝色,由以下物质组成:

物品名称: PBT 防火加纤 15% 300C 蓝色

组成物质: PBT 环保树脂

65-70%

玻纤

15%

增韧剂

5%

润滑剂

0.2%

抗氧剂

0.2%

偶联剂

0.3%

防火剂

15%

### 建议成型:

- 1. 烘干温度 120-140℃
- 2. 烘干时间 2-4 小时
- 3. 成型温度 240-260℃

## 特此证明!



## 产品质量证明书

## PRODUCT INSPECTION CERTIFICATE

	同号码:	201	3101400	3	等	级:		1.4		* .							
ij	tract No. 货力:	***************************************	YU HUA	·	Gr.	ade 名:	不锈钢料	<b>入礼钢带(</b>	COIL)	牌号:	SUS304-CS	SP 1/2H	钢卷	编号:		13092820	)
54.44	er 货力: plier	<u></u>	完鑫发	· · · · · · · · · · · · · · · · · · ·		Metrication	JIS	G 4313-19	996	Type 表面加工: Surface Finish	2B	尧	4	number 日期:	2	013-10-1	5
				品尺寸 duct Si			1	拉伸试验 nsile Te	st	表面硬度 Hardness		(	化 hemical	学成 Composi		· •	
序号 No.	, , , , , , , , , , , , , , , , , , , ,	厚度 Thickness mm	宽度 Width 皿	长度 Length m	卷数 Number C	重量 Weight Kg	N/mm²	抗拉强度 N/mm <sup>2</sup>	%	维氏硬度 HV	碶 C	硅 Si	Œ. Mn	₽	磁 S	領 Ni	铬 Cī
1	SUS304-CSP 1/2H	0, 3	410	COIL	i	1102.3	≥470 625	≥780 836	≥6 7	250-300 280	≤0.080 0.072	≤1.000 0.490	≤2.000 1.212	≤0.045 0,042	≤0.030 0.002	8.0-10.5 8.100	18.0-20.0 18.020
																展材料	
Size and Surface:Guaranteed  2. 拉伸试验:方法符合JISZ2241标准:试择规格为JISZ2201 5号 Tensile Test:Technique accord with JIS Z 2241; Sample Specification accord with No. 5 of JIS Z 2201					WE HEREBY WADE IN A SPECIFICA *此报告(	CERTIFY COORDANC TION 又可完全	D符合订单和标准 THAT THE MATERI E WITH THE ORDER 复制 only be copies	AL HEREIN I	ias been			ANI WATER	未 部 AL DEPT.				



**Test Report** No. CANEC2119174205 Date: 22 Oct 2021 Page 1 of 4

SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

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

The following sample(s) was/were submitted and identified on behalf of the clients as: SUS304 hardware

SGS Job No. : CP21-055214 - GZ

Model No.: SUS304

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

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

series

Date of Sample Received: 18 Oct 2021

Testing Period: 18 Oct 2021 - 22 Oct 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS

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

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

Allie Chen

Allie Chen
Approved Signatory





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t (86–20) 82155555

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#### **Test Report** No. CANEC2119174205 Date: 22 Oct 2021 Page 2 of 4

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description CAN21-191742.005 SN<sub>1</sub> Silver-grey metal

#### Remarks:

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

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

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

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>005</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 (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

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID:12586

- (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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No. CANEC2119174205

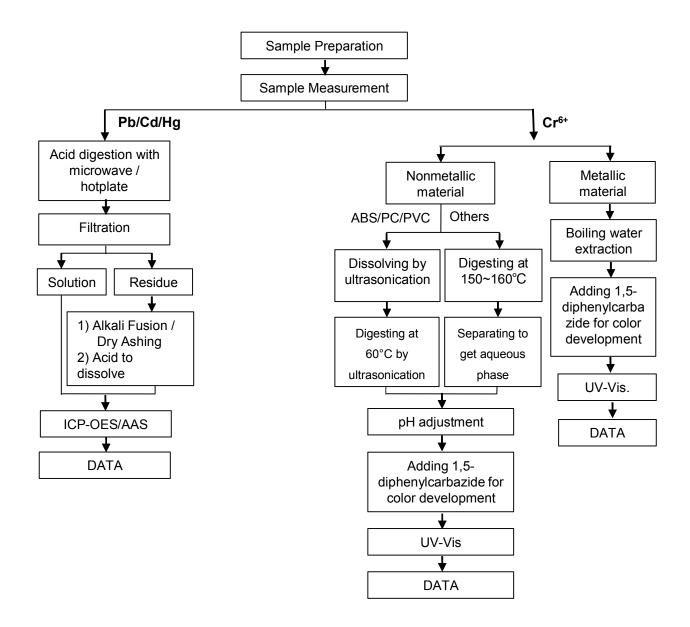
Date: 22 Oct 2021

Page 3 of 4

#### **ATTACHMENTS**

#### Pb/Cd/Hg/Cr6+ Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded).





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No. CANEC2119174205

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Date: 22 Oct 2021

Sample photo:



SGS authenticate the photo on original report only

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**Test Report** No. CANEC2119174216 Date: 22 Oct 2021 Page 1 of 6

SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

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

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

SGS Job No. : CP21-055214 - GZ

Model No. : PBT blue plastic

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

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

series

Date of Sample Received: 18 Oct 2021

Testing Period : 18 Oct 2021 - 22 Oct 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

 $Bis(2-ethylhexyl) \ phthalate \ (DEHP) \ , \ Butyl \ benzyl \ phthalate \ (BBP), \ Dibutyl \ phthalate \ (DIBP) \ comply \ with \ the \ limits \ as \ set \ by$ 

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

Signed for and on behalf of

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Allie Chen

Allie Chen

Approved Signatory





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#### **Test Report** No. CANEC2119174216 Date: 22 Oct 2021 Page 2 of 6

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description SN<sub>1</sub> CAN21-191742.016 Blue plastic

#### 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

With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, 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>016</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	12
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (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. CANEC21191742	Date: 2	22 Oct 2021	Page 3 of 6	
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>016</u>	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1,000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1,000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	50	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (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:12586 37,25
- (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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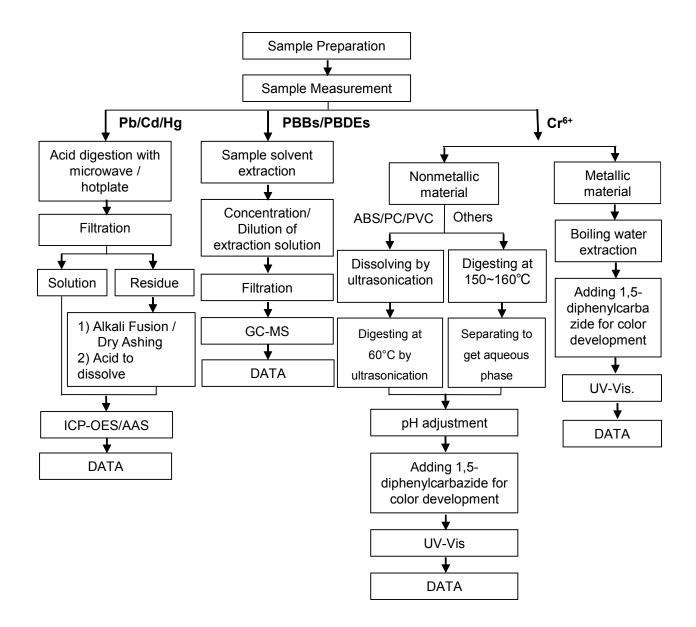
Date: 22 Oct 2021

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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. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).





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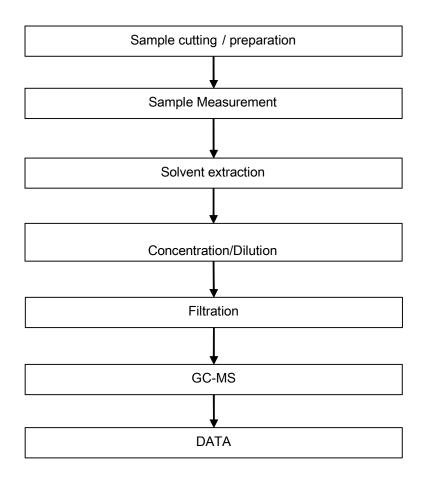
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#### **ATTACHMENTS**

### **Phthalates Testing Flow Chart**





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**Test Report** No. CANEC2119174201 Date: 22 Oct 2021 Page 1 of 4

SHENZHEN HUALIANWEI ELECTRONICS TECHNOLOGY CO.,LTD

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

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

SGS Job No. : CP21-055214 - GZ

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

Date of Sample Received: 18 Oct 2021

Testing Period: 18 Oct 2021 - 22 Oct 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS

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

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

Allie Chen

Allie Chen
Approved Signatory





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#### **Test Report** No. CANEC2119174201 Date: 22 Oct 2021 Page 2 of 4

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description

> CAN21-191742.001 SN<sub>1</sub> Silver-grey/brassy metal

#### Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL )

(4) "-" = Not Regulated

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

With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, Test Method: 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)	1,000	mg/kg	2	44
Mercury (Hg)	1,000	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

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID:12586

- (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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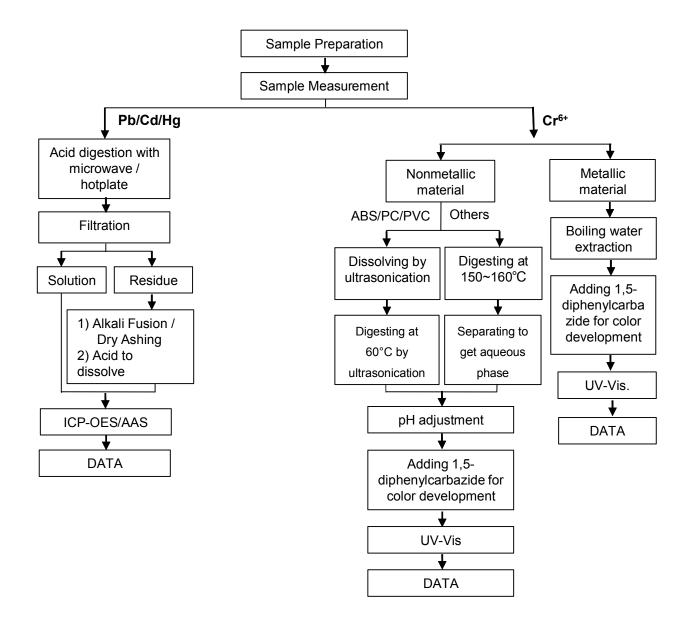
Date: 22 Oct 2021

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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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Sample photo:



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**Test Report** No. CANEC2117633801 Date: 27 Sep 2021 Page 1 of 8

SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD
TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

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

SGS Job No. : CP21-051017 - SZ

Date of Sample Received: 18 Sep 2021

Testing Period: 18 Sep 2021 - 27 Sep 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Allie Chen

Allie Chen Approved Signatory





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#### **Test Report** Page 2 of 8 No. CANEC2117633801 Date: 27 Sep 2021

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description SN<sub>1</sub> CAN21-176338.001 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

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)	1,000	mg/kg	2	73
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. CANEC21176338	o. CANEC2117633801 Date: 27 Sep 202		27 Sep 2021	Page 3 of 8
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (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:12586 37.25
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
  - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 μg/cm²). The coating is considered a non-CrVI based coating
  - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

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



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**Test Report** Date: 27 Sep 2021 Page 4 of 8 No. CANEC2117633801

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)<sub>2</sub> (CAS No.: 70225-14-8), PFOS-N(C<sub>2</sub>H<sub>5</sub>)<sub>4</sub> (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)



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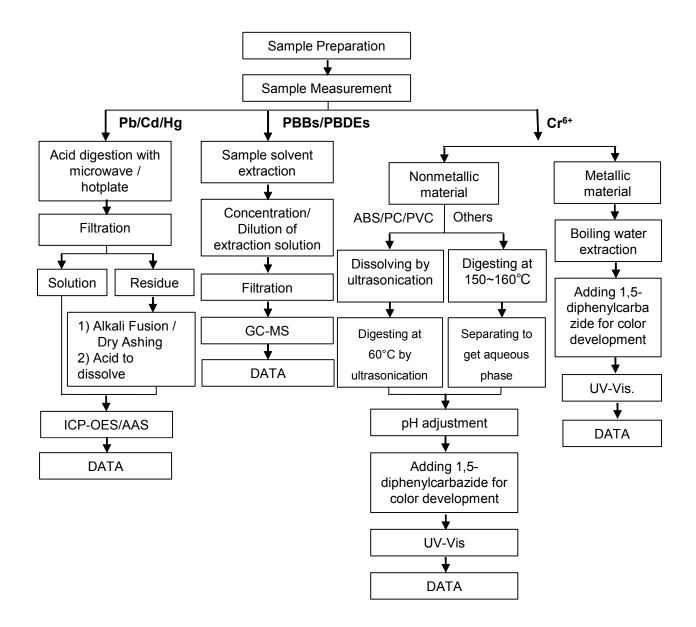
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#### **ATTACHMENTS**

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

1) These samples were dissolved totally by pre -conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).





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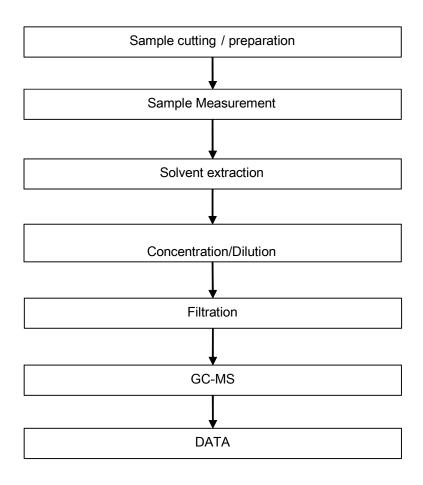


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#### **ATTACHMENTS**

## **Phthalates Testing Flow Chart**





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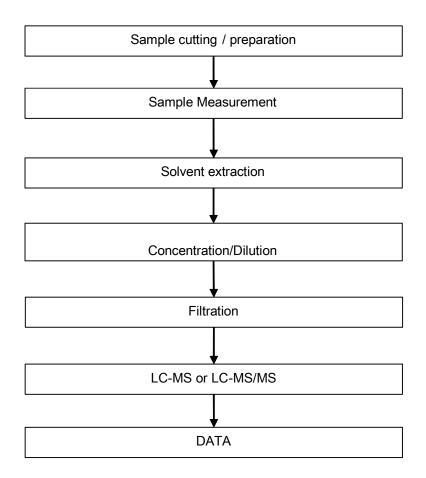
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#### **ATTACHMENTS**

## PFOA / PFOS Testing Flow Chart





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Sample photo:



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**Test Report** No. CANEC2117633803 Date: 27 Sep 2021 Page 1 of 8

SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD
TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

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

SGS Job No. : CP21-051017 - SZ

Date of Sample Received: 18 Sep 2021

Testing Period: 18 Sep 2021 - 27 Sep 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Allie Chen

Allie Chen
Approved Signatory





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#### **Test Report** No. CANEC2117633803 Date: 27 Sep 2021 Page 2 of 8

Test Results:

## Test Part Description:

Specimen No. SGS Sample ID Description

> SN<sub>1</sub> CAN21-176338.003 Silver-gray plated metal

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

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

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)	1,000	mg/kg	2	37
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. CANEC21176338	303	Date: 2	27 Sep 2021	Page 3 of 8
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID:12586 37.25
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 μg/cm². The sample coating is considered to contain CrVI
  - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 μg/cm²). The coating is considered a non-CrVI based coating
  - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

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



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Notes:

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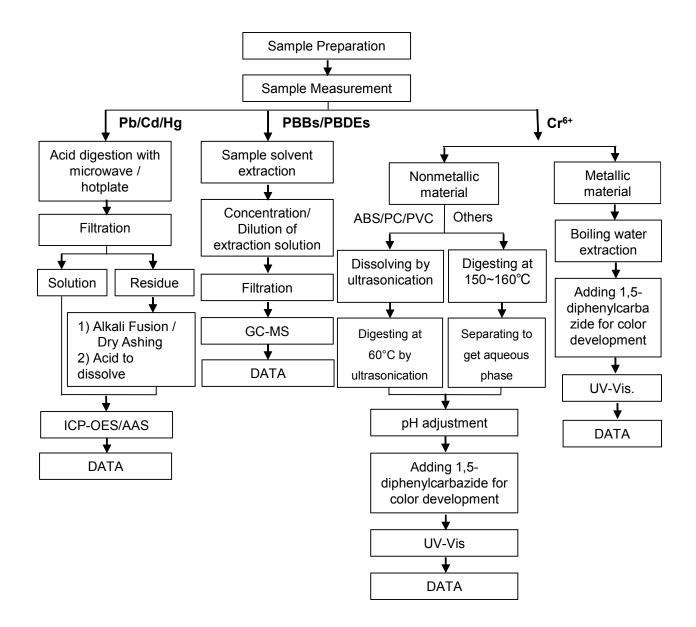
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#### **ATTACHMENTS**

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

1) These samples were dissolved totally by pre -conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).





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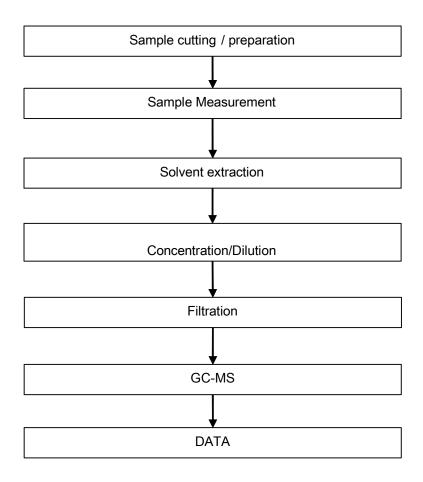


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#### **ATTACHMENTS**

## **Phthalates Testing Flow Chart**





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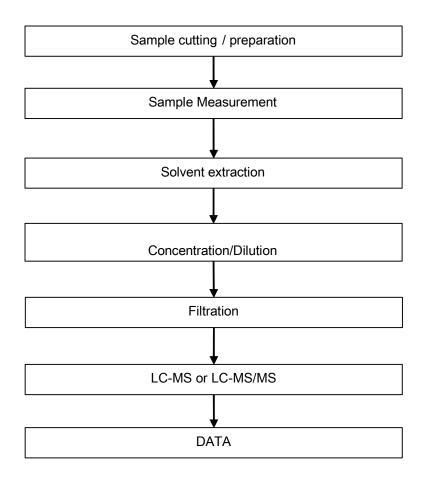
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## PFOA / PFOS Testing Flow Chart





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Sample photo:



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SHENZHEN CITY TONGHUA INDUSTRY CO.,LTD
TONGHUA MANSIN TONGLE XINBU VILLANG TOWN SHENZHEN CITY CHINA

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

SGS Job No. : CP21-051017 - SZ

Date of Sample Received: 18 Sep 2021

Testing Period: 18 Sep 2021 - 27 Sep 2021

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

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

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

Conclusion: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by

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

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

Allie Chen

Allie Chen Approved Signatory





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#### **Test Report** No. CANEC2117633804 Date: 27 Sep 2021 Page 2 of 8

Test Results:

## Test Part Description:

Specimen No. SGS Sample ID Description

SN<sub>1</sub> CAN21-176338.004 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

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>004</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	39
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID:12586 37.25
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
  - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 μg/cm²). The coating is considered a non-CrVI based coating
  - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

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

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

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>004</u>
Perfluorooctanoic acid (PFOA) and its salts+	335-67-1	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) ^	1763-23-1	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide(MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol(MeFOSE)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido) -ethanol(EtFOSE)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	mg/kg	-	ND



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#### Notes:

(1) + PFOA and its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1); (2) ^ PFOS including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH<sub>4</sub> (CAS No.: 29081-56-9), PFOS-NH(OH)<sub>2</sub> (CAS No.: 70225-14-8), PFOS-N( $C_2H_5$ )<sub>4</sub> (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)



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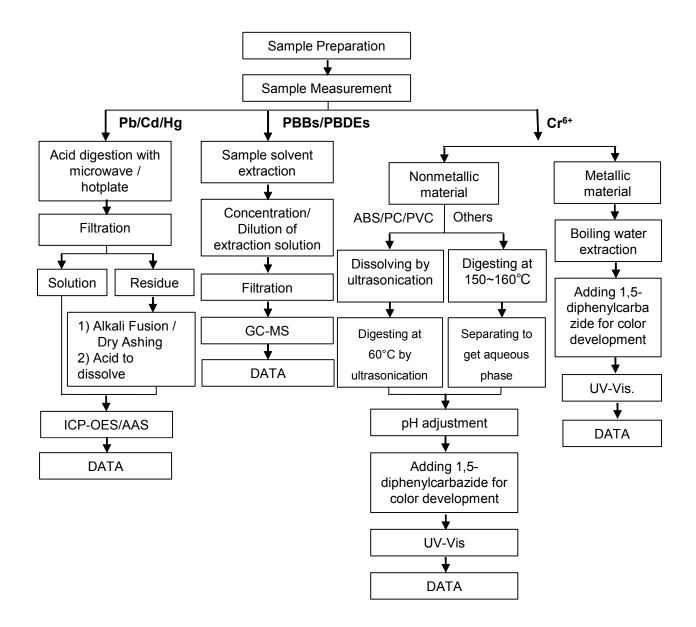
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## Pb/Cd/Hg/Cr6+/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre -conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).





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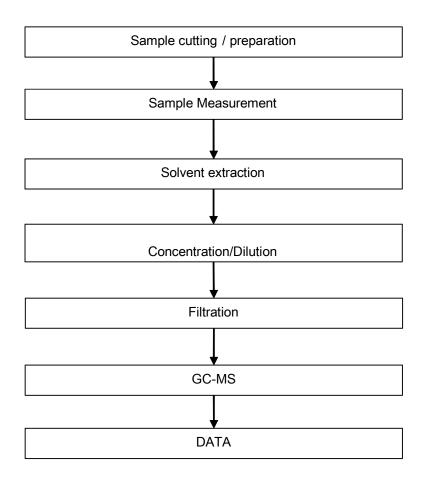
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## **Phthalates Testing Flow Chart**





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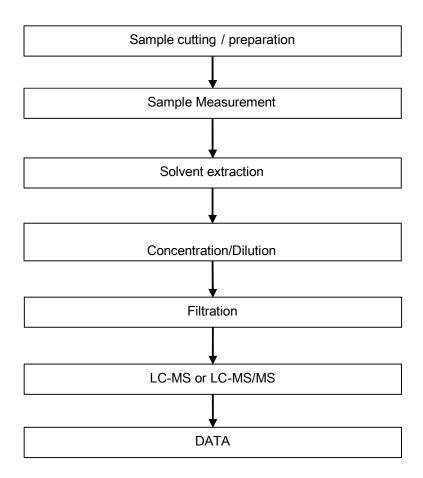
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## PFOA / PFOS Testing Flow Chart





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