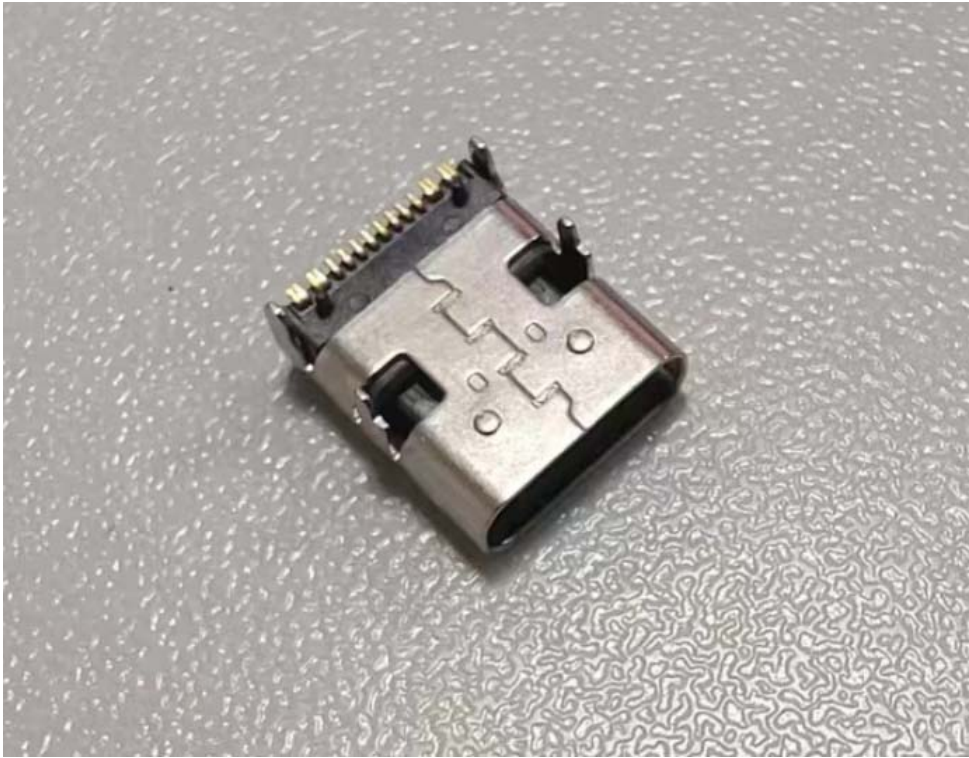


USB插座 ST-C-1030022-16P-L10.0 设计规格书

产品图片



基本规格

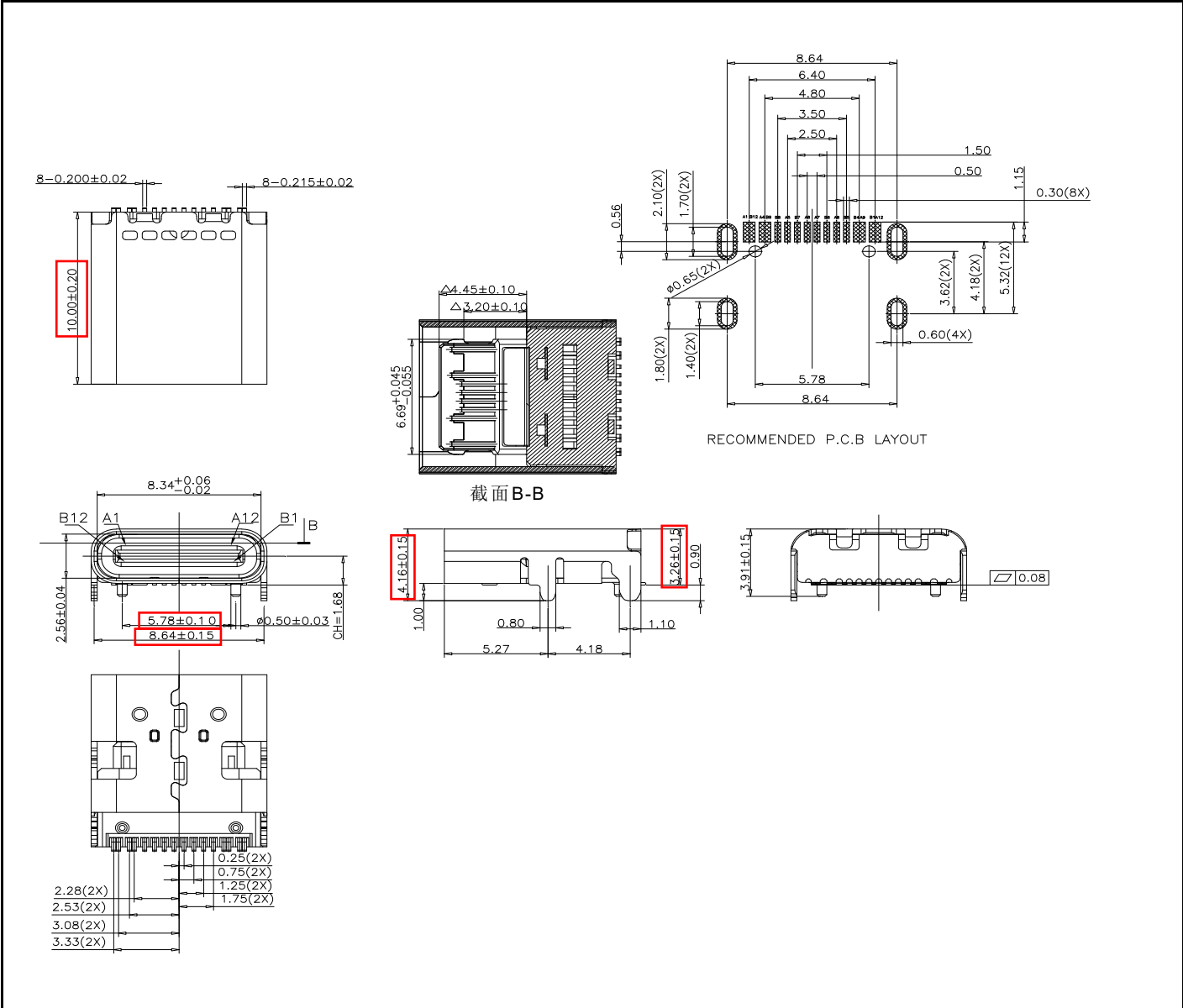
参数 属性	参数名称	要求值	厂家规格值 (厂家必填)
基本规格	公母座	TYPE-C 母座	TYPE-C 母座
	引脚数目	20	20
	后盖	否	否
	沉板	否	否
	安装方式	SMT	SMT

材质

参数 属性	参数名称	要求值	厂家规格值 (厂家必填)
材质	外壳	SUS T=0.3mm 镀镍	SUS T=0.3mm 镀镍
	塑座	LCP黑色 (回料<15%)	LCP黑色 (回料<15%)
	端子	铜合金 镀金	铜合金 镀金

USB插座 ST-C-1030022-16P-L10.0 设计规格书

结构尺寸



参数属性	序号	要求值	厂家规格值 (厂家必填)	厂家测试值 (厂家必填)
关键尺寸	1	10.0±0.2mm	10.0±0.2mm	10.0
	2	3.26±0.15mm	3.26±0.15mm	3.26
	3	4.16±0.15mm	4.16±0.15mm	4.16
	4	8.64±0.15mm	8.64±0.15mm	8.64
	5	5.78±0.10mm	5.78±0.05mm	5.78
普通尺寸	6	2.56±0.04mm	2.56±0.04mm	2.56
	7	5.27±0.2mm	5.27±0.2mm	5.27
	8	4.18±0.2mm	4.18±0.2mm	4.18
	9	0.5±0.03mm	0.5±0.05mm	0.5
	10			
	11			
	12			
	13			
	14			

USB插座 ST-C-1030022-16P-L10.0 设计规格书

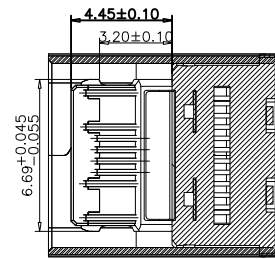
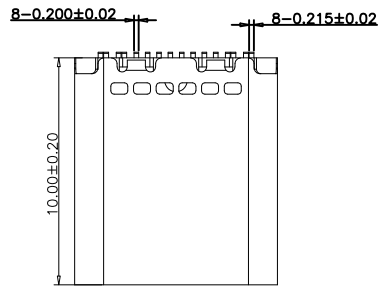
电性能

参数 属性	参数名称	要求值	厂家规格值 (厂家必填)	判定标准
电性能	额定电压	5.0A	5.0A	/
	额定电流	20V	20V	/
	接触电阻	$\leq 40\text{m}\Omega$	$\leq 40\text{m}\Omega$	$\leq 40\text{m}\Omega$
	绝缘电阻	$\geq 100\text{M}\Omega$ (DC100V, 1 min)	$\geq 100\text{M}\Omega$ (DC100V, 1 min)	$\geq 100\text{M}\Omega$
	耐压	DC 100V(1min)	DC 100V(1min)	无击穿/电弧现象

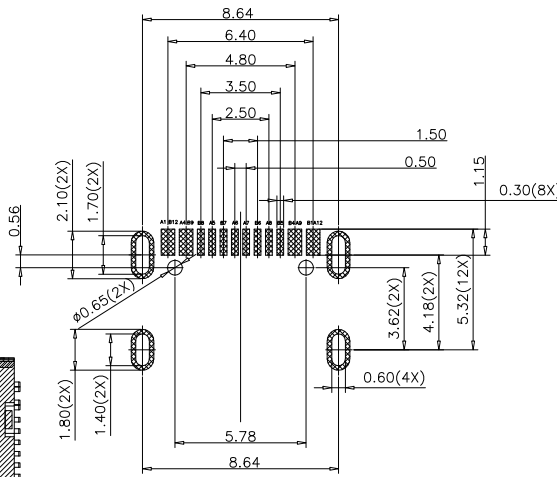
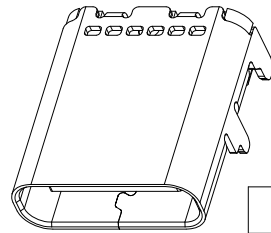
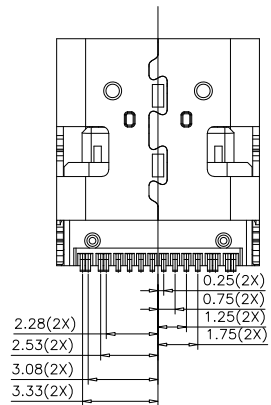
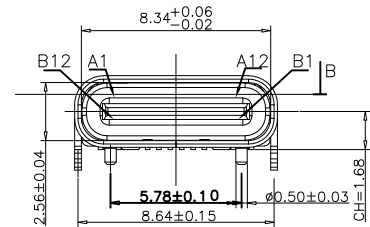
可靠性

参数 属性	参数名称	要求值	厂家规格值 (厂家必填)	判定标准
可靠性	插入力	运行速度: 25.4mm/min 5-20N Max	运行速度: 25.4mm/min 5-20N Max	5-20N Max
	拔出力	运行速度: 25.4mm/min 8-20N Min	运行速度: 25.4mm/min 8-20N Min	8-20N Min
	插拔寿命	10000cycle (速度 20-30次/min)	10000cycle (速度 20-30次/min)	10000次后 接触电阻 $\leq 40\text{m}\Omega$ 插拔力5-20N
	耐热性	80℃, 96hours	80℃, 96hours	外观无损坏 接触电阻 $\leq 50\text{m}\Omega$
	焊接温度	265℃, 5S	265℃, 5S	浸锡面积95%以上
	盐雾	24hours (35℃, 5%, PH6.5~7.2)	24hours (35℃, 5%, PH6.5~7.2)	表面电镀层无脱落, 无绿色 腐蚀物之现象 接触电阻 $\leq 100\text{m}\Omega$
	工作温度	零下40℃至零上85℃	零下40℃至零上85℃	/
	存储温湿度	零下20℃至零上60℃	零下20℃至零上60℃	/
	存储期	3months	3months	/

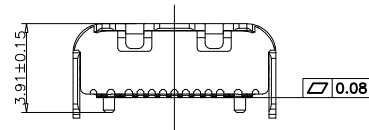
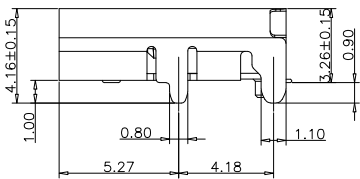
RoHS



截面B-B



RECOMMENDED P.C.B LAYOUT



USB TYPE-C PIN ASSIGNMENTS

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
A1	GND	B12	GND
A4	VBUS	B9	VBUS
A5	CC1	B8	SBU2
A6	Dp1	B7	Dn2
A7	Dn1	B6	Dp2
A8	SBU1	B5	CC2
A9	VBUS	B4	VBUS
A12	GND	B1	GND

NOTE:

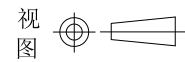
- MATERIAL:
 - INSULATOR: HIGH TEMPERATURE PLASTIC UL 94V-0;
 - CONTACT: COPPER ALLOY
 - SHELL: STAINLESS STEEL
- ELECTRICAL CHARACTERISTICS:
 - CONTACT RESISTANCE: 40mΩ Max FOR INITIAL. 30mΩ CHANGE AFTER TEST. MEASURE AT 20mV, 100mA.
 - CONTACT CURRENT RATING: 5A FOR VBUS PIN; 1.25A FOR VCONN PIN.
 - DIELECTRIC WITHSTANDING VOLTAGE: 100V AC R.M.S.
 - VOLTAGE RATING: 20V AC/AC (RMS.MAX)
 - INSULATION RESISTANCE 100MΩ Min
 - OPERATING TEMPERATURE: -40°C ~ 85°C
- MECHANICAL CHARACTERISTICS:
 - MATING FORCE: 5~20 N.
 - UNMATED FORCE: 8~20N AFTER TEST
 - DURABILITY: 10,000 CYCLES
- PLATING
 - TERMINAL CONTACT: (SEE TAB) GOLD PLATING ALL OVER 50u" Min NICKEL AND 80u" Min Tin ALL OVER 50u" Min NICKEL ON SOLDER AREA
 - SHELL: 50u" Min. NICKEL ALL OVER,

发放部门	
行政部	
业务部	
采购部	
工程部	
品保部	
生产部	

X.	±0.50	X.*	±2°
.X	±0.30	.X*	±1°
.XX	±0.10	.XX*	±0.5°
.XXX	±0.05		

标 记	处 数	更改文件号	签 字	日 期
设 计	C Y	日期	24.04.01	标准化
校 对	L P J	日期	24.04.01	审 定
工 艺		日期		
审 核	L Z W	日期	24.04.01	

深圳市富港科技有限公司

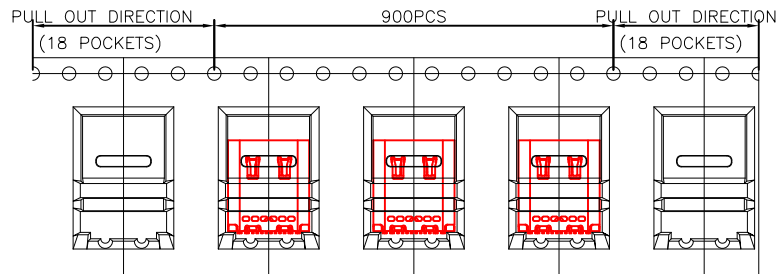


TYPE-C USB插座

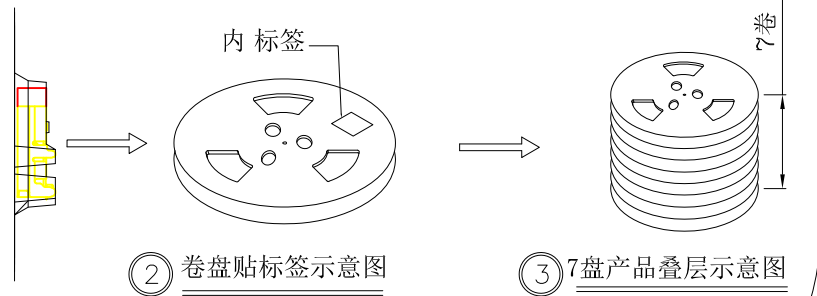
ST-C-1030022-16P-L10.0

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RoHS

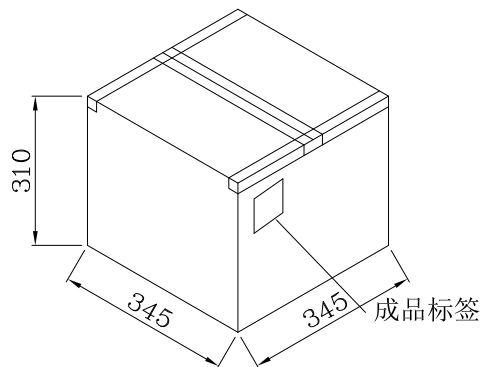


① 产品入载带示意图

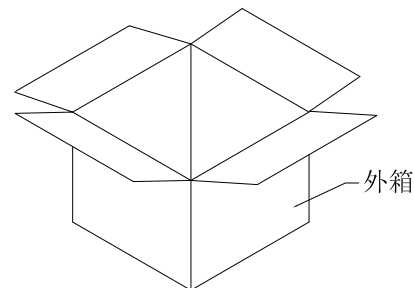


② 卷盘贴标签示意图

③ 7盘产品叠层示意图



⑤ 外箱封箱示意图



④ 产品入外箱示意图

	REEL	CARTON
CONNECTOR (PCS)	900	6300

包装说明:

1. 将检验好的成品;对插口朝前放入载带;每卷装900PCS产品;具体如图一所示
2. 将包装好的产品;每盘必需贴上内标签;具体如图二所示
3. 将贴好内标签的产品每7盘叠;具体如图三所示
5. 装好后并封好纸箱及贴好相关标签;具体如图五所示;
(产品包装的标签,如客户有要求,请按客户要求包装出货)
6. 载带前面留18PCS空格,后面留18PCS空格
7. COVER与CARRY剥离力:50-125g,速度:300mm/分钟左右,剥离角度:165° -180°

发放部门

行政部	
业务部	
采购部	
工程部	
品保部	
生产部	

X. ±0.50 X* ± 2°
.X ±0.30 .X* ± 1°
.XX ±0.10 .XX* ± 0.5°
.XXX ± 0.05

						深圳市富港科技有限公司								
														TYPE-C USB插座
标 记 处 数			更改文件号		签 字		日 期		视 图				TYPE-C USB插座	
设 计	C	Y	日 期	24.04.01	标准化		日 期		图样标记		重量	比例		
校 对	L	P	J	日 期	24.04.01	审 定		日 期						
工 艺			日 期											
审 核	L	Z	W	日 期	24.04.01					共 页	第 页		ST-C-1030022-16P-L10.0	

产品规格书	型号:	文件编号 Doc. No.	SPEC-TYPEC-01
		版本 Rev.	A
		页次 Sheet	1/7

1. 范围 Scope

该标准涵盖USB C TYPE连接器之功能要求及测试方法。

This specification covers the requirements for product performance and test methods USB C TYPE plug and receptacle Connectors.

2. 标准文件 Related Standards

- 2-1 IEC512
- 2-2 MIL-STD 202
- 2-3 EIA-364

3. 等级 Rating

- 3-1额定电压:5 V交流(rms)
Voltage Rating : 5 V AC (rms)
- 3-2温度范围:存储:-20℃+ 60℃
Temperature Range: storage : -20℃ to +60℃ ;
工作:-40℃+ 85℃;
operating : -40℃ to +85℃ ;
名义: :+20℃
Nominal : +20℃

4. 测试要求 Test Condition

- 4-1所有的测试应当执行详见下表条件,除非另有说明。
All tests shall be performed as bellow conditions unless otherwise specified.
- 4-2温度范围:+ 15℃+ 35℃
Temperature range : +15℃ to +35℃
- 4-3 湿度范围:25% - 85%
Humidity range: 25% to 85%

5. 产品外观 PRODUCT APPEARANCE			
项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
5-1	产品外观 Examination of Product	依据 EIA364-18 测试 肉眼观察, 产品外形必须符合图纸要求。	产品外观良好, 无外观不良情形, 产品结构及尺寸须符合图纸设计要求。
		EIA364-18 Shall be confirmed with eyes in accordance with each drawing.	Outward appearance shall be good without such injurious problem and structure shall be meet the design and dimension requirement of drawing
6. 机械性能 MECHANICAL PERFORMANCE			
项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
6-1	插入力 Insertion force	依据 EIA 364-13 测试方式 ,操作速度 12.5mm /min.	插拔力的范围: 5N-20 N The connector insertion force shall be the range from 5N to 20N
		EIA 364-13 Measure force at maximum rate of 12.5mm (0.492") per minute	
6-2	拔出力 Extraction force	依据EIA 364-13测试方式 , 测量力的速度达到最大12.5 mm /min.	拔出力的范围: 8N-20 N The connector extraction force shall be the range from 8N to 20N
		EIA 364-13 Measure force at maximum rate of 12.5mm(0.492") per minute	
6-3	耐插拔 Durability	依据EIA 364-09测试方式 插拔10000次循环, 手动插拔速度 200周期/ 小时.	必须满足以下条件后循环测试完成后: 接触电阻(40 mΩ,变化量10 mΩ(Max)后测试) 插入力(5到20N) 拔出力(8到20 N) 产品外观符合需求, 无破损及外形损伤。

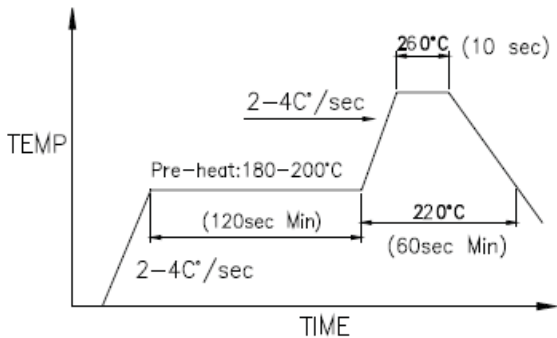
		EIA 364-09 Type C :10000 cycles cycle rate of 200cycles per hour manually	Must meet the following criteria after the cycle test is completed: - Contact resistance ($40\text{m}\Omega$, delta $10\text{m}\Omega$ (Max) after test) - Insertion force (5N to 20N) - Extraction force (8N to 20N) - Visual inspection (no exposed base metal on contacts)
6-4	Cable 摇摆弯曲 Cable Flexing	依据 EIA 364-41 测试方式 电缆组件与尺寸 X =电缆外径 3.7, 并在两个平面 120 度来回 100 个循环。	弯曲过程中没有物理损坏或不连续 1ms 以上应发生在
		EIA 364-41 100 cycles in each of 2 planes 120 degree. Dimension x=3.7x cable diameter	No discontinuity over 1 micorsecond During flexing or physical damage allowed
6-5	Cable 负重测试 Cable Pull-Out	依据 EIA-364-38 测试方式 经受 40 N 轴向负荷为最小为 1 分钟	组件没有损伤和物理损坏
		EIA-364-38 40N steady state axial load for 1 minute	No discontinuity or physical damage allowed
6-6	四轴向测试 4-axes continuity test	8N 拉力一段 10 秒钟;标本必须服从 0° 、 90° 、 180° 、 270° 四个方向。	组件没有间断大于 1us,没有物理损害
		8N tensile force for a period of 10 seconds Min;the specimen must subject to 0° , 90° , 180° , 270° direction. Force to be applied at end of overmold	No discontinuity greater than 1us and no physical damage to the specimen(one cable per test)
		EIA364-18 105° C without applied voltage for 120 hours. 105° C without applied voltage for 72 hours when used as preconditioning in EIA 364-1000. 01	Visual inspection,Test shall be done in sequences defined in EIA364-1000.01

7. 电气特性 ELECTRICAL PERFORMANCE

项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
7-1	绝缘阻抗 Insulation Resistance	依据 EIA 364-21C 测试方式 加100V DC的电压于相邻两端子之间.	未交配和配对连接相邻触点间最低 100mΩ 绝缘电阻
		EIA 364-21C Unmated connectors, apply 100Volts DC between adjacent terminal or ground.	100mΩ minimum (unmated) between adjacent contacts and contacts and shell
7-2	低电接触电阻 Low Level Contact Resistance	依据 EIA 364-23b 测试方式 一组对插好的连接器; 测试开路电压: 20mV max.; 测试短路电流: 100mA max..	接触电阻 (40 mΩ, 测试后变化量 10 mΩ (Max))
		EIA 364-23b 20mV Max. open circuit at 100mA Max.	40mΩ (Max) initial for VBUS and GND contacts and all other contacts; delta 10mΩ (Max) after test
7-3	耐电压 Dielectric withstanding Voltage	依据 EIA 364-20 测试方式 加100V AC的电压于相邻两端子之间 1分钟.	无击穿和飞弧现象
		EIA 364-20 Subjected to 100VAC (RMS) for 1 minute between adjacent terminals	There shall be no breakdown
7-4	接触额定电流 Contact current rating	5.0 A的电流应被共同施加到VBUS引脚和1.25 A通过相应的GND施加到VCONN引脚与返回路径引脚。0.25 A的最小电流也应分别适用于所有的连接PIN脚	当电流被施加到触点上, 温度上升不超过30℃的USB型-C下测试, 当在25℃的环境温度下测得的配套插头和插座的任何点
		EIA364-70 5.0A shall be applied collectively to VBUS pins and 1.25 A applied to the VCONN pin and 0.25 A the other contacts.	When the currents are applied to the contacts, the temperature rise shall not exceed 30 °C at any point on the USB Type-C mated plug and receptacle under test, when measured at an ambient temperature of 25 °C.

8. 环境特性 ENVIROMENT PERFORMACE

项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
8-1	溫度老化測試 temperature Life	依据 EIA 364-17 测试方式 温度寿命试验的温度和持续时间 105℃下 120 小时 温度寿命试验的温度和持续时间对预处理 105℃， 72 小时	外观: 无损伤; 试验后接触电阻最大: 40mΩ
		EIA 364-17 105° C without applied voltage for 120 hours. 105° C without applied voltage for 72 hours when used as preconditioning in EIA 364-1000.01.	Visual inspection,Test shall be done in sequences defined in EIA 364-1000.01.
8-2	冷熱衝擊測試 Thermal Shock	依据 EIA 364-32 方式测试 10 个周期- 55℃+ -85℃。USB 3.0 必须对插配合下 测试	外观没有损害
		EIA 364-32 10 Cycles - 55℃ and +85℃. The USB 3.0 connectors under test must be mated.	There shall be no evidence of any physical damage.
8-3	盐水喷雾 Salt Spray	MIL-STD-202F 101d 条件B测试 对插产品测试环境: 温度: 35±2℃, 盐 水浓度:重量比5±1%, 24 小时. 测试后常温水洗,干燥.	1) 要满足视觉要求, 没有 物理 损害。 2) 要满足的要求, 额外的测 试 中指定在第五节测
		MIL-STD-202F, Method 101D, Test Condition B Subject mated connectors to 24 hours at 35 ℃ with 5%-Salt-solution concentration.	1).Shall meet visual requirement, show no physical damage. 2).Shall meet requirements of additional tests as specified in test sequence in Section 5
	恒温恒湿	依据 EIA 364-31方式测试 周期 25℃士 3℃之间对插产品在 80%士 3% 湿度 和 65℃士 3℃温度 50%士 3% 湿度,时间应 0.5 小 时和停顿时间 0.5 小时。24 个周期	目视检查,测试应在序列中 定义完成 EIA 364 - 1000.01

8-4	Cyclic Temperature and Humidity	EIA 364-31 cycle the connector or socket between $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ at $80\% \pm 3\% \text{RH}$ and $65^{\circ}\text{C} \pm 3^{\circ}\text{C}$ at $50\% \pm 3\% \text{RH}$, ramp times should be 0.5hour and dwell times should be 1.0 hour.24 cycles	Visual inspection,Test shall be done in sequences defined in EIA 364-1000.01.
8-5	焊接性 Solder ability	EIA 364-52 将产品Tail端浸入 $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 的溶锡中 3 ± 1 秒	沾锡面积 95%以上, 无针孔。
		EIA 364-52 soldered at temperature $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ at a rate of $25.4\text{mm} \pm 6.35\text{mm}$ per second for in immersion duration 5s.	solder shall cover a minimum of 95% of the surface being immersed
8-6	耐回流焊热 Resistance to Reflow Soldering Heat		外观应无损伤(端子不应松动, 塑胶无变形, 起泡, 溶胶等不良) No damage.
8-7	高温保存 Temperature Life	EIA 364-17A 测试3 条件 A 对插产品测试环境: 温度: 80°C ,时间: 250 小时. 测试后常温水洗,干燥.	1) 要满足视觉要求, 没有物理损害。 2) 要满足的要求, 额外的测试中指定在第五节测
		EIA 364-17 Test Condition 3 Method A, Subject mated connectors to temperature life at 80°C for 250hours	1).Shall meet visual requirement, show no physical damage. 2).Shall meet requirements of additional tests as specified in test sequence in Section 5

浙江富港电子有限公司 RoHS2.0 及 REACH 符合性自我声明表

ZHEJIANG FUGANG ELECTRONICS CO., LTD RoHS2.0 and REACH statement ofconformity

产品型号： TYPE-C USB 插座 ST-C-1030022-16P-L10.0

材料名称 Material name	有毒有害物质或元素 toxic and hazardous substances or elements										备注 Remarks
	铅 (Pb)	汞 (Hg)	镉(Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二丁基酯 (DBP)	邻苯二甲酸甲 苯基丁酯 (BBP)	邻邻苯二甲酸二 (2-乙基己基) 酯 (DEHP)	邻苯二甲酸二 异丁酯 (DIBP)	
底座	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
PIN 针/外壳	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
镀镍	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
镀金	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
.....											
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○：表示该有毒有害物质在该部件所有均质材料中的含量均在 2011/65/EU 规定的限量要求以下。

○： It indicates that the content of hazardous substance in all homogeneous materials of the component is below the limit requirement of 2011/65 / EU.

×：表示该有毒有害物质至少在 该部件的某一均质材料中的含量超出 2011/65/EU 规定的限量要求。

×： It indicates that the hazardous substances are in excess of the limits requirement of 2011/65 / EU in at least one homogeneous material of the part.

(供应商应将其原材料按要求进行拆分，并按照此表格进行详细标注,对不能满足标准要求的零部件进行具体的原因描述)

(The supplier shall separate its raw materials according to the requirements and mark it in detail in accordance with this form, and describe the specific reasons for the parts that can not meet the standard requirements)

整体部件 Integral part			是否符合(EC) No 1907/2006 标准要求 Compliance with (EC) No 1907/2006 standard requirements or not
	高关注物质(SVHC)		是
	禁止和限制物质 “附件 17” Prohibited and Restricted Substances "Annex 17"		是
原材料部件 Raw material components			是否符合(EC) No 1907/2006 标准要求 Compliance with (EC) No 1907/2006 standard requirements or not
	基座	高关注物质(SVHC)	是
		禁止和限制物质 “附件 17” Prohibited and Restricted Substances "Annex 17"	是
	信号针/ 外壳	高关注物质(SVHC)	是
		禁止和限制物质 “附件 17” Prohibited and Restricted Substances "Annex 17"	是
	电镀	高关注物质(SVHC)	是
		禁止和限制物质 “附件 17” Prohibited and Restricted Substances "Annex 17"	是

注：

根据(EC) No 1907/2006 标准要求进行管控 SVHC（高关注物质）及禁止和限制物质,如果在标准值以内填写是，反之则填写否。

1. Control SVHC (high concern substances) and prohibited and restricted substances according to (EC) No 1907/2006 standards, fill in Yes if it's in the standard, otherwise fill in No.

2、请在页面加盖公司印章。

2. Please stamp the company seal on the page.

1、

Test Report

No.: SZXEC24000808723

Date: Apr 01, 2024

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Client Name: ZHEJIANG FUGANG ELECTRONICS CO.,LTD

Client Address: THE SECOND INDUSTRIAL PARK,DANXI TOWN,YUEQING CITY, ZHEJIANG PROVINCE

Sample Name: LCP Plastic

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

SGS Job No.: SZP24-011334

Sample Receiving Date: Mar 22, 2024

Testing Period: Mar 22, 2024 ~ Mar 28, 2024

Test Requested: Select 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).

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

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

Tina

Tina Fan
Approved Signatory

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64DB15DA



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Shenzhen Branch Testing Center Chemical Laboratory

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Test Report

No.: SZXEC24000808723

Date: Apr 01, 2024

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A2	SZX24-0008087-0001.C002	Yellow plastic grains

Remarks:

- (1) 1 mg/kg = 1 ppm = 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 (PBB), Polybrominated diphenyl ethers (PBDE), 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+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A2
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybromobiphenyl (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	5	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	5	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	5	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	5	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	5	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	5	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	5	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	5	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	5	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether (PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	5	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	5	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	5	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	5	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	5	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	5	ND
Heptabrominated diphenyl ether (HeptaBDE)	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit(s)	MDL	A2
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	5	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	5	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	5	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (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.

Remark: Results & photo(s) of this report refer to test report SZXEC24000808720.

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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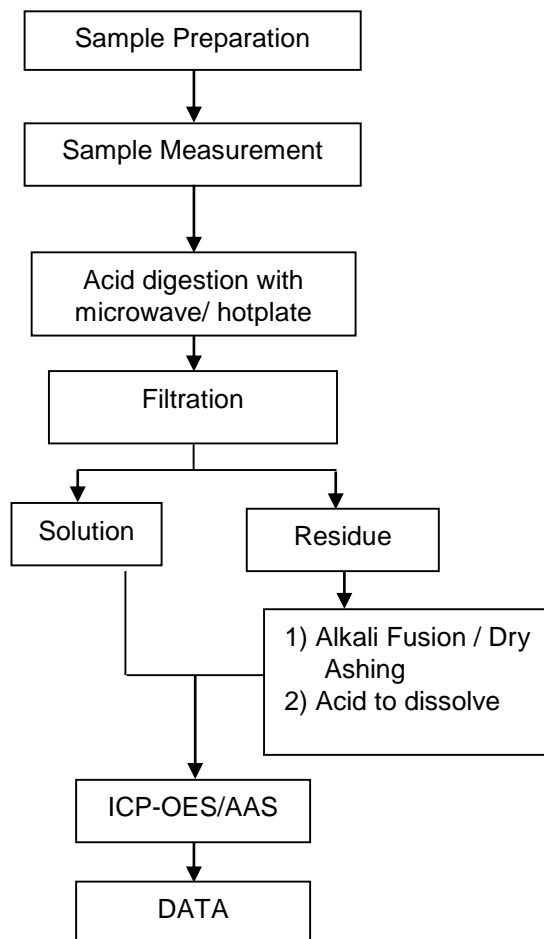
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Elements Testing Flow Chart

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



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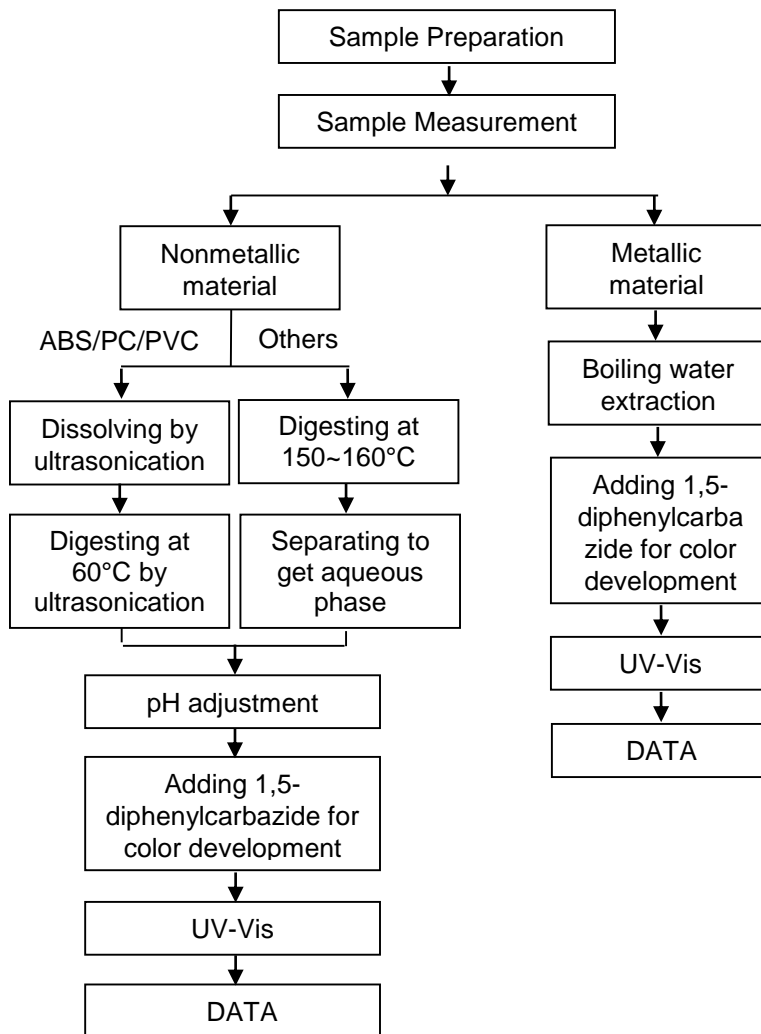
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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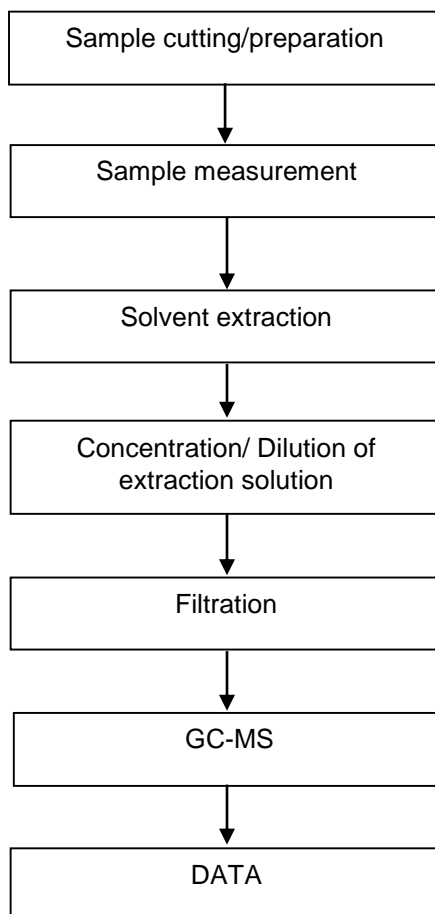
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PBB/PBDE Testing Flow Chart



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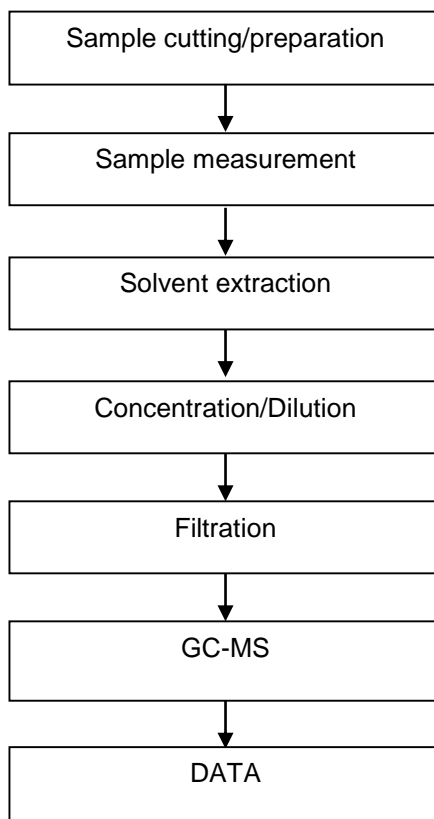
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Phthalates Testing Flow Chart



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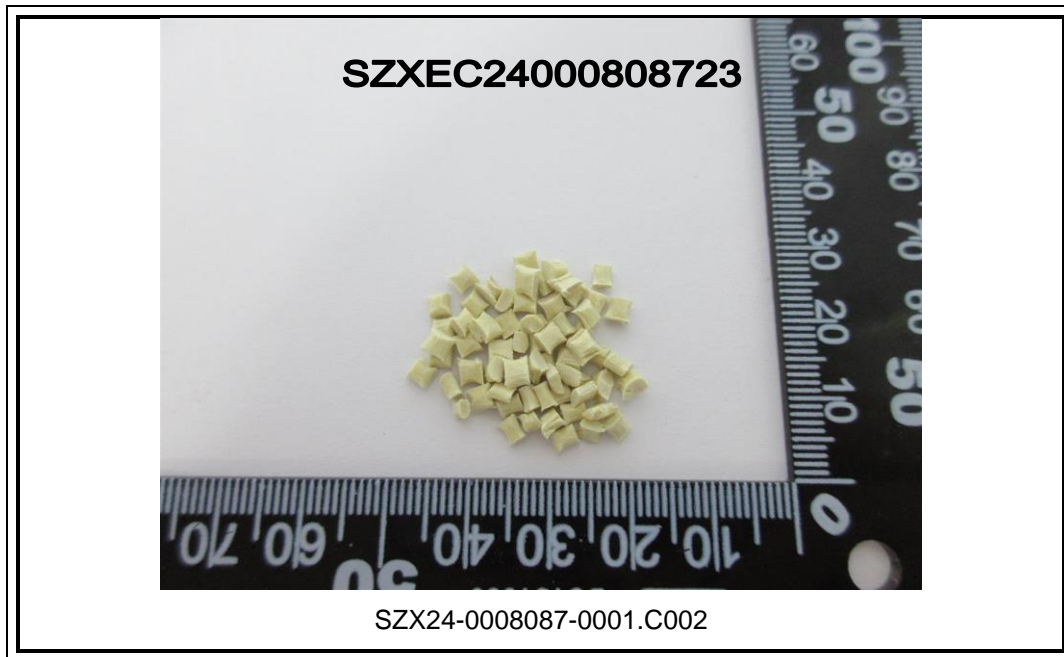
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Sample Photo:



SGS authenticate the photo on original report only

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Test Report

No.: SZXEC24000811615

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Client Name: ZHEJIANG FUGANG ELECTRONICS CO.,LTD

Client Address: THE SECOND INDUSTRIAL PARK,DANXI TOWN,YUEQING CITY, ZHEJIANG PROVINCE

Sample Name: Brass

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

SGS Job No.: SZP24-011334

Sample Receiving Date: Mar 22, 2024

Testing Period: Mar 22, 2024 ~ Mar 28, 2024

Test Requested: Select 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).

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

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

Tina

Tina Fan
Approved Signatory

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Shenzhen Branch Testing Laboratory

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Test Report

No.: SZXEC24000811615

Date: Apr 01, 2024

Page 2 of 5

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A2	SZX24-0008116-0001.C002	Brass metal

Remarks:

- (1) 1 mg/kg = 1 ppm = 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+AMD1:2017, IEC 62321-5:2013 and IEC 62321-7-1:2015, analysis was performed by ICP-OES/AAS and UV-Vis.

Test Item(s)	Limit	Unit(s)	MDL	A2
Lead (Pb)	1000	mg/kg	2	33
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes:

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

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

Remark: Results & photo(s) of this report refer to test report SZXEC24000811613.

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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Test Report

No.: SZXEC24000811615

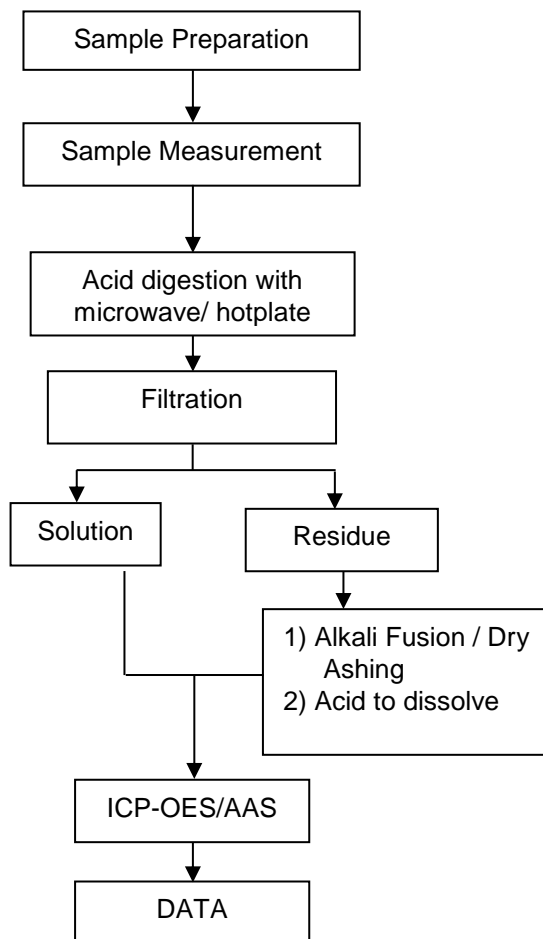
Date: Apr 01, 2024

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Elements Testing Flow Chart

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



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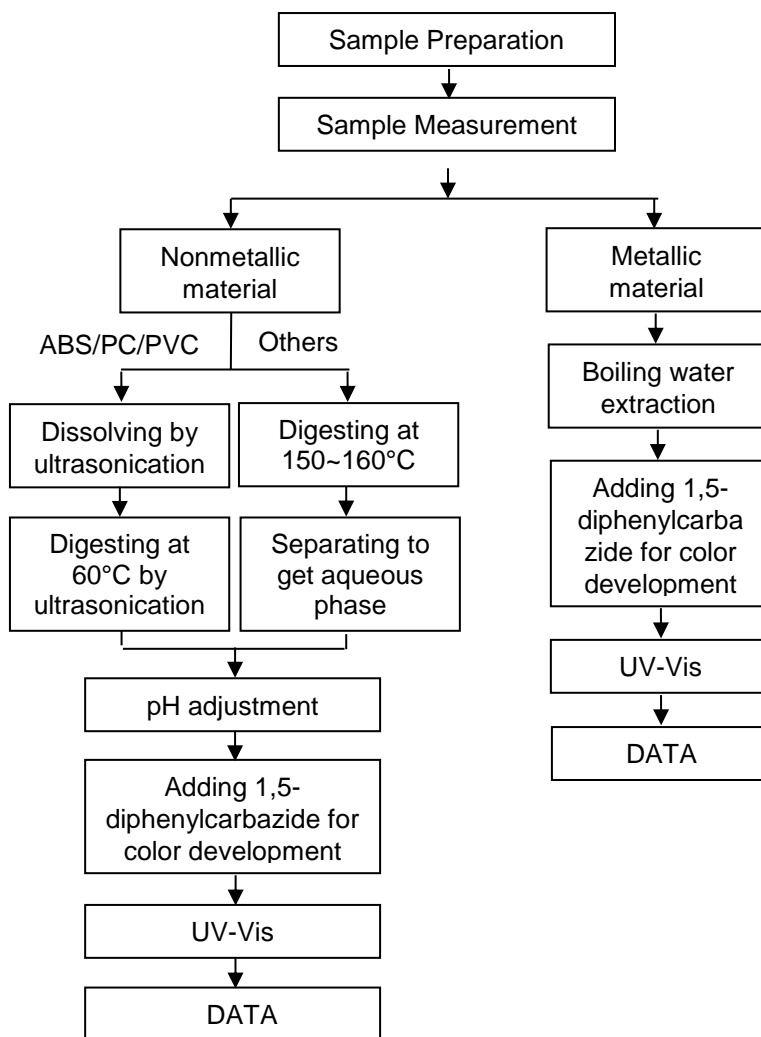
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No.: SZXEC24000811615

Date: Apr 01, 2024

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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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Test Report

No.: SZXEC24000811615

Date: Apr 01, 2024

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Sample Photo:



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Shenzhen Branch Testing Center Chemical Laboratory

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Test Report

No.: SZXEC24000811639

Date: Apr 01, 2024

Page 1 of 5

Client Name: ZHEJIANG FUGANG ELECTRONICS CO.,LTD

Client Address: THE SECOND INDUSTRIAL PARK,DANXI TOWN,YUEQING CITY, ZHEJIANG PROVINCE

Sample Name: Stainlesssteel

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

SGS Job No.: SZP24-011334

Sample Receiving Date: Mar 22, 2024

Testing Period: Mar 22, 2024 ~ Mar 28, 2024

Test Requested: Select 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).

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

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

Tina

Tina Fan

Approved Signatory

scan to see the report



55B73C20



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Test Report

No.: SZXEC24000811639

Date: Apr 01, 2024

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A4	SZX24-0008116-0001.C004	Silver-gray metal

Remarks:

- (1) 1 mg/kg = 1 ppm = 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+AMD1:2017, IEC 62321-5:2013 and IEC 62321-7-1:2015, analysis was performed by ICP-OES/AAS and UV-Vis.

Test Item(s)	Limit	Unit(s)	MDL	A4
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes:

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

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

Remark: Results & photo(s) of this report refer to test report SZXEC24000811637.

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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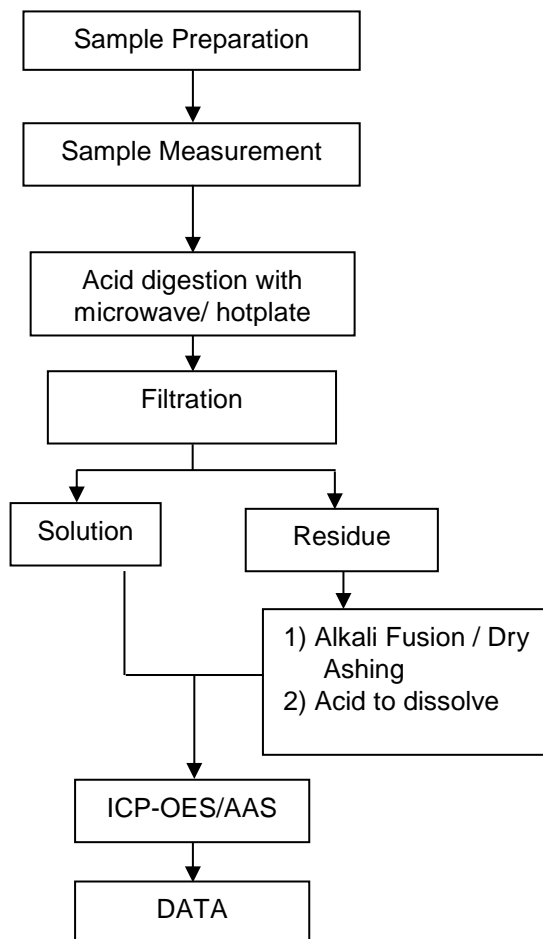
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Elements Testing Flow Chart

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



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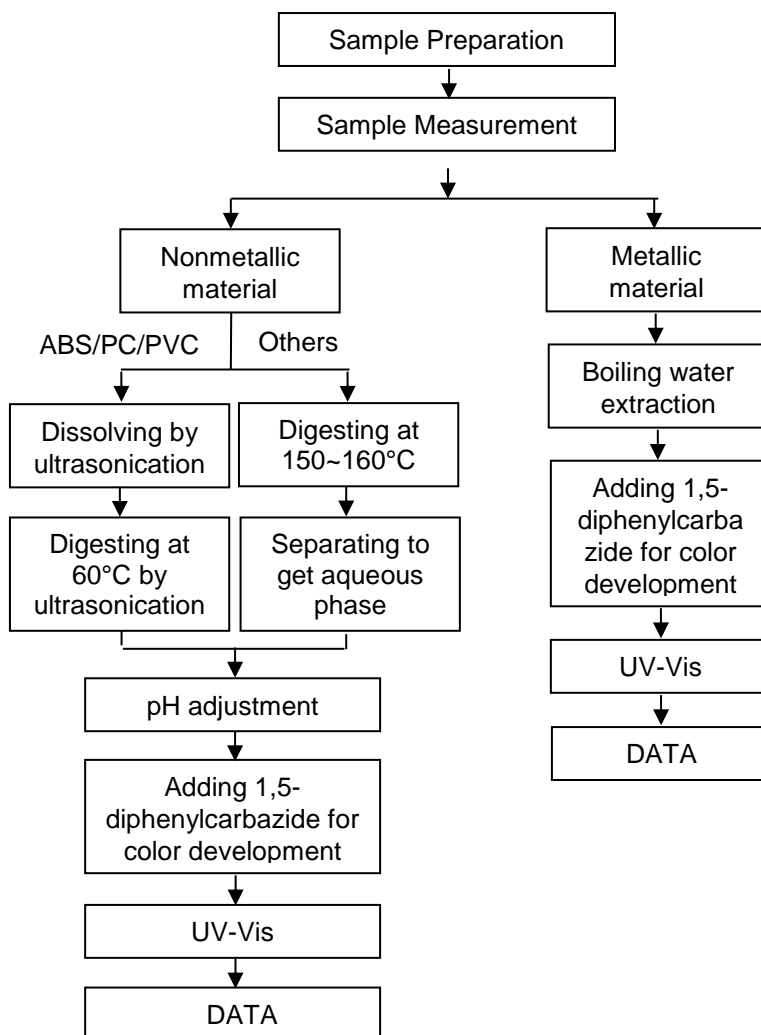
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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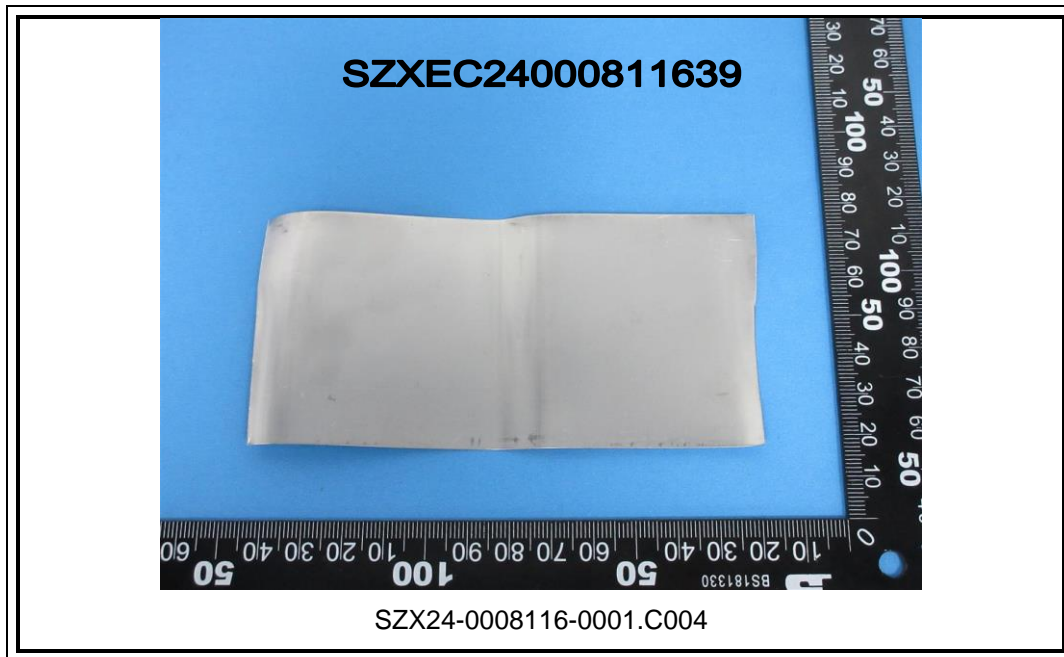
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Sample Photo:



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