

## Test Report

No. TAOEC2307955115

Date: 14 Nov 2023

Page 1 of 11

Client Name : JINAN JINGHENG ELECTRONICS CO., LTD.

Client Address : NO.13856 JINGSHIXI ROAD,CHANGQING,JINAN,SHANDONG,CHINA

Sample Name : CHIP

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

SGS Job No. : QDP23-001753 - QD  
 Date of Sample Received : 30 Oct 2023  
 Testing Period : 30 Oct 2023 - 07 Nov 2023  
 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
Halogen	See Results
Element(s)	See Results
Alkanes C14-C17, chloro (Medium-chain Chlorinated Paraffins) (MCCP)	See Results
Tetrabromobisphenol A (TBBP-A)	See Results

Signed for and on behalf of  
 SGS-CSTC Standards Technical Services (Qingdao) Co., Ltd.

Justin

Zhang Bo, Justin  
 Approved Signatory

scan to see the report



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## Test Report

No. TAOEC2307955115

Date: 14 Nov 2023

Page 2 of 11

Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	TAO23-079551.008	silvery chip

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 62321-5:2013, IEC 62321-4:2013+AMD1:2017, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	008
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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## Test Report

No. TAOEC2307955115

Date: 14 Nov 2023

Page 3 of 11

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
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.

### Halogen

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

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>
Fluorine (F)	mg/kg	20	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

### Element(s)

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

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>
Beryllium (Be)	mg/kg	5	ND

### Alkanes C14-C17, chloro (Medium-chain Chlorinated Paraffins) (MCCP)



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## Test Report

No. TAOEC2307955115

Date: 14 Nov 2023

Page 4 of 11

Test Method : With reference to ISO 22818:2021, analysis was performed by GC-NCI-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>
Medium Chain Chlorinated Paraffin(C14-C17) (MCCP)	mg/kg	50	ND

### Tetrabromobisphenol A (TBBP-A)

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

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

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.

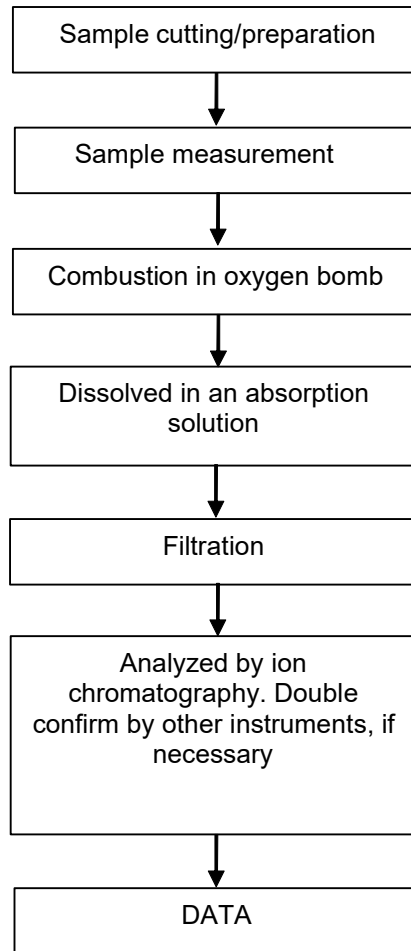


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### Halogen Testing Flow Chart



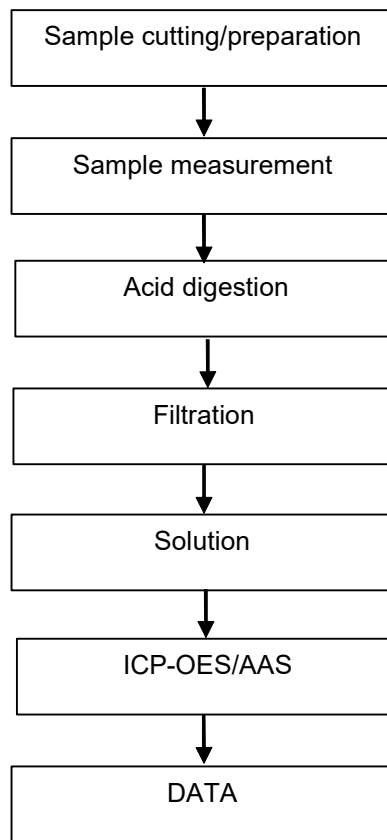
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### Elementary Testing Flow Chart

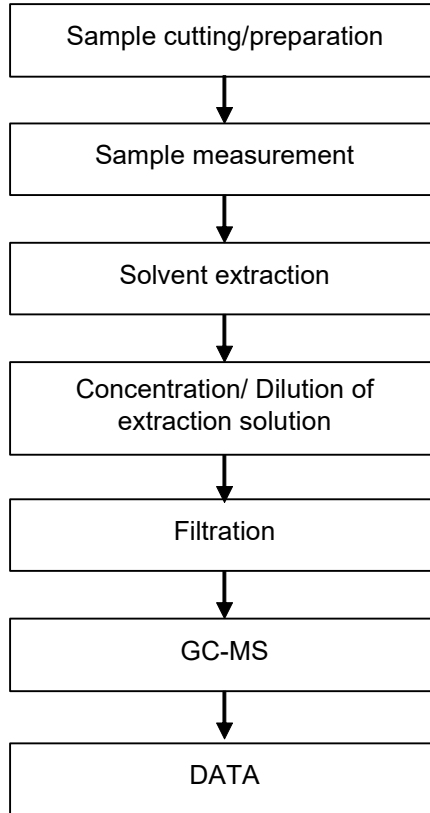


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**PBBs/PBDEs Testing Flow Chart**

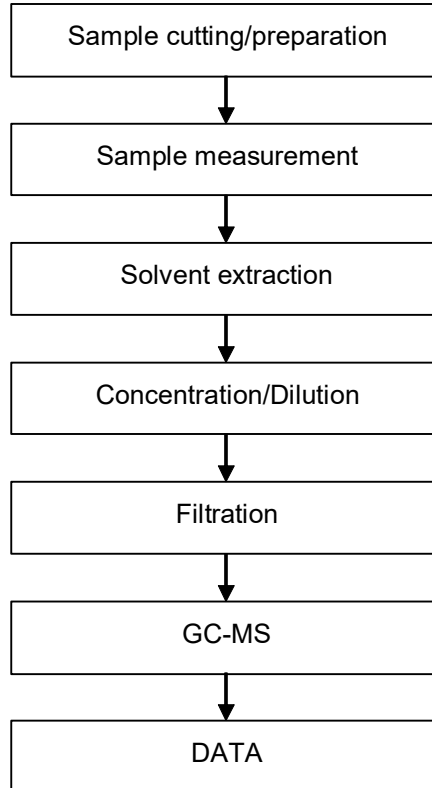


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### Phthalates Testing Flow Chart



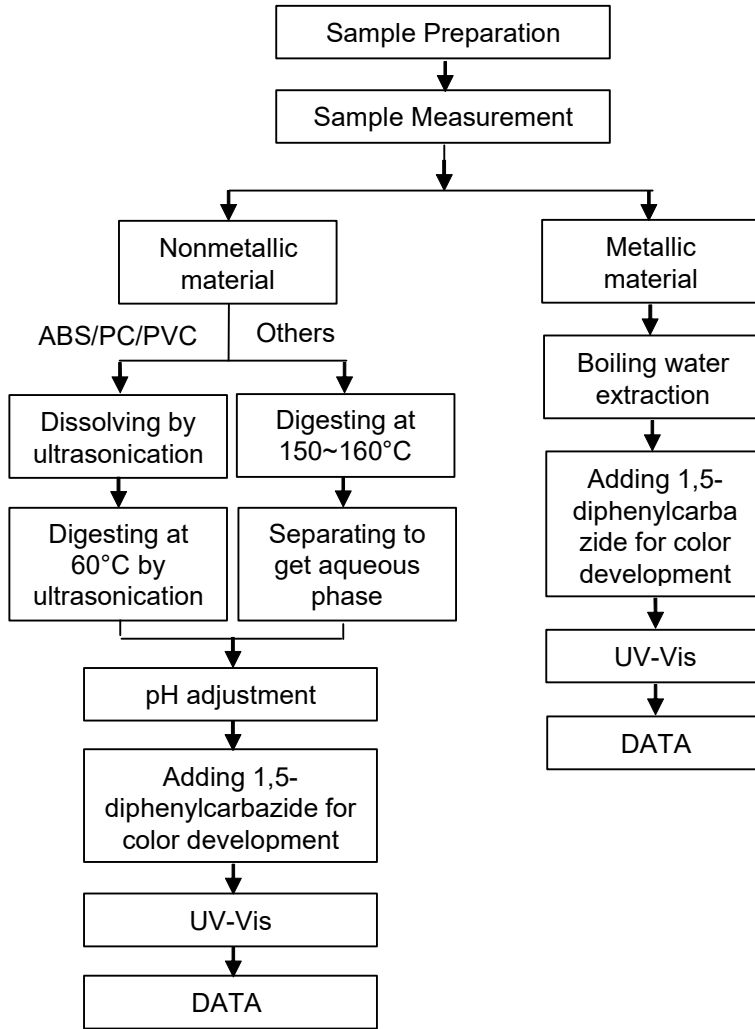
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**Hexavalent Chromium (Cr(VI)) Testing Flow Chart**



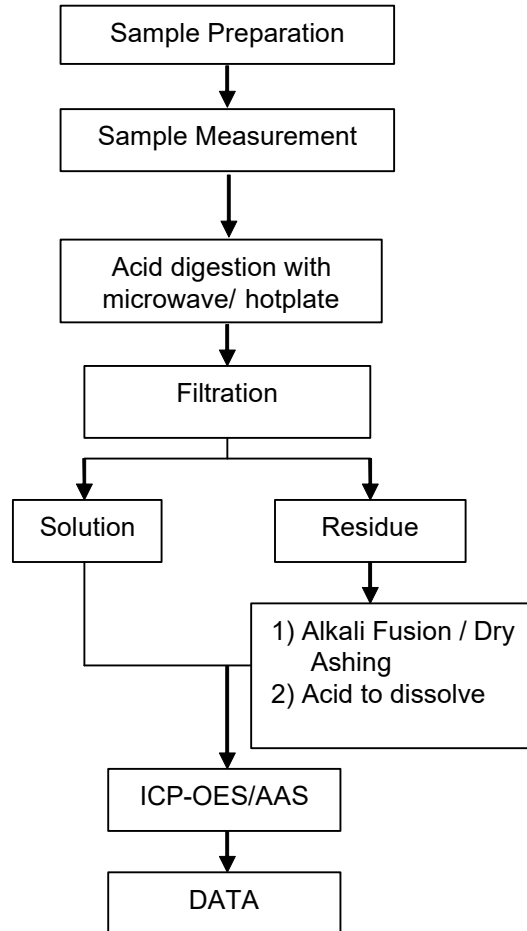
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**Elements (IEC62321) Testing Flow Chart**

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



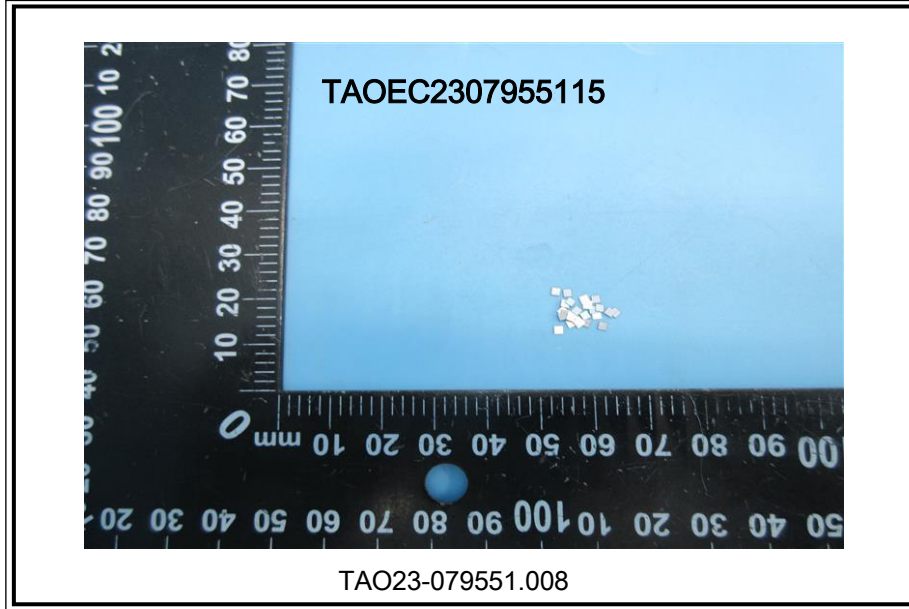
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