

## Test Report

No. NGBML2104965105

Date: 02 Nov 2021

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ZHEJIANG HUANGYAN XINQIAN ELECTRONIC FITTINGS FACTORY  
SHUANGFENG INDUSTRIAL DISTRICT XINQIAN TOWN HUANGYAN ZHEJIANG

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

SGS Job No. : NBIN2110012543PC - NB  
Material and Mark : Pb92.5Sn5Ag2.5  
Material No. : P01280  
Date of Sample Received : 18 Oct 2021  
Testing Period : 18 Oct 2021 - 02 Nov 2021  
Test Requested : Selected test(s) as requested by client.  
Test Method : Please refer to next page(s).  
Test Results : Please refer to next page(s).

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

Ashley Zhang

Ashley Zhang  
Approved Signatory

scan to see the report



NGBML2104965105



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	NGB21-049651.001	SILVERY METAL PIECE

Remarks :

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

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

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	928153*▲
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm <sup>2</sup>	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
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Bis(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

### Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series  
[https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25).
- (3) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>. 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/cm<sup>2</sup>). The coating is considered a non-Cr(VI) based coating  
 c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> 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.
- (4) 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.
- (5) \*The reported result is for reference only
- (6) ▲ = According to the declaration from the client, Lead (Pb) in sample is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(a)]: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

### Halogen

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

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



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**Element(s)**

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

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Arsenic (As)	mg/kg	10	ND
Phosphorus (P)	mg/kg	20	ND
Antimony (Sb)	mg/kg	10	ND
Beryllium (Be)	mg/kg	5	ND

**Phthalates Content**

Test Method : With reference to IEC62321-8:2017, analyzed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.005	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.005	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.005	ND
Bis(2-methoxyethyl)Phthalate (DMEP)	117-82-8	% (w/w)	0.005	ND
Diisopentyl Phthalate (DIPP)	605-50-5	% (w/w)	0.005	ND
n-pentyl Isopentyl Phthalate (nPiPP)	776297-69-9	% (w/w)	0.005	ND
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters;	68515-51-5 /68648-93-1	% (w/w)	0.005	ND
Di-n-pentyl Phthalate (DnPP)	131-18-0	% (w/w)	0.005	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.005	ND

**Hexabromocyclododecane (HBCDD)**

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



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



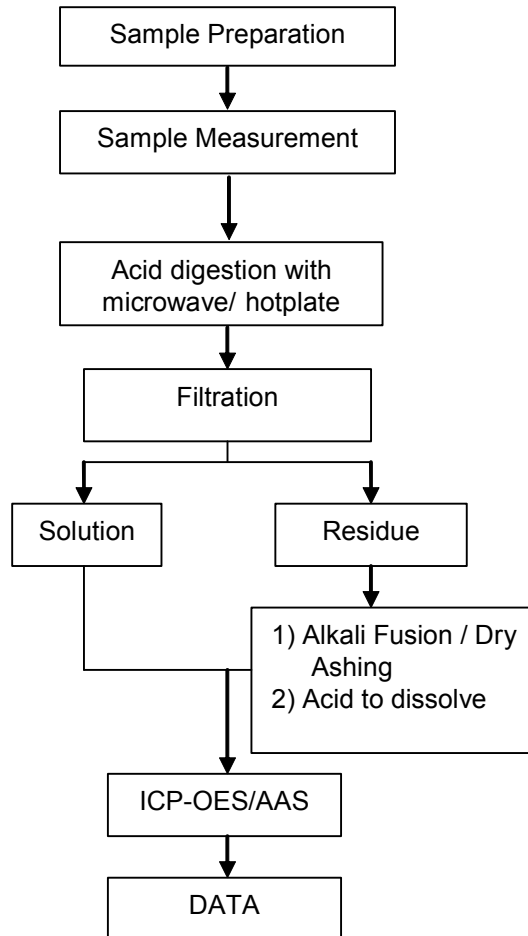
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**Elements (IEC62321) Testing Flow Chart**

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

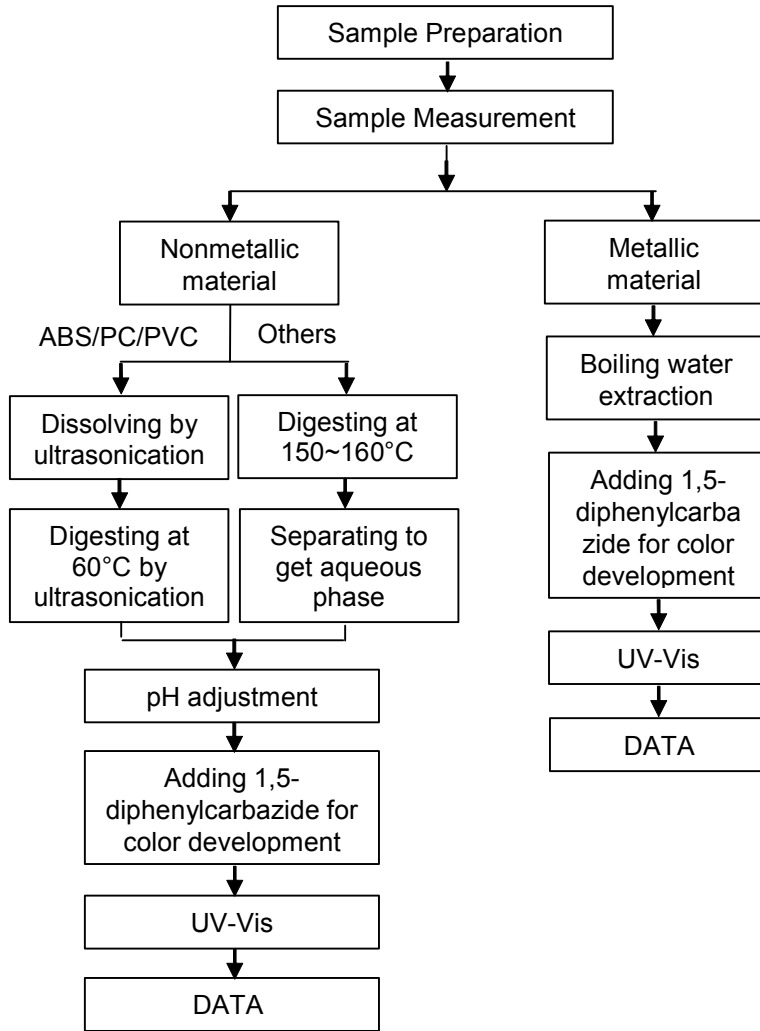


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**Hexavalent Chromium (Cr(VI)) Testing Flow Chart**

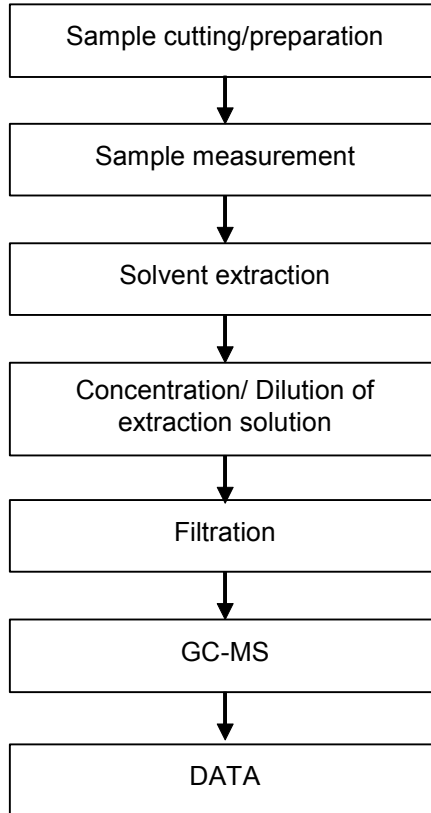


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### PBBs/PBDEs Testing Flow Chart



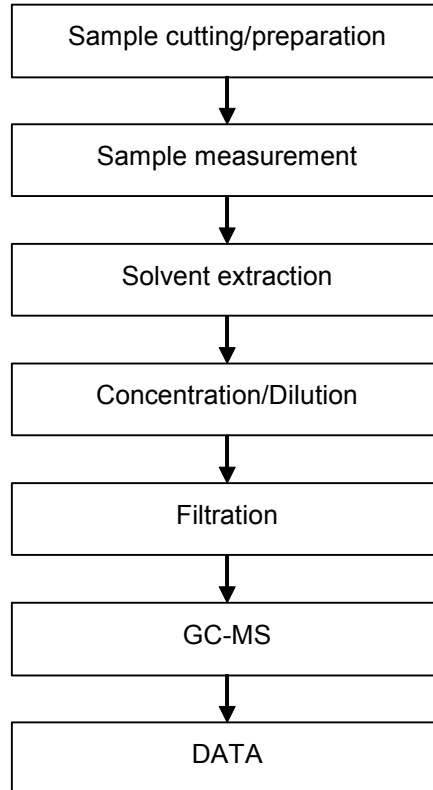
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### Phthalates Testing Flow Chart

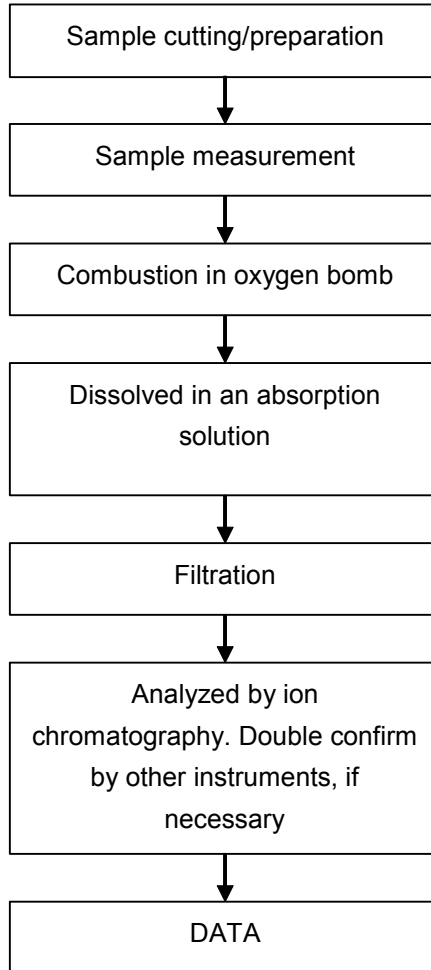


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**Halogen Testing (oxygen bomb) Flow Chart**

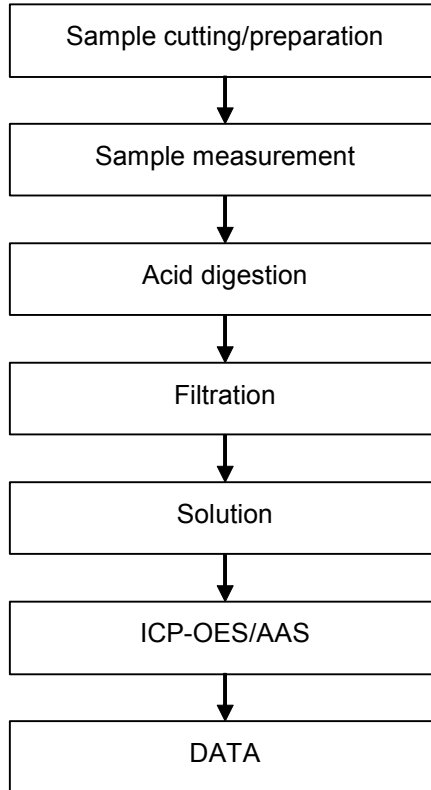


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### Elements Testing Flow Chart

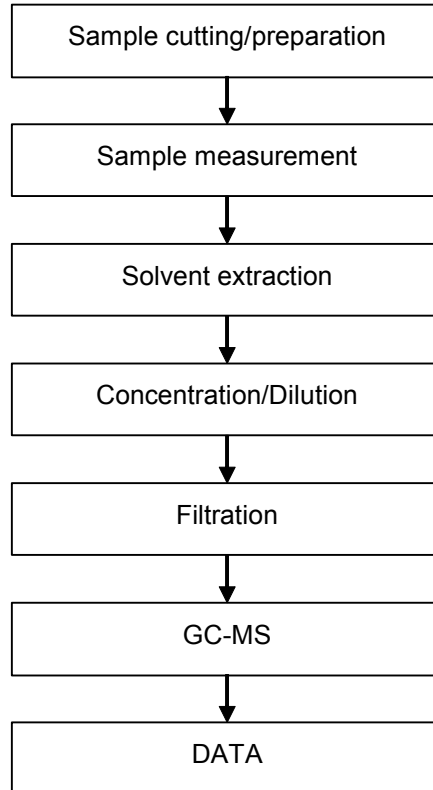


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### HBCDD Testing Flow Chart



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