

## Test Report

No.: CANEC24024280503

Date: Nov 07, 2024

Page 1 of 7

Client Name: SIGMA TIN ALLOY CO.,LTD.

Client Address: B AREA,3#,GUANGHUI INDUSTRIAL ZONE,TONGSHA TECHNOLOGY PARK,  
EASTCITY DISTRICT, DONGGUAN CITY,GUANGDONG PROVINCE

Sample Name: LEAD FREE SOLDER BAR

Model No.: EB993A

Client Ref. Information: EB993A,EB990A  
EB998A,EB983A,EB965A,EB995A,EB955A,EB970A,EB960A,EB8812,EB4258  
,AO1000,NI 10;T100,T100e,T100Pe, T100P,EB965E;

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

SGS Job No.: SZP24-048024

Sample Receiving Date: Nov 01, 2024

Testing Period: Nov 01, 2024 ~ Nov 07, 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. Guangzhou Branch

*Dongyu Xie*

Dongyu Xie

Approved Signatory

scan to see the report



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No.: CANEC24024280503

Date: Nov 07, 2024

Page 2 of 7

### Test Result(s):

#### Test Part Description:

| SN ID | Sample No. | SGS Sample ID           | Description   |
|-------|------------|-------------------------|---------------|
| SN1   | A1         | CAN24-0242805-0001.C001 | Silvery 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, 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 62321-7-1:2015 and IEC 62321-12:2023, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

| Test Item(s)                              | Limit | Unit(s)            | MDL  | A1 |
|---|-------|--------------------|------|----|
| Lead (Pb)                                 | 1000  | mg/kg              | 2    | 51 |
| Mercury (Hg)                              | 1000  | mg/kg              | 2    | ND |
| Cadmium (Cd)                              | 100   | mg/kg              | 2    | ND |
| Hexavalent Chromium (Cr(VI))▼             | -     | µg/cm <sup>2</sup> | 0.10 | ND |
| Polybrominated biphenyls (PBB)            | 1000  | mg/kg              | -    | ND |
| Monobrominated biphenyl (MonoBB)          | -     | mg/kg              | 25   | ND |
| Dibrominated biphenyl (DiBB)              | -     | mg/kg              | 25   | ND |
| Tribrominated biphenyl (TriBB)            | -     | mg/kg              | 25   | ND |
| Tetrabrominated biphenyl (TetraBB)        | -     | mg/kg              | 25   | ND |
| Pentabrominated biphenyl (PentaBB)        | -     | mg/kg              | 25   | ND |
| Hexabrominated biphenyl (HexaBB)          | -     | mg/kg              | 25   | ND |
| Heptabrominated biphenyl (HeptaBB)        | -     | mg/kg              | 25   | ND |
| Octabrominated biphenyl (OctaBB)          | -     | mg/kg              | 25   | ND |
| Nonabrominated biphenyl (NonaBB)          | -     | mg/kg              | 25   | ND |
| Decabrominated biphenyl (DecaBB)          | -     | mg/kg              | 25   | ND |
| Polybrominated diphenyl ethers (PBDE)     | 1000  | mg/kg              | -    | ND |
| Monobrominated diphenyl ether (MonoBDE)   | -     | mg/kg              | 25   | ND |
| Dibrominated diphenyl ether (DiBDE)       | -     | mg/kg              | 25   | ND |
| Tribrominated diphenyl ether (TriBDE)     | -     | mg/kg              | 25   | ND |
| Tetrabrominated diphenyl ether (TetraBDE) | -     | mg/kg              | 25   | ND |
| Pentabrominated diphenyl ether (PentaBDE) | -     | mg/kg              | 25   | ND |
| Hexabrominated diphenyl ether (HexaBDE)   | -     | mg/kg              | 25   | ND |
| Heptabrominated diphenyl ether (HeptaBDE) | -     | mg/kg              | 25   | ND |



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## Test Report

No.: CANEC24024280503

Date: Nov 07, 2024

Page 3 of 7

| Test Item(s)                            | Limit | Unit(s) | MDL | A1 |
|---|-------|---------|-----|----|
| Octabrominated diphenyl ether (OctaBDE) | -     | mg/kg   | 25  | ND |
| Nonabrominated diphenyl ether (NonaBDE) | -     | mg/kg   | 25  | ND |
| Decabrominated diphenyl ether (DecaBDE) | -     | mg/kg   | 25  | ND |
| Di-2-Ethyl Hexyl 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) ▼ =
  - 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.

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.



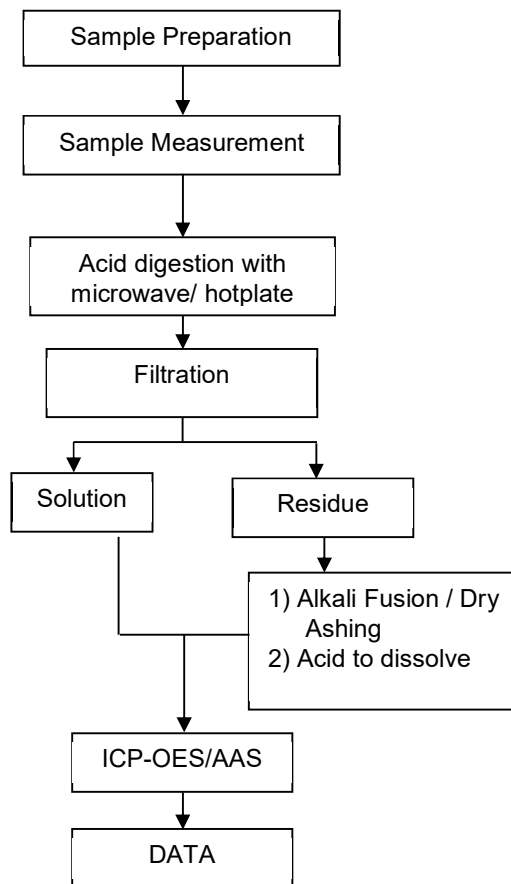
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### Elements Testing Flow Chart

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



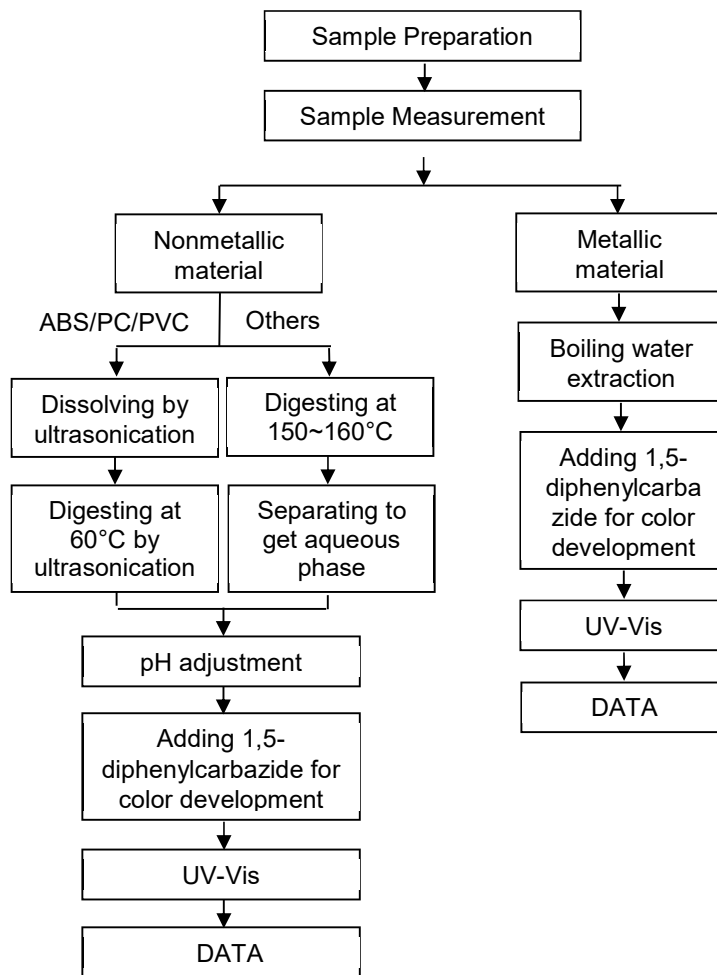
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**Hexavalent Chromium (Cr(VI)) Testing Flow Chart**

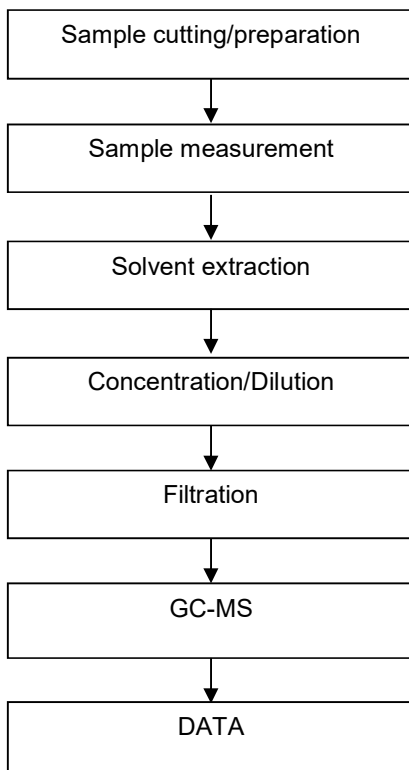


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**PBB/PBDE/Phthalates Testing Flow Chart**



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No.: CANEC24024280503

Date: Nov 07, 2024

Page 7 of 7

Sample Photo:



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\*\*\* End of Report \*\*\*



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