

SINGAPORE ASAHI CHEMICAL & SOLDER INDUSTRIES PTE LTD  
47 PANDAN ROAD, SINGAPORE 609288

The following sample(s) was/were submitted and identified by the client as:

Sample Name : Sn99.3Cu0.7

SGS Order No. : 10581925  
Sample ID : SGA24-0000302-0006  
Sample Receiving Date : 25-Apr-2024  
Testing Period : 25-Apr-2024 to 06-May-2024

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)

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, 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 Testing & Control Services Singapore Pte Ltd



Y C Tham (Ms)  
Technical Manager, Multi-Lab  
FOLDER NUMBER : SGA24-0000302

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**Test Result(s) :**

Sample Description : SILVER COLOR METAL RIBBON

Test Item(s)	Unit	Method	Results	MDL	Limit
Lead(Pb)	mg/kg	With reference to IEC 62321-5:2013. Analysis was performed by ICP/OES	29	2	<1000
Mercury(Hg)	mg/kg	With reference to IEC 62321-4 :2013 +AMD1:2017. Analysis was performed by ICP/OES	ND	2	<1000
Cadmium(Cd)	mg/kg	With reference to IEC 62321-5:2013. Analysis was performed by ICP/OES	ND	2	<100
Hexavalent Chromium (Cr(VI)) ▼	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1:2015. Analysis was performed by UV-Vis Spectrometry.	ND	0.10	-
Polybromobiphenyl (PBBs)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	-	<1000
Monobromobiphenyl (MonoBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Dibromobiphenyl (DiBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Tribromobiphenyl (TriBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Tetrabromobiphenyl (TetraBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Pentabromobiphenyl (PentaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Hexabromobiphenyl (HexaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Heptabromobiphenyl (HeptaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Octabromobiphenyl (OctaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Nonabromobiphenyl (NonaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Decabromobiphenyl (DecaBB)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Polybromodiphenyl ether(PBDEs)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	-	<1000

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Test Item(s)	Unit	Method	Results	MDL	Limit
Monobromodiphenylether (MonoBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Dibromodiphenylether (DiBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Tribromodiphenylether (TriBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Tetrabromodiphenylether (TetraBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Pentabromodiphenylether (PentaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Hexabromodiphenylether (HexaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Heptabromodiphenylether (HeptaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Octabromodiphenylether (OctaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Nonabromodiphenylether (NonaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Decabromodiphenylether (DecaBDE)	mg/kg	With reference to IEC62321-6 :2015. Analysis was performed by GC/MS	ND	5	-
Bis-(2-ethylhexyl) Phthalate(DEHP)	mg/kg	With reference to IEC62321-8 :2017. Analysis was performed by GC/MS	ND	50	<1000
Benzyl Butyl Phthalate(BBP)	mg/kg	With reference to IEC62321-8 :2017. Analysis was performed by GC/MS	ND	50	<1000
Dibutyl Phthalate(DBP)	mg/kg	With reference to IEC62321-8 :2017. Analysis was performed by GC/MS	ND	50	<1000
Diisobutyl Phthalate(DIBP)	mg/kg	With reference to IEC62321-8 :2017. Analysis was performed by GC/MS	ND	50	<1000

**Remarks:**

- (1) mg/kg = ppm ; 0.1wt% = 1000ppm
- (2) ND = Not Detected (Less than MDL)
- (3) MDL = Method Detection Limit
- (4) "-" = Not regulated

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**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. According to this rule, the judgement of conformity is based on the comparing test results with limits.

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Sample Photo:



**SGA24-0000302-0006**

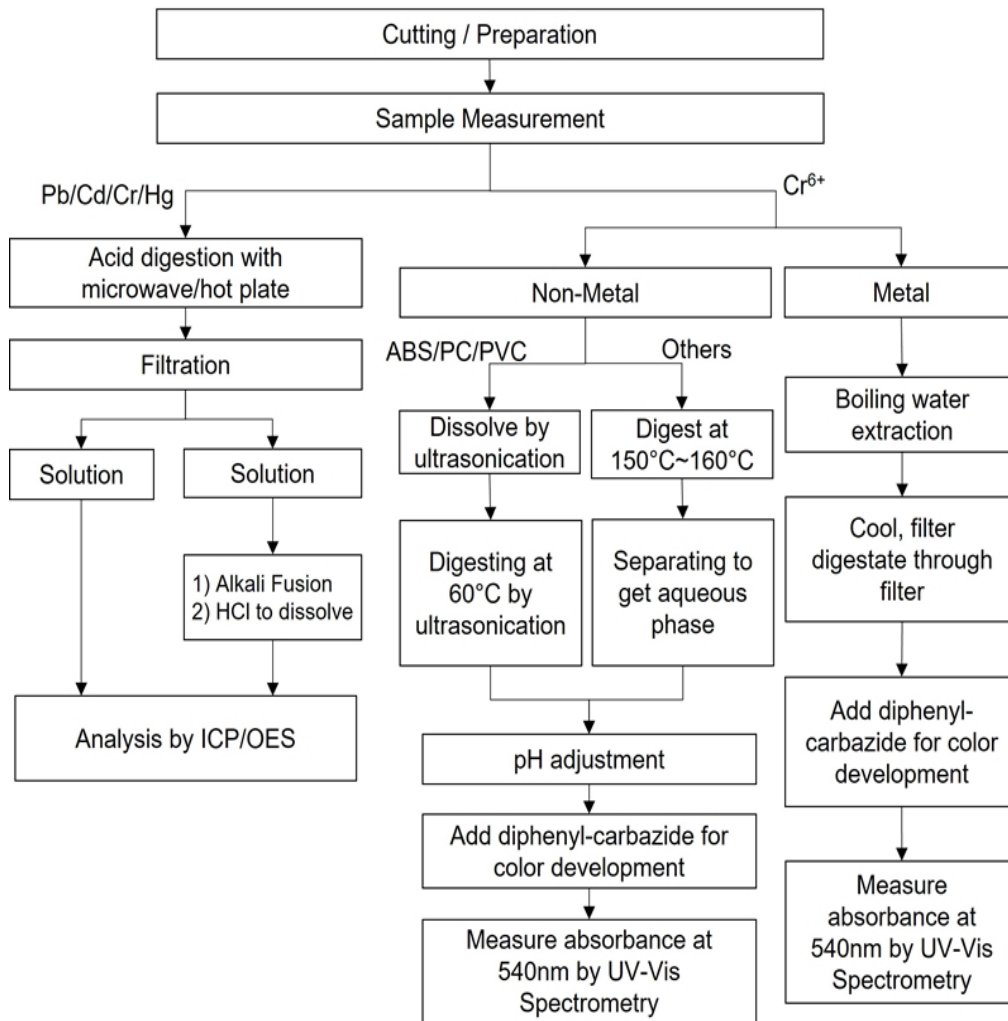
SGS authenticate the photo on original report only

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### Analytical flow chart - Heavy metals

Sample received was totally dissolved by preconditioning method.  
(Cr<sup>6+</sup> test method excluded)

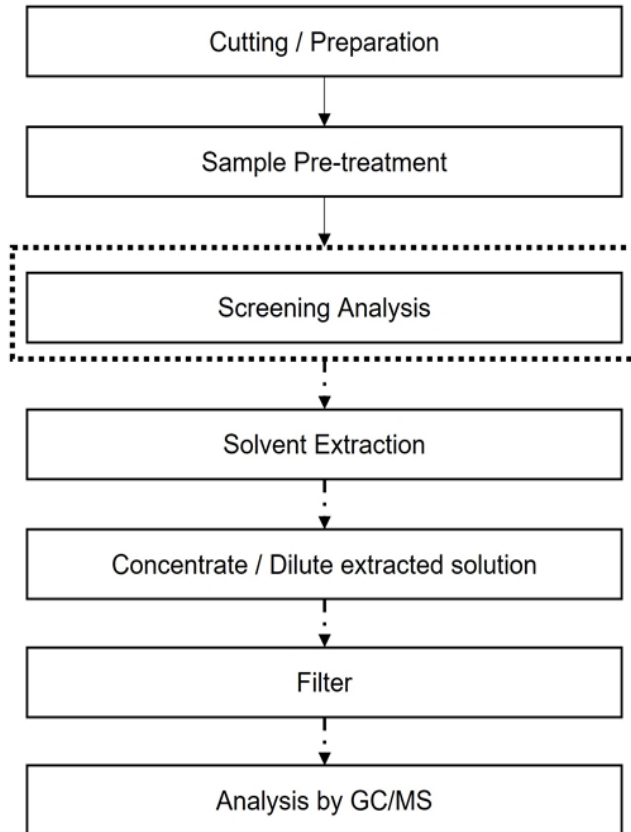


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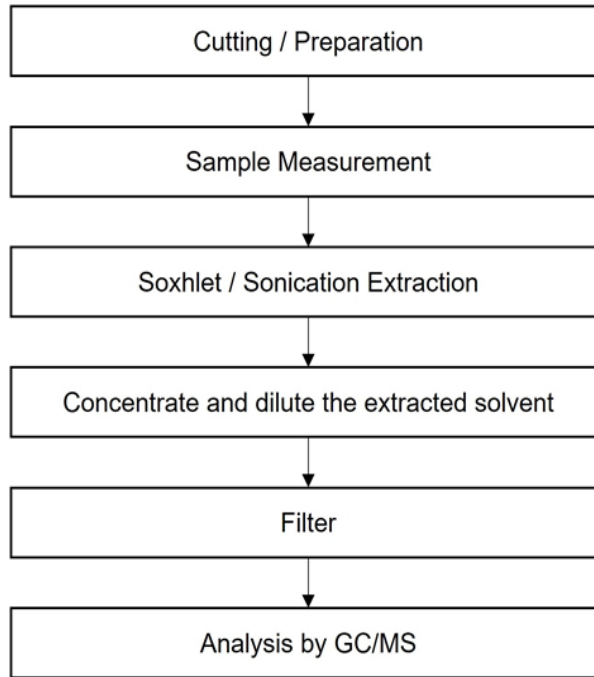
**Analytical flow chart - PBBs and PBDEs**

First Testing Process      ———→  
 Optional screen process    ······→  
 Confirmation process      - - - ->



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**Analytical flow chart – Phthalates (IEC 62321)**

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

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