

Heraeus Materials Singapore Pte Ltd
No. 2 Corporation Road, #06-15/16/17 Corporation Place, Singapore 618494

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

Sample Description : SnAg25Sb10 Solder Wire

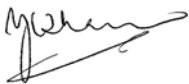
Sample Receiving Date : 01-Mar-11
Testing Period : 01-Mar-11 to 08-Mar-11

Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Result(s) : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results **comply with** the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd



Y.C. Tham
Laboratory Manager

Test Location: 26 Ayer Rajah Crescent, #07-08, Singapore 139944

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Test Result(s):

Sample Description : SnAg25Sb10 Solder Wire

| Test Item(s): | Unit | Method | Results | MDL | RoHS Limit |
|---|-------|---|-------------|---|------------|
| Cadmium(Cd) | mg/kg | With reference to IEC62321, Ed1:2008. Analysis was performed by ICP/AES | n.d. | 2 | 100 |
| Lead (Pb) | mg/kg | With reference to IEC62321, Ed1:2008. Analysis was performed by ICP/AES | 33 | 2 | 1000 |
| Mercury (Hg) | mg/kg | With reference to IEC62321, Ed1:2008. Analysis was performed by ICP/AES | n.d. | 2 | 1000 |
| Hexavalent Chromium (CrVI) (By spot test / boiling water extraction) | --- | With reference to IEC62321, Ed1:2008 and performed by Spot test / boiling water extraction method. (see Note 9) | Negative | 0.02 mg/kg with 50 cm ² surface area | # |
| Sum of PBBs | mg/kg | With reference to IEC62321, Ed1:2008. Analysis was performed by GC/MS | n.d. | - | 1000 |
| Monobromobiphenyl | mg/kg | | n.d. | 5 | - |
| Dibromobiphenyl | mg/kg | | n.d. | 5 | - |
| Tribromobiphenyl | mg/kg | | n.d. | 5 | - |
| Tetrabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Hexabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Pentabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Heptabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Octabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Nonabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Decabromobiphenyl | mg/kg | | n.d. | 5 | - |
| Sum of PBDEs | mg/kg | | n.d. | - | 1000 |
| Monobromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Dibromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Tribromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Tetrabromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Pentabromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Hexabromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Heptabromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Octabromodiphenyl ether | mg/kg | | n.d. | 5 | - |
| Nonabromodiphenyl ether | mg/kg | n.d. | 5 | - | |
| Decabromodiphenyl ether ## | mg/kg | n.d. | 5 | - | |

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- Note:
- (1) mg/kg = ppm ; 0.1wt% = 1000ppm
 - (2) n.d.= Not Detected
 - (3) MDL = Method Detection Limit
 - (4) ## = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008.
 - (5) "-" = Not regulated
 - (6) "---": No unit (Qualitative Test)
 - (7) * : Exceeds limit
 - (8) # : Positive means the presence of CrVI on the tested areas.
Negative means the absence of CrVI on the tested areas.
 - (9) Spot-test:
Negative = Absence of Cr(VI) coating / surface layer
Positive = Presence of Cr(VI) coating / surface layer
The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.
Boiling-water extraction:
Negative = Absence of Cr(VI) coating / surface layer
Positive = Presence of Cr(VI) coating / surface layer
the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

Lab Analyst(s): Jay, Jojo and Eileen

Remarks: Sample received was totally dissolved by preconditioning method.

Sample photo:

Sample Description : SnAg25Sb10 Solder Wire

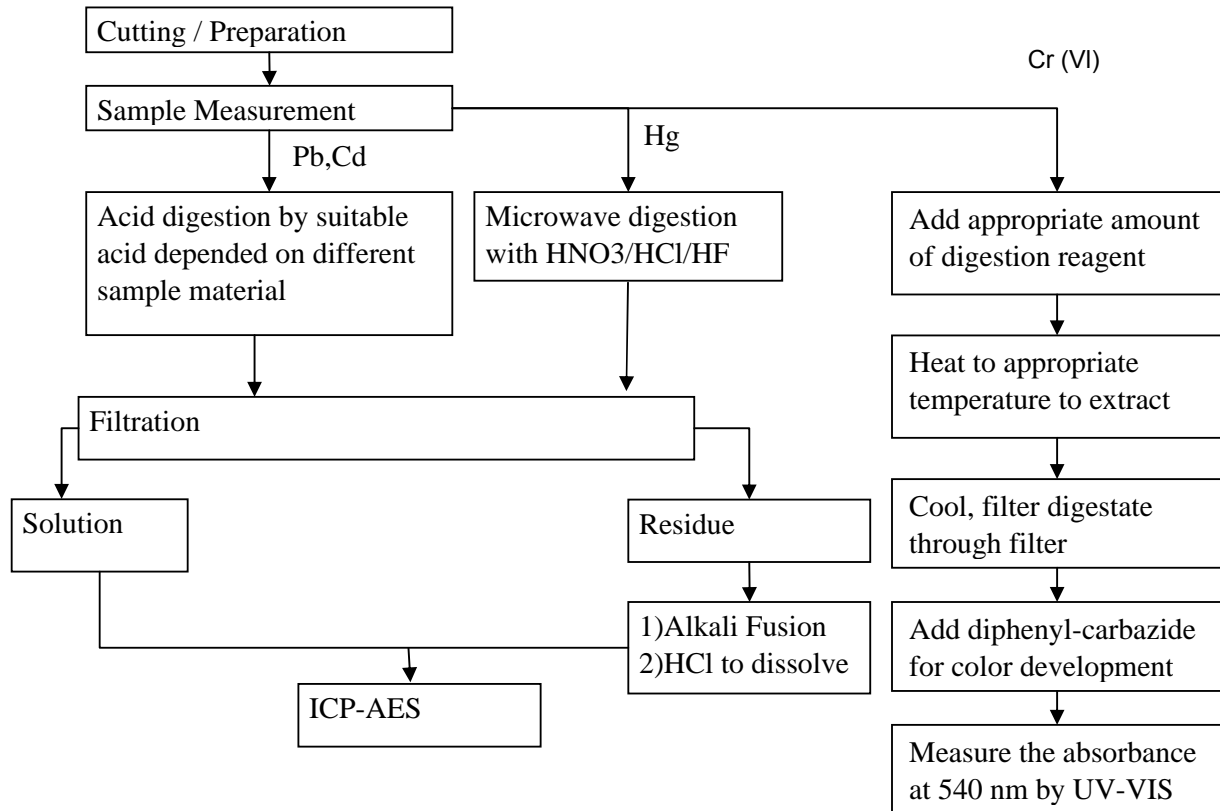
SGS authenticate the photo on original report only



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Process Flow of IEC 62321 (Pb, Cd, Hg & Cr⁶⁺)

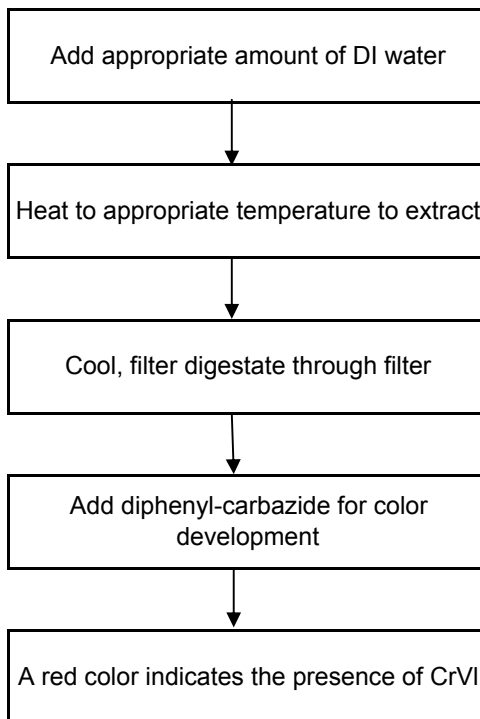


Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

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Process Flow of Cr(VI) by Boiling Water Extraction (IEC62321)

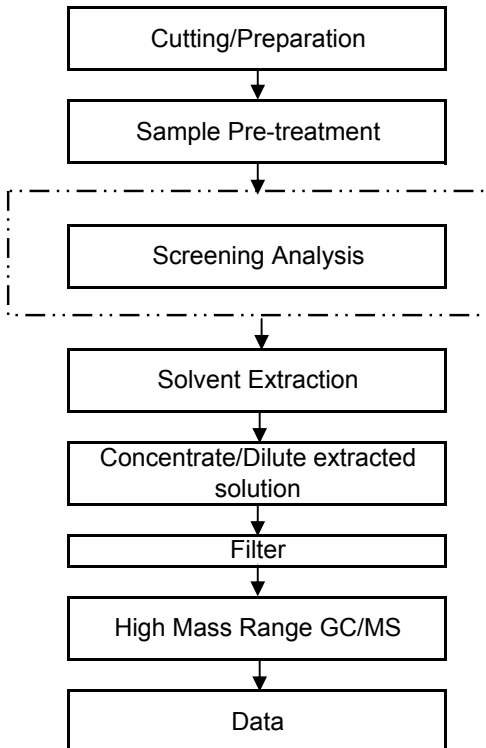


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Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)

First Testing Process → Optional screen process Confirmation process ...→



End of Report

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