

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 : 18-Mar-10  
Testing Period : 18-Mar-10 to 25-Mar-10

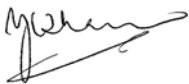
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

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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



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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	n.d.	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 <sup>2</sup> surface area	#
<b>Sum of PBBs</b>	mg/kg	With reference to IEC62321, Ed1:2008. Analysis was performed by GC/MS	<b>n.d.</b>	-	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	-
<b>Sum of PBDEs</b>	mg/kg		<b>n.d.</b>	-	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 cm<sup>2</sup> sample surface area.

Remarks: Sample received was totally dissolved by preconditioning method.  
Lab Analyst(s): Jay and Yaowen

**Sample photo:**

Sample Description : SnAg25Sb10 Solder Wire

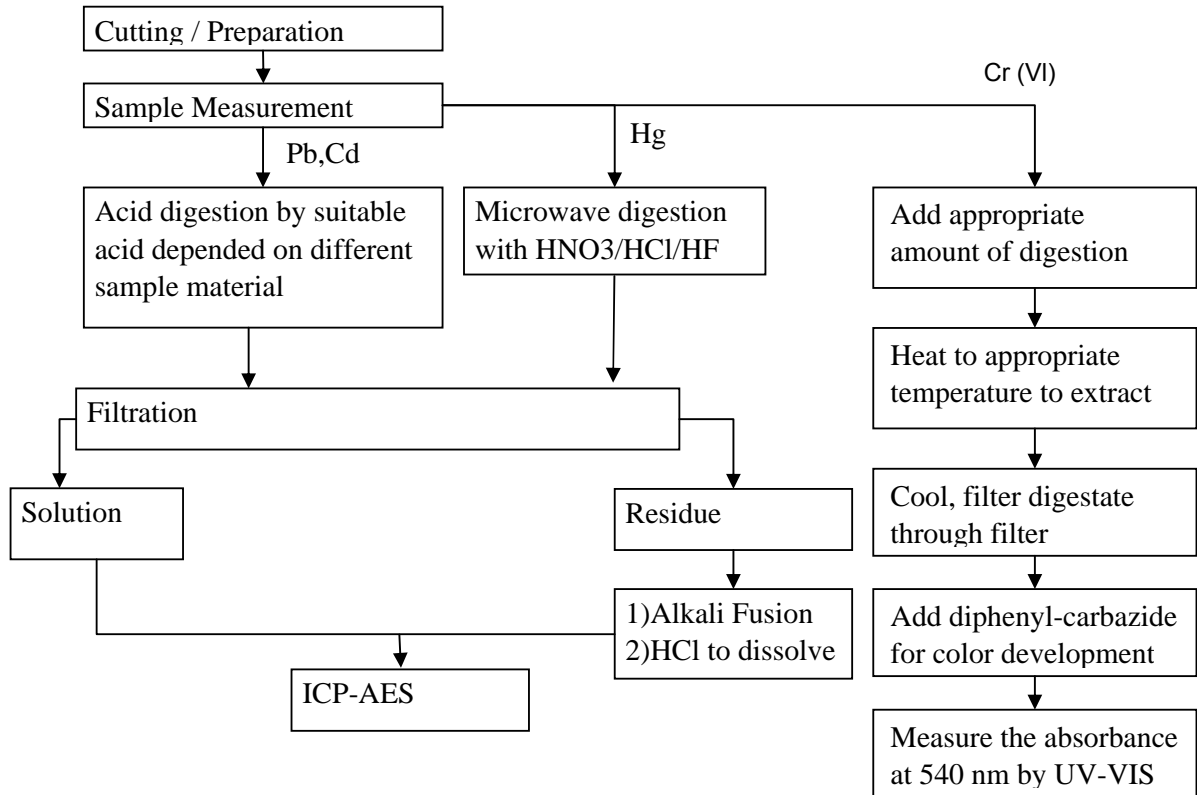
SGS authenticate the photo on original report only



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**Process Flow of IEC 62321 (Pb, Cd, Hg & Cr<sup>6+</sup>)**

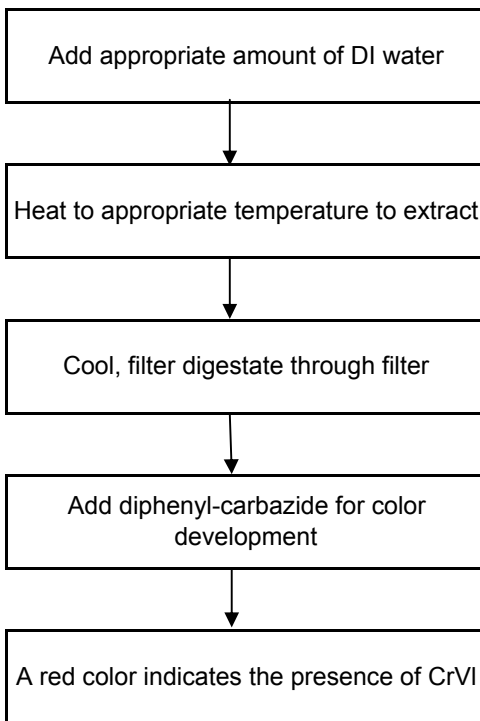


Remarks: Sample received was totally dissolved by preconditioning method.(CrVI method excluded)

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

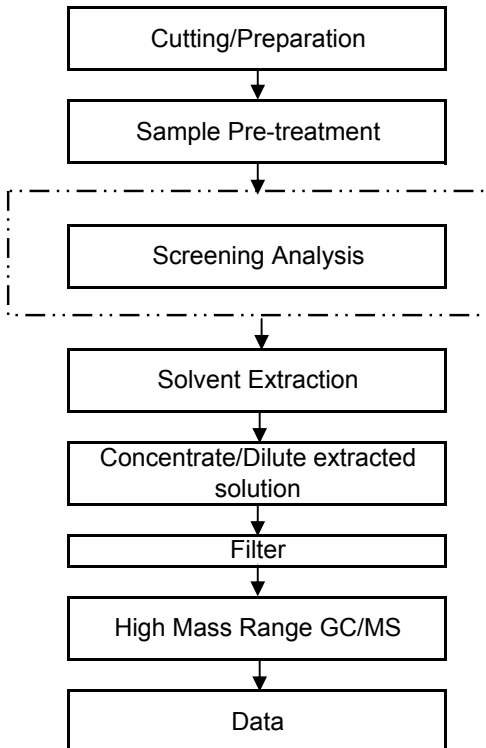


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**Process Flow of PBBs and PBDEs by GC/MS (IEC 62321)**

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



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

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