

# Test Report

No. : CE/2008/12018    Date : 2008/01/15    Page : 1 of 6

NIPPON RIKA KOGYOSHO CO., LTD.  
1-20-6 OHI, SHINAGAWA-KU, TOKYO 140-8503, JAPAN



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

Sample Description : ALUMINIUM BASE COPPER CLAD LAMINATE FOR PRINTED  
CIRCUIT BOARD  
Style/Item No. : NRA-E  
Sample Receiving Date : 2008/01/08  
Testing Period : 2008/01/08 TO 2008/01/15

---

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



**Chenyu Kung / Operation Manager**  
**Signed for and on behalf of**  
**SGS TAIWAN LTD.**  
**Chemical Laboratory – Taipei**

# Test Report

No. : CE/2008/12018 Date : 2008/01/15 Page : 2 of 6

NIPPON RIKA KOGYOSHO CO., LTD.  
1-20-6 OHI, SHINAGAWA-KU, TOKYO 140-8503, JAPAN



## Test Result(s)

PART NAME NO.1 : SILVER/COPPER COLORED METAL (EXCLUDING THE PLATING LAYER)

Test Item (s):	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Cadmium by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Lead by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Mercury by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.
Polychlorinated Biphenyls (PCBs) (CAS No.: 001336-36-3)	mg/kg	With reference to US EPA 8270D method. Analysis was performed by GC/MS.	0.5	n.d.
<b>Sum of PBBs</b>			-	n.d.
Monobromobiphenyl	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of PBB and PBDE by GC/MS.	5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.

# Test Report

No. : CE/2008/12018 Date : 2008/01/15 Page : 3 of 6

NIPPON RIKA KOGYOSHO CO., LTD.  
1-20-6 OHI, SHINAGAWA-KU, TOKYO 140-8503, JAPAN



Test Item (s):	Unit	Method	MDL	Result
				No.1
<b>Sum of PBDEs (Mono to Nona) (Note 4)</b>	mg/kg	With reference to IEC 62321, Ed.1 111/54/CDV. Determination of PBB and PBDE by GC/MS.	-	n.d.
Monobromobiphenyl ether			5	n.d.
Dibromobiphenyl ether			5	n.d.
Tribromobiphenyl ether			5	n.d.
Tetrabromobiphenyl ether			5	n.d.
Pentabromobiphenyl ether			5	n.d.
Hexabromobiphenyl ether			5	n.d.
Heptabromobiphenyl ether			5	n.d.
Octabromobiphenyl ether			5	n.d.
Nonabromobiphenyl ether			5	n.d.
Decabromobiphenyl ether			5	n.d.
<b>Sum of PBDEs (Mono to Deca)</b>			-	n.d.

- Note :
1. mg/kg = ppm
  2. n.d. = Not Detected
  3. MDL = Method Detection Limit
  4. According to 2005/717/EC DecaBDE is exempt.
  5. " - " = Not Regulated
  6. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing.  
The above result(s) was/were only given as the informality value.

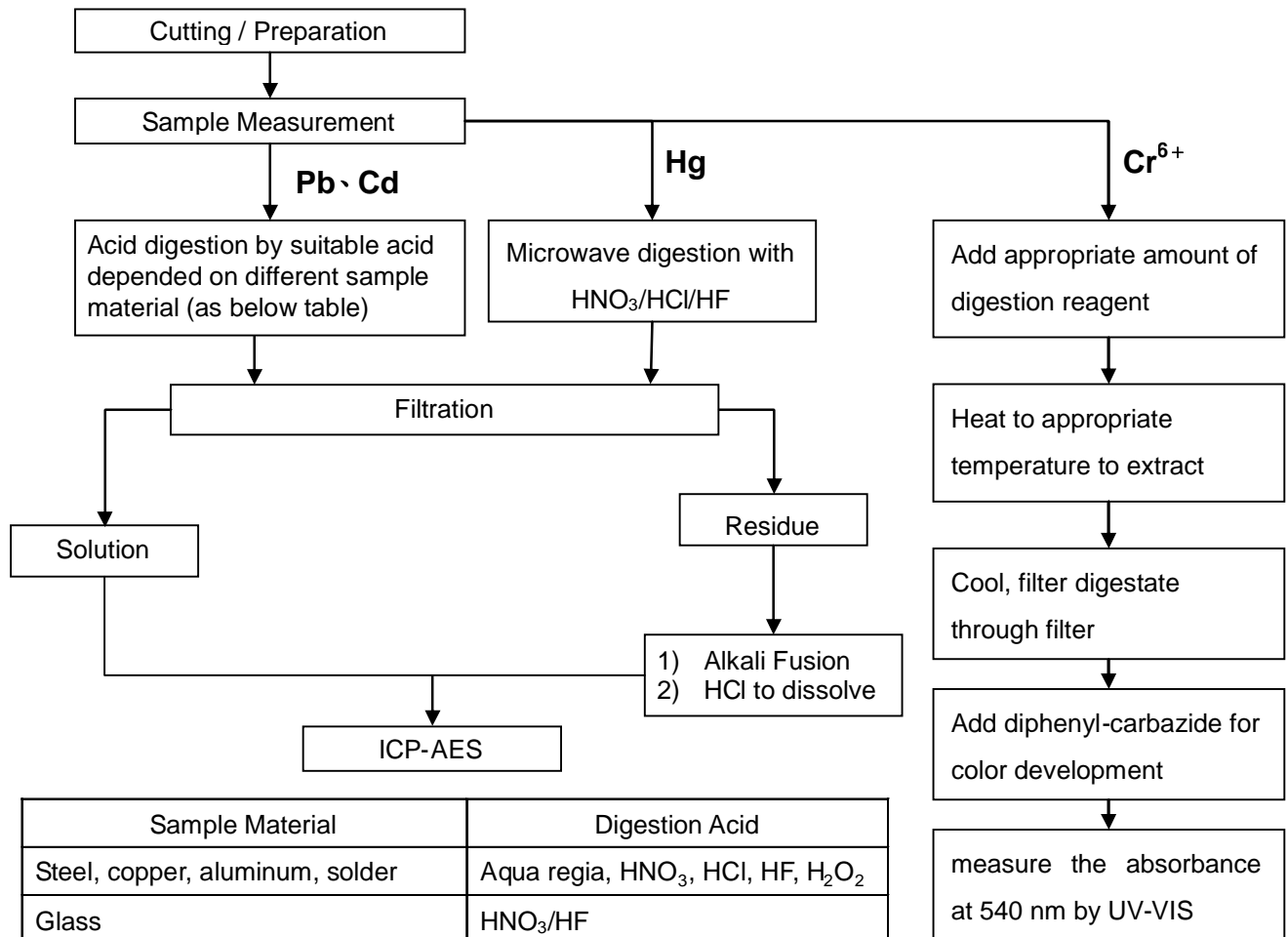
# Test Report

No. : CE/2008/12018 Date : 2008/01/15 Page : 4 of 6

NIPPON RIKA KOGYOSHO CO., LTD.  
1-20-6 OHI, SHINAGAWA-KU, TOKYO 140-8503, JAPAN



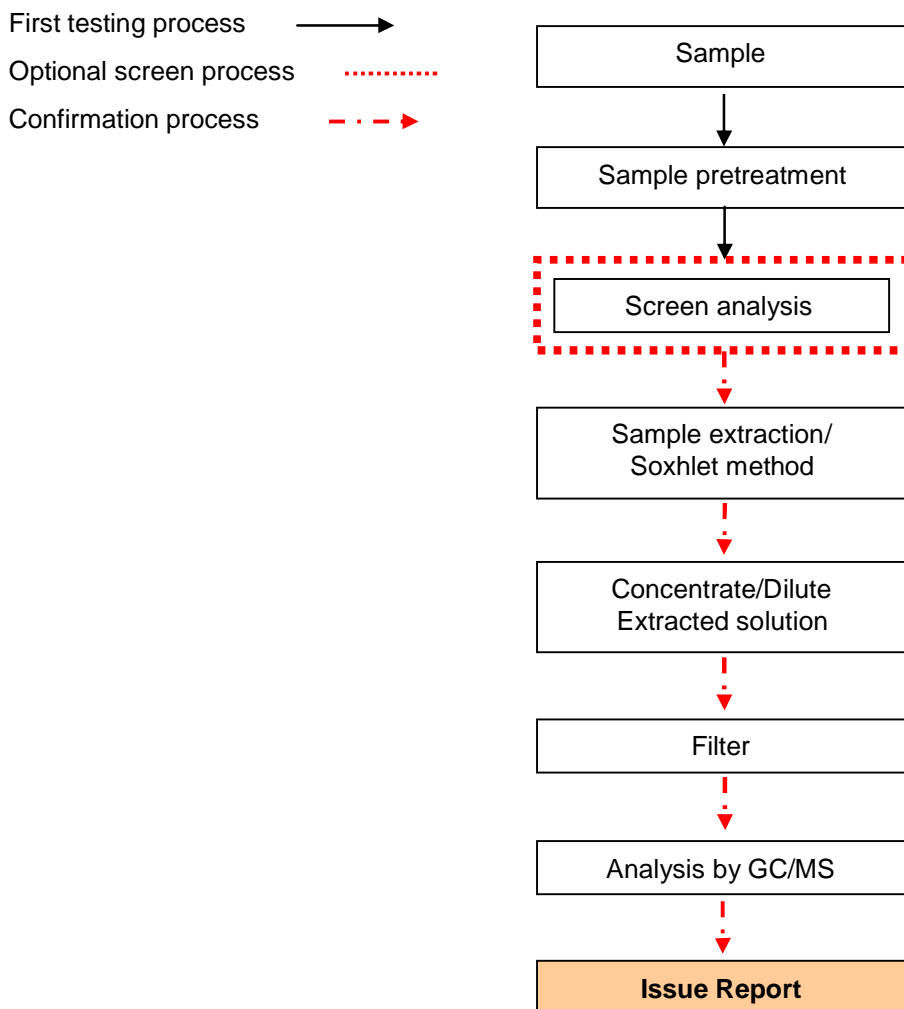
- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Troy Chang
- 3) Name of the person in charge of measurement: Chenyu Kung



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion



## PBB/PBDE analytical FLOW CHART



## Test Report

No. : CE/2008/12018    Date : 2008/01/15    Page : 6 of 6

NIPPON RIKA KOGYOSHO CO., LTD.  
1-20-6 OHI, SHINAGAWA-KU, TOKYO 140-8503, JAPAN



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