

23 April 2009

SUMITOMO METAL TECHNOLOGY, INC. Kashima Div.

Report to : Epson Toyocom Corporation

1-1, Koyato2-chome, Samukawa-machi, Koza-gun, Kanagawa 253-0192, Japan

Report on Content of Cd, Pb, Cr6+, Hg, Br, Cl in Parts.

1. SMT Job No. G94-042-A
 2. Sample Receiving Date : 10 April 2009
 3. Test Requested : Analysis of the Cd, Pb, Cr6+, Hg, Br, Cl content in Parts.
 4. Sample Name

Sample

5. Test Method

Cadmium (Cd)	IEC62321
Lead (Pb)	IEC62321
Hexavalent chromium (Cr ⁶⁺)	IEC62321
Mercury (Hg)	IEC62321
Bromine (Br)	Heating & Vaporization & Dissolution
Chlorine (Cl)	Heating & Vaporization & Dissolution

Note : The Samples were dissolved completely. hydrofluoric acid treatment.

Analysis was performed by Graphite Furnace Atomic Absorption Spectroscopy (GFAA)
 and Diphenylcarbazide Spectrophotometer Method
 and Cold Vaporized Atomic Absorption Spectroscopy (CV-AAS) for Mercury.
 and Ion Chromatograph (IC) for Bromine & Chlorine.

6. Analysis Result

Table 1 (mass ratio)

Object	Test Method	Result	Unit	D. L.
C d	G F A A	N. D.	ppm	5
P b	G F A A	N. D.	ppm	5 0
C r ⁶⁺	Spectrophotometer	N. D.	ppm	1 0
H g	C V - A A S	N. D.	ppm	1
B r	Ion Chromatograph	N. D.	ppm	2 0
C l	Ion Chromatograph	N. D.	ppm	2 0

Note ; N. D. =Not Detected ; D. L. =Detection Limits ; ppm = mg/kg

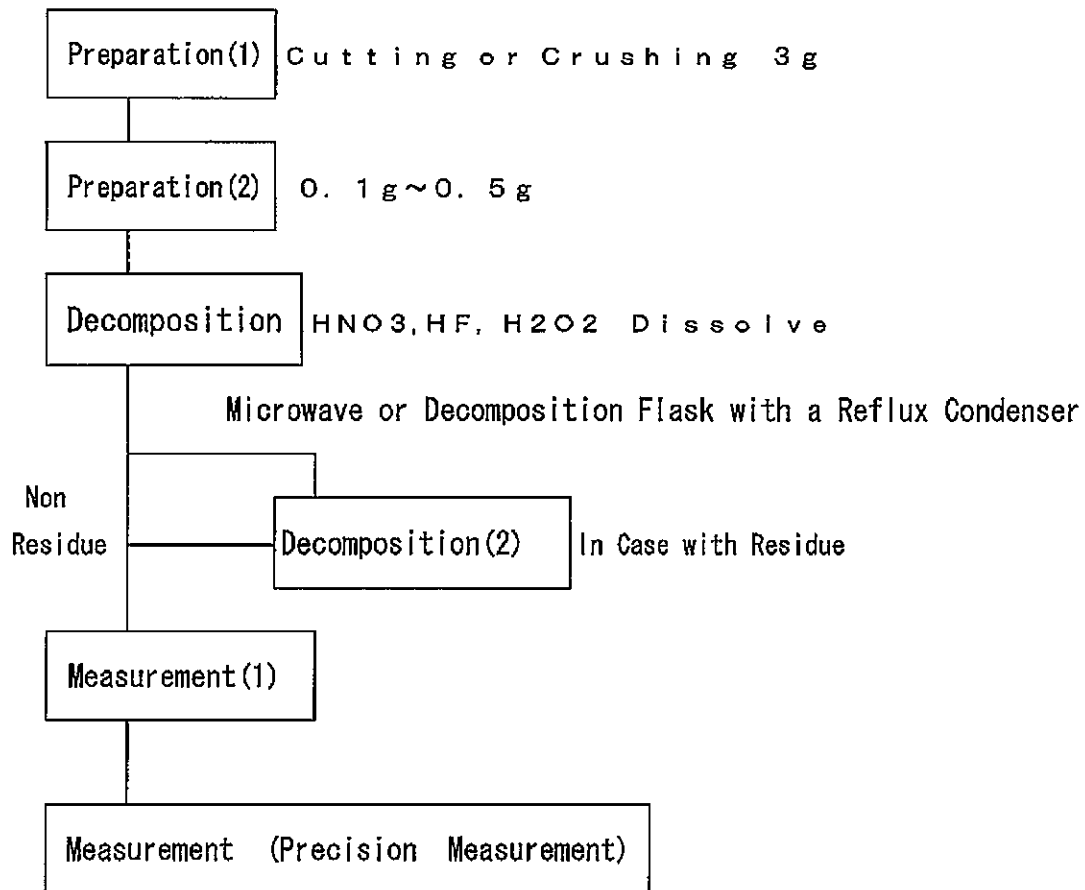
7. Date of Analysis : 23 April 2009

8. Testing Laboratory

Company Name SUMITOMO METAL TECHNOLOGY, INC.
 Division Name Kashima Div.
 Responsible person for measurement Toshihiro Atsui
 Person in charge of measurement Naonori Kido

Signature: Haruji ShinadaApprove: Ryuji Ogata

Pre-conditioning and measurement for (Cd, Pb)



< Precision Measurement >

- ① In Case <1000ppm...Cd, Pb
• ICP/MS (Plastics)
- ② In Case <1000ppm...Cd, Pb
• FL-AAS (Metal, Ceramics)
- ③ In Case 100ppm< ...Pb
In Case 50ppm< ...Cd
• ICP/AES (Metal, Ceramics)
- ④ In Case 100ppm< ...Pb
In Case 50ppm< ...Cd
• AAS (Metal, Ceramics)

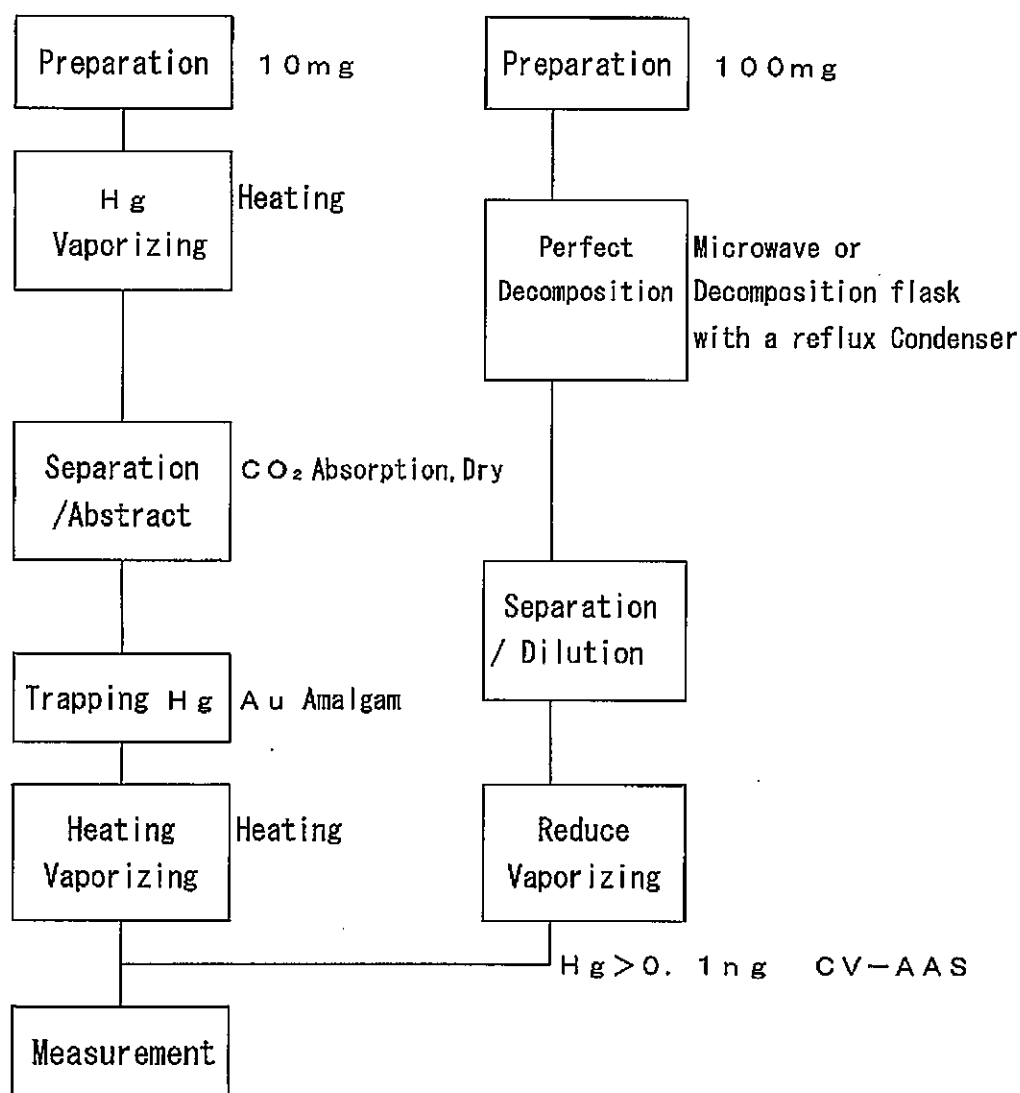
SUMITOMO METAL TECHNOLOGY, INC.

Pre-conditioning and measurement for (Cr⁶⁺)

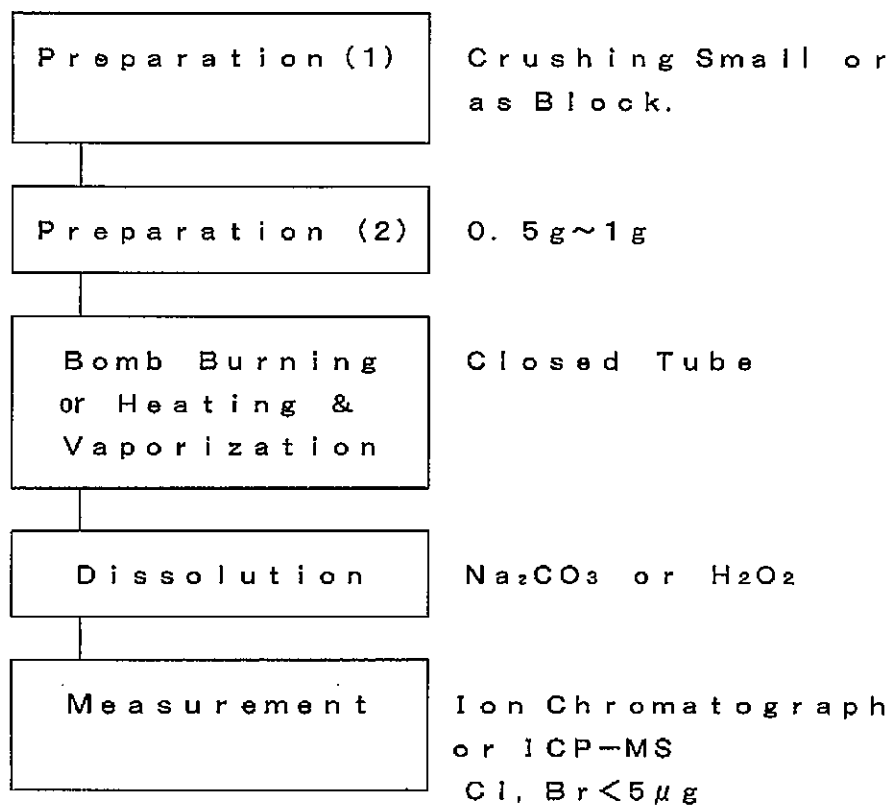
Hexavalent Chromium

Preparation (1)	Crushing Small or as Block.
Preparation (2)	Sample: 2g
Immerse	Pure Water 50ml
Boiling	5min.
Add Sulfuric Acid	H ₂ SO ₄ 4.5mol 3ml
Dilution	250ml
Add Reagent	Diphenylcarbazide
Add Buffer Solution	Ortho disodium hydrogen-phosphate. 25ml
Measurement	Cr ⁶⁺ > 5 μg Spectrometer (Absorbance)

Pre-conditioning and measurement for (H g)



Pre-conditioning and measurement for (C l, B r)



Pre-conditioning and measurement for (Br)

