

10 February 2011

SUMITOMO METAL TECHNOLOGY, INC. Kashima Div.

Report to : EPSON TOYOCOM CORPORATION

INA PLANT 8548 Nakaminowa, Minowa-machi, Kamiina-gun, Nagano 399-4696, Japan

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

1. SMT Job No. G11-094

2. Sample Receiving Date : 1 February 2011

3. Test Requested : Analysis of the Cd, Pb, Cr6+, Hg content in Parts.

4. Sample Name

Sample No.	Sample
	Crystal



Photo1. Crystal

5. Test Method

Cadmium (Cd) IEC62321

Lead (Pb) IEC62321

Hexavalent chromium (Cr⁶⁺) IEC62321

Mercury (Hg) IEC62321

Note : The Samples were dissolved completely.

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	3 0
C r ⁶⁺	Spectrophotometer	N. D.	ppm	1 0
H g	C V - A A S	N. D.	ppm	1

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

7. Date of Analysis : 9 February 2011

8. Testing Laboratory

Company Name SUMITOMO METAL TECHNOLOGY, INC.

Division Name Kashima Div.

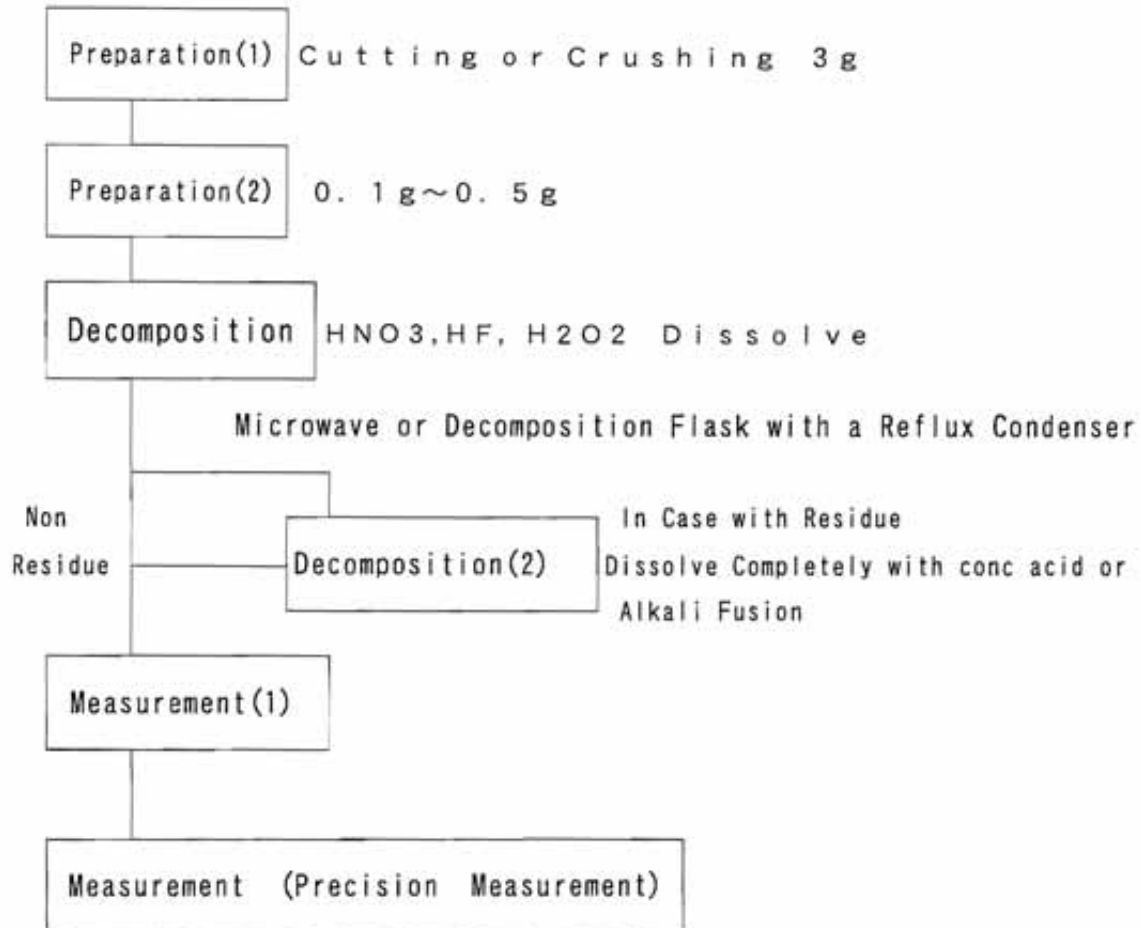
Responsible person for measurement Naonori Kido

Person in charge of measurement Akira Takeuchi

Signature: Haruji Shinada

Approve: Ryuji Ogata

Pre-conditioning and measurement for (Cd, Pb)



< Precision Measurement >

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

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⁺ >5μg Spectrometer (Absorbance)

Pre-conditioning and measurement for (Hg)

