

## Sample Results Summary Sheet

Please return this form to the Curator for each allocated Sample

**Sample ID:** RA-QD02-0049

**PI:** Mitsuru Ebihara

**Type and date of analysis performed:** Elemental analysis by neutron activation analysis  
neutron irradiation: Feb. 8 - 9, 2011; gamma-ray counting: Feb.9 – April 30, 2011

**Elements or phases identified:** (Mg, Si, olivine, pyroxene, aromatic carbon, etc.)  
Na, Sc, Cr, Fe, Co, Ni, Zn, Ir

**Contaminant phases identified:** (Al, SUS, carbon particles, etc.)  
none

**Sample handling:**  
exposed in atmosphere, irradiated with neutrons

**State of sample pre-analysis:**  
transferring the sample into a sample holder of quartz in atmosphere; irradiating the sample with neutron in a irradiation tube of the Kyoto university research reactor for 19 hours; after irradiation, transferring the sample from the sample holder to a new (non-irradiated) holder of quartz by using ethanol

**State of sample post-analysis:**  
During transferring the sample, it was disassembled into 5 small grains. The largest grain was named RA-QD02-0049-1 and the rest (4 grains) RA-QD02-0049-2. These samples got radioactive although radioactivity was too small to be regarded as the radioactive material by definition. The samples were in atmosphere during gamma-ray counting after neutron activation.

**Analysis data Notes:** (summary of the attached analysis data and/or images)  
Analysis data are shown in the separate sheet.

**Table 2 Analytical results of RA-QD02-0049-2**

Measurement 1 <sup>2)</sup>				Measurement 2 <sup>3)</sup>	
Gamma-ray Peak Energy (keV)	Element	Contents (g)	Uncert <sup>4)</sup> (%)	Contents (g)	Uncert. (%)
316.6				2.61E-14	34.4
320	<b>Cr</b>	5.55E-11	10.7	6.64E-11	9.8
468	<b>Ir</b>	3.65E-14	59.0	4.69E-14	45.6
810.5	<b>Ni</b>	5.17E-09	3.3	5.33E-09	2.9
889	<b>Sc</b>	4.20E-12	3.4	4.05E-12	3.4
1099	<b>Fe</b>	3.51E-07	2.1	3.50E-07	1.7
1115.3	<b>Zn</b>			1.11E-10	36.5
1120.3	<b>Sc</b>	4.04E-12	4.1	4.33E-12	3.2
1173	<b>Co</b>	2.32E-10	2.4	2.55E-10	2.9
1291.4	<b>Fe</b>	3.61E-07	1.6	3.63E-07	1.7
1332.4	<b>Co</b>	2.34E-10	2.3	2.54E-10	2.0
1368.5	<b>Na</b>	1.56E-09	5.2		
1596.3	<b>La</b>	2.46E-13	55.3		
2754.6	<b>Na</b>	1.65E-09	7.1		

1) Estimated mass=1.67µg.

2) Cooling time: 6.2 d; counting time: 49 h.

3) Cooling time 18.1 d; counting time: 59 h.

4) Uncertainty due to counting statistics only (1σ).