

## The source and behavior of arsenic in groundwater reserved in the Sangunmetamorphic rocks, Fukuoka City

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In 1996, arsenic up to 0.24 mg/L was detected in groundwater hosted by the Sangun metamorphic rocks at Nagatani, Fukuoka City. The arsenic-bearing water was found in 23 wells in the area. The arsenic was considered to dissolve from abnormally high arsenic-bearing talc rocks (140-440 mg/kg As) (Fukuoka city, 1996).

This study intends to clarify the chemical form of arsenic in the talc rock by EPMA analyses, and reveal the solubilization behavior of arsenic into groundwater by the dissolution experiment between the powdered talc rock specimens and distilled water under the temperatures of 15 and 10 degrees. The W/R ratios are 1, 10 and 100, and the retention time ranges from 8 to 41 days.

Arsenic exists as As-sulfide minerals, cobaltite (CoAsS) and gersdorffite (NiAsS), in the talc rocks. Solubilization of arsenic proceeds in the circumstance of smaller W/R ratio under both temperatures of 15 and 10 degrees.

The results imply that the dissolution of arsenic into groundwater is considered to occur in such narrow and limited parts as sheared fractures developed in the As-sulfide bearing talc rocks.