

Sulfur isotope study of 2000- eruption of Miyake-jima volcano, Japan

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The sulfur isotopic ratios of water-soluble sulfur leached from ashes effused during 2000 eruption of Mount Oyama volcano, Miyake-jima island range from +5 to +9.4 permil. Whereas they show fluctuation of about 3 permil in a single eruption event, the values are lower (+5 to +7.3 permil) for July 8 eruption, compared to the majority of +7 to +9.5 permil from July 14 to August 29 eruptions. Then the values for eruptions in September are low, ranging from +5.3 to +7.8 permil. Such temporal variation is attributed to the increase in temperature of the subvolcanic hydrothermal system wherein aqueous sulfate isotopically equilibrated. Since the subvolcanic hydrothermal system was dried up, sulfuric gases are emitted from the magma directly to the surface.