

SVC050-23

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## Temporal variations of the petrological features of the juveniles from Showa crater since 2006, Sakurajima volcano

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On June 2006, Sakurajima volcano, Japan, has resumed its eruptive activity at Minamidake after ca. 6 years' quiescence. Most of the explosions have occurred at Showa crater. The eruptive activity from Showa crater is divided into the following four episodes: Episode-1, from June 2006 to August 2009, low explosive activity with slow inflation; Episode-2, from September 2009 to March 2010, high explosive activity with inflation; Episode-3, from April 2010 to May 2010, lower-explosive activity without inflation; and Episode-4, from June 2010 to September 2010, high explosive activity with deflation. The eruptive products are mainly composed of volcanic ash, and sometimes lapilli. Focusing on the petrographical features, the volcanic ashes are distinguishable into four types, agreeing with the eruptive episodes as follows. Episode-1: the absence of fresh glass particles; Episode-2: the existence of many fresh glass particles increasing its ratio with time; Episode-3: the existence of a small amount of fresh glass particles in addition to strongly-altered lithics; and Episode-4: the existence of fresh glass particles almost without strongly-altered lithics. Petrographical features of the lapilli are similar to those of the fresh glass particles. On whole-rock chemistry, the lapilli are consistent with the compositional trends of the juveniles from Minamidake crater since 1955, showing the most mafic compositions ( $\text{SiO}_2=58.5$  wt.%). The glass compositions of the lapilli and fresh glass particles are dacite ( $\text{SiO}_2=67.2-72.7$  wt.%), and they have a systematic variation: the silica content decreases with time in Episode-2 and Episode-3, and again increases in Episode-4. Such temporal variation corresponds to the geophysical change: from inflation to deflation. This agreement suggests that the recharge of mafic magma into magma chamber affects the compositions of volcanic glass. The comparison between the temporal change of the petrological features of juveniles and the geophysical dataset can contribute to understand the detailed magma migration beneath the volcano.

Keywords: Sakurajima volcano, Showa crater, temporal variation, volcanic ash, juvenile materials