

## Volcanic ejecta from Asama volcano, in September 2004.

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Among the volcanic ejecta by the vulcanian eruptions from the Asama volcano in 2004, Sept-1 and Sept-23 materials are compared.

Most of the Sept-1 ejecta are polygonal andesitic blocks, but small amount of pumice fragments are contained. Pumice is subdivided into one with bread-crust and one without it. Total amount of pumiceous materials is 7.4wt%. The bread-crust is dense non-vesicular andesite with 5-10mm thickness, and they are opened through cracks. Materials from the Sept-23 eruption consist of 80% andesitic fragments, 12% black scoria, 3.6% reddish altered scoria, and 4.5% other rocks.

The whole rock chemistry of these ejecta show that, all the pumiceous materials of Sept-1 eruption are chemically similar each other, whereas polygonal andesite fragments of Sept-1 are poorer in SiO<sub>2</sub> than pumices but their chemistry is continuous from that of pumices. All the scoria and andesite fragment from the Sept-23 eruption show the similar chemical compositions each other and they are plotted in the same region with the pumice of the Sept-1 eruption.

The groundmass minerals and glass compositions are compared between the crust of the bread-crust pumice of the Sept-1 eruption and the scoria of the Sept-23 eruption. The modal composition of the total groundmass crystals is 30vol% and 15vol% in bread-crust and scoria respectively. The glass in bread-crust is lower in FeO and higher in SiO<sub>2</sub> than in scoria. Therefore, the groundmass is much more crystallized and differentiated in bread-crust pumice of the Sept-1 eruption than in scoria of Sept-23 eruption.

The process of the eruption in Sept-1 was as follows. The phreatic or magmatic gas pressure was piled beneath the crater, and it crushed and threw out the fragments of the pre-existing andesite and the new magma to form polygonal fragments and bread-crust-pumice on the September 1st. After this eruption, fresh magma further rose up to the crater floor and it erupted on the September 23rd to form scoria along with polygonal fragments of consolidated andesite which used to be the magma on the day of Sept-1 eruption.