

Evidences of magma mixing in Shomyo-daki pyroclastic deposit, Tateyama volcano, central Japan

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The Shomyo-daki pyroclastic flow deposit, Tateyama Midaga-hara Volcano, central Japan consists of welded part and non-welded part in the western distal area. The welded part contains two kinds of essential lenses, one is aphyric or sparse phenocrysts bearing andesite. The other is phenocryst rich dacite. non-welded part also contains two kinds of essential lapilli, one is black scoria (several mm to 10+cm in diameter), which is aphyric - two pyroxene andesite and often contains white pumiceous streak or xenolith. The brown glassy groundmass of scoria contains abundant minute spots of pale brown glass, showing heterogeneous magma. Plagioclase and pyroxene phenocrysts are often partly rimmed with colorless glass, which might be derived from acidic liquid. The other is white pumice with similar size to scoria, which is phenocryst rich plagioclase two pyroxenes hornblende biotite dacite. Groundmass of pumice is colorless glass, however contains abundant minute black globules, which might be derived from andesitic liquid. Already reported major elements from volcanic products of Tateyama volcano shows linear trend in SiO₂ vs. K₂O diagram (Nakano et al., 2000) through all stages of volcanic activity. Major elements composition of pumice and scoria also within the range. Some phenocrystic minerals in scoria and pumice are analysed by EDS. The chemical composition and morphology of phenocrystic minerals exhibit that scoria contain crystals derived from dacitic magma which forms pumice. Thus the Shomyo-daki pyroclastic flow deposit was originated from mixing magma.