

High-K₂O melt inclusions in scoria falls of Washibaiké and Tateyama volcano in the Northern Japan Alps, central Japan

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High-K₂O series volcanic rocks, characteristic of the back-arc region of central Japan, occasionally contain high-K₂O domains (glass + fine micro-crystalline anorthoclase) in the groundmass, suggesting an important role of high-K₂O magma batch injection into the magma plumbing system of the back-arc volcanoes (Myoko, Kumono-taira, Tateyama, and Shirouma-kazafukidake volcano). Furthermore, melt inclusions of high-K₂O basaltic-andesitic compositions (51-64 wt% SiO₂) have found to be trapped in olivine and/or clinopyroxene phenocrysts from Asama, Myoko, and Shirouma-kazafukidake volcanoes.

We made petrographic observations and microprobe analyses of melt inclusions in phenocrysts in the Washibaiké volcano and Tateyama volcano in the Northern Japan Alps. The high-K₂O melts are also found in olivine phenocrysts in these volcanoes. The olivine-hosted melt inclusions have occasionally high-P₂O₅, F, and Cl contents. The high-K₂O, mafic melts are considered to have been generated in a hydrated and metasomatized mantle wedge, probably veined by phlogopite-bearing dykes, and contribute for producing the high-K₂O magma series in the back-arc region of central Japan.