The origin and evolution of magma recorded in An-rich plagioclase

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An-rich plagioclase is often observed in lavas from island arc. The high An content indicates that these plagioclase phenocrysts are not in equilibrium with melt and they were believed to be originated from country rocks as xenocrysts. The textures of these crystals have informations about the origin and evolution of magma. In this report, the environment during the generation An-rich plagioclase in lavas from Asama volcano is discussed.

In Asama volcano, phenocrysts of An-rich plagioclase have a unique feature that scarcely recognized in other groups. They have irregular cracks in cores, and the cracks are filled with a colorless and transparent substance that is apparently different from plagioclase. Minute inspections using EPMA and XRD reveal that the substance is meta-kaolinite. Because meta-kaolinite is a dehydration phase of kaolinite which is stable only at 500-925c, phenocryst plagioclase which have cracks filled with meta-kaolinite must be an altered xenocryst.

An-rich plagiopclase is also observed in Izu-Oshima and Miyakejima, South Japan. But they have different textual characters from those of Asama volcano. By comparing the two crystals, the difference of the environment of An-rich plagiopclase will be discussed.