

Occurrence and distribution of zeolites from Chichijima and Anijima, Ogasawara Islands, Japan.

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Ogasawara Islands located in the southern most area of the Izu-Bonin arc. It was known of occurring volcanic rocks with specific chemical composition and the various kinds of zeolites. These zeolites are formed by the hydrothermal alteration associated with the sea floor volcanic activity in Ogasawara Islands.

In this study, a boninite pillow lava in Chichijima and Anijima, Ogasawara Islands was focused. Sampling points were as follows: Chichijima (Miyanohama, Tsurihama, Hatsuneura and Kitabutakaigan), Anijima (Takinoura and the another point). At the sampling points, zeolite minerals and their host rocks were collected. The samples were characterized by XRF, XRD and SEM-EDS methods.

Chemical analysis shows Al/Si ratio range of the zeolite samples was 0.18-0.32, and that of the collected host rocks was 0.18-0.26. As the result of chemical analysis, it was considered that the zeolite minerals had been strongly influenced by the chemical compositions of the host rocks in Chichijima and Anijima.

Most of the zeolite minerals were classified to Ca-dominant type, and some of zeolite samples collected at coast areas were Na-dominant type. Later zeolite samples seems to have been replaced their exchangeable cations by seawater.

As the experimental results, it has been found that a zeolite which has been described as heulandite should be identified as clinoptilolite.

Keywords: zeolite, boninite, hydrothermal alteration, heulandite, clinoptilolite