

Petrology of a troctolite-dunite body (Uraniwa-hills) nearby the Kairei hydrothermal field of the Central Indian Ridge

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An active H₂-rich hydrothermal activity, the Kairei hydrothermal field, was found at the edges of latest abyssal hills of the Central Indian Ridge (Gamo et al., 2001). Geological background for the formation of H₂-rich hydrothermal fluid in the Kairei is not clear. A scientific cruise, URANIWA-cruise supported by JAMSTEC, was carried out using SHINKAI 6500 around the Kairei hydrothermal field. Flat sheet flow dominates in the abyssal hills. Aphyric pillow basalts are frequently sampled around the hydrothermal field. On the other hand, geomorphologically distinctive oceanic hills (Uraniwa-hills), elongated to the direction perpendicular to the ridge axis, are well developed at about 8 miles eastward from the hydrothermal field. We collected olivine-rich gabbroic rocks (troctolite including one plagioclase-bearing dunite) with small amount of olivine gabbros and basaltic rocks. Hydrogen can be produced by a reaction for the serpentinization of troctolitic rocks of deeper origin.