

Various rock magnetic properties of undersea volcano: ODP Leg197 Hole 1205A (Nintoku Seamount)

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Rock magnetic properties on various basaltic rocks recovered at ODP Hole 1205A (Nintoku Seamount: 41°20'N, 170°23'E, water depth=1310m) were measured. We have collected 177 samples as shipboard samples and measured some basic properties onboard. Some of those samples were more precisely examined on shore with high- and low- temperature magnetic measurements, hysteresis measurements and so on. We can roughly subdivide those samples into the following three types on the basis of their magnetic properties. (1) Heating and cooling curves are basically reversible both in air and vacuum, and show the Curie temperature about 580 C. The Verwey transition was also clearly shown. (2) Heating either in air or vacuum yielded considerably irreversible curves. Low-temperature measurement did not show the clear Verwey transition. (3) Heating both in air and vacuum show the Curie temperature as low as ~200 C but without increase in intensity when heated above 300 C. Low-temperature measurement revealed very low-temperature change(s) such as 50K or below. Relationship with the results of microscope observation will be also discussed.