

Mineralogy and Sulfur Isotopic Ratio of the Black Smoker Chimney at the Central Indian Ridge

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Mineralogy and sulfur isotopic ratios of the active and dead black smoker chimneys which were sampled from the first discovered active seafloor hydrothermal system in the Indian Ocean (Kairei field, 25deg 19.18'S, 70deg 02.40'E, water depth: 2450m) were examined. Only the active chimney contains anhydrite. Sulfide minerals which constitute the chimneys are basically the same independent its activity. Cu- sulfides are dominant in the chimney. Identified Cu-sulfide are chalcopyrite, isocubanite, bornite and digenite. Among them chalcopyrite occurs dominantly. Other minor minerals are sphalerite, pyrite, and marcasite. S isotopic ratios of most part of chimney are around 5 per mil, which is in the range of sulfide minerals found at the sediment starved mid-ocean ridge hydrothermal systems.