

Mineralogy and microstructures of serpentine polymorphs in the mantle sequence of Sahneh ophiolitic complex (East Kermanshah)

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Abstract: There are three serpentine polymorphs (Lizardite, Chrysotile and Antigorite) in the serpentinites of ophiolitic mélange of south Sahneh. Lizardite is observed as flake structure in the matrix of peridotites while antigorite is overgrown on lizardite and chrysotile development is just restricted to the micro fractures as a development is restricted to the micro fractures as golden and transparent string. On the basis of serpentinization grade, peridotitic rocks of this area have been divided into three groups. Peridotites that are relatively serpentinized (extreme 50%), peridotites that have been experienced serpentinization between 50 to 90% and peridotites that entirely serpentinized (more than 90 %). According to the textural evidences and substitutional relations, serpentinization episode has taken place during 6 stages. Serpentinization has begun from ocean floor alteration with lizardite occurrence and has continued in the emplacement stage of ophiolite stack as antigorite crystallization. Based on temporal relations, apparent characteristics and the sort of filling minerals, 4 generations of veins have been recognized in the Sahneh serpentinized peridotites. V1 is the oldest and V4 is the youngest vein generation. The chemical composition of investigated serpentines is plotted in the serpentine particular field, upon the tie line of MgO-SiO₂ and between forstrite and enstatite.

Keywords: *Serpentine; lizardite; chrysotile; antigorite; Sahneh Ophiolitic Complex.*

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