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Textural and geochemical significance of chromitites in the Baft ophiolite melange: a petrogenetic approach

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Abstract: Gushk chromite mine is one of the largest and the most important chromite mines in Iran that is located in southwest of Kerman Province, 5 km north of Baft city. In this open pit active mine, about 60 tons of chromite is extracted per day. The studied chromitites are podiform type and form discontinuous layers or lenses surrounded by completely serpentinized dunites. The chromites with average Cr_2O_3 = 62.8% and Cr# = 0.83 are classified as Cr-rich chromitites or as the first grade type chromites in the world. Cr# and Mg# values indicate that the studied chromitites have been crystallized from boninitic magmas, probably in suprasubduction zone setting in a back-arc basin environment. It seems that the Baft chromitite ores have initially been formed in a primary ophiolitic complex within dunitic envelopes. In the next stage, due to serpentinization of the peridotites and ascending of the resulted serpentinite, the studied deposits have been emplaced along the shear zones of the Baft ophiolitic melange en route to the surface.

Keywords: *Baft ophiolite mélange; dunite; serpentinite; chromite; Gushk mine.*

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