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Petrology, mineralogy and petrogenesis of the Soredal peridotites from southern Mashkan-NW Iran

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Abstract: The study area is located in the Soredal mountains, southern Mashkan village in the border of Iran with Iraq. The rock compositions are harzburgite to dunite which metamorphosed under various degrees of serpentinization. On the basis of mineral chemistry studies, main compositions of olivine and orthopyroxene are Fo (85.07- 91.55) and En (0.89- 0.92) respectively. Composition of clinopyroxene is diopside and Al/(Al+Fe^{3+}+Cr) ratio is between 0.02 and 0.57. Spinel end- member composition is as Mag (0.04- 0.06), Chr (0.62- 0.66) and Spl (0.51- 0.58). Mg number of spinel is varied between 0.52- 0.62 and Cr number is about 0.59- 0.69. The mineral chemistry studies indicate an oceanic property of the Soredal peridotites. The rocks are formed in forearc supra-subduction zone (SSZ) setting. The investigated rocks in the the end part of north western Zagros ophiolitic belt are remnants of oceanic lithosphere of southern branch of Neo-Tethyan which are formed during late Cretaceous between Arabian (toward south) and Eurasia (toward north) continental margins. They are very similar to Kermanshah and Iraq ophiolites in the ophiolitic Zagros belt.

Keyword: *Mineral chemistry; peridotite; Soredal; Mashkan; NW Iran.*

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