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Detection of pressure and temperature in formation of Jandaq ophiolite amphibolites (North-east of Isfahan Province) by using amphibole and plagioclase barometry and thermometry

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Abstract: Amphibolites are one of the metamorphic rock units of Jandaq ophiolite and exposed in a considerable volume. These rocks are metamorphism products of basalts, pillow lavas and diabasic dikes of Jandaq ophiolite. Amphibolites contain amphibole, plagioclase, garnet, alkali feldspar (orthoclase), magnetite, biotite, muscovite, sphene, quartz, epidote and calcite minerals. These rocks contain very good lineation and foliation. By metamorphic differentiation, mafic and felsic minerals are separated in some locations. Metasediments that are present in Jandaq area, were originaly sedimentary cover of Jandaq ophiolite, before the metamorphism has taken place. Mineralogical studies, hornblende barometry, and amphibole – plagioclase thermometry, conclude that the metamorphism of Jandaq ophiolite amphibolites occured in upper part of amphibolite facies condition (7.98 to 9.01 Kbars and 714 to 737 ^{o}C). Temperature of metamorphism in Jandaq ophiolite amphibolites is higher than amphibolites that are in Jandaq metamorphic rocks (8.58 to 10.87 Kbars and 619 to 668 ^{o}C).

Keywords: *Amphibolite, Jandaq ophiolite, metamorphic rocks, geothermobarometry*.