Mineral chemistry of tourmaline in Lale Zar granite mass (kerman province)

S. Ahmadi*, Z. Tahmasbi, A. Ahmadi Khalaji, F. Zal

Department of Geology, Faculty of Sciences, Lorestan University, Iran

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Abstract: Lale zar granite batolith is located in the southeast of Urumieh-Dokhtar magmatic belt and Dehech-Sarduieh. This mass includes a low density of tourmaline with nodule, vein and solar morphologies. Less tourmaline occurs in this mass could be due to mass being saturated in the boron. The studied tourmalines are classified in the shourl-dravite series and alkaline group. Most of the substitutions in these tourmalines are kinds: Ca + Mg(O) = Na + Mg(OH), Ca = X_vac + Na ,Ca + Mg = (X_vac + Al) − 1 and Mg instead of Fe. Existence of clear zoonings in the tourmalines, large amounts of Mg and less than 0.6 amounts of FeO / FeO + MgO, show the growth of tourmaline in the open systems where generated from magmatic-hydrothermal and hydrothermal. On the other hand, high amounts of REE elements and enrichment of LREE than HREE, enrichment of the transition elements such as Cr, V, Ni, Cu, Zn, Zr also can be show the hydrothermal origin for these tourmalines.

Keywords: solar; nodule; tourmaline;lalezar; batolith; Urumieh-Dokhtar.