Investigation of amphibole mineral fertilization in determining the conditions for the formation of granitoid masses in northern Sarduieh Dasht Shaghin (and Dasht Sartashtak)

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Abstract: The Oligo-Miocene intrusive masses of northern Sarduieh are located in the Urumieh-Dokhtar zone and the lithology is composed of granitoids include quartzdiorite, tonalite, granodiorite, granite and granophyre. Mineral chemistry studies showed that the amphibole minerals in diorite and granodiorites are calcic in composition and range from actinolite to magnesio-hornblende. Geochemical and mineralogical results revealed that these bodies have been generated in the lower part of the lower crust at a temperature of 700 to 750 °C, with an oxygen fugacity of -13.57 to -15.76 and a low pressure of 1 to 3 kb. These amphiboles are subduction-related and in accordance to the tectono-magmatic features seen in these massifs, they show characteristics of subduction and active continental margin environments.

Keywords: Sarduieh; Urumieh-Dokhtar; granitoied; amphibole; themoeters; barometers.