

## Mineral chemistry .Geochemistry and mineral chemistry of the amphibolites in the northeast of Dorud (Lorestan province)

A. Ahmadi khalaji\*, M. Safarzadeh, Z. Tahmasbi, F. Sepahvand, R. Zarei Sahamieh

*Department of Geology, Faculty of Science, University of Lorestan*

(Received: 4/5/2016, in revised form: 2/8/2016)

**Abstract:** Amphibolites in the studied area have upper Triassic age and seen with various rocks such as micaschiste, marble and metadolomite. These rocks with dark and green color contain minerals as hornblende, plagioclase, actinolite, tremolite and epidote that dark and light minerals were separated and seen as dark and light bands. Based on whole rock geochemical analysis, these rocks belong to sub-alkaline series, and show tholeiitic trend and basaltic origin. So, amphibolites in this area are ortho-amphibolite type. Based on tectonic discrimination diagrams, protolithic rock of these amphibolites revealed to oceanic crust and tectono-magmatic setting in within plate environment. The chemical composition of amphibole in amphibolites show the calcic amphibole group and different mineral types as Tremolite - actinolite, Pargasite and Magnesio-hornblende. Based on the obtained results from the analysis of plagioclases in amphibolites, in triangular diagram Ab-An-Or, plagioclases mostly been located in andesine-oligoclase to labradorite range in this diagram. Estimates of temperature and pressure of crystallization in plagioclase and amphibole minerals base on thermobarometric relations using paired minerals coexisting hornblende - plagioclase temperature been showed the ranges between 588 to 819 °C with an average of 704 °C and a range of pressure between 2 to 6 Kbar for these minerals.

**Keywords:** *amphibolites; geochemistry; orthoamphibolite; protolith; actinolite; magnesio-hornblende; pargasite; Dorud.*

متن فارسی اصل مقاله از صفحه ۹۵ تا ۱۱۰ در این شماره به چاپ رسیده است.

---

\*Corresponding author, Tel:06633120620, Fax:06633120618, Email: ahmadikhalaj.a@lu.ac.ir