

## Mineral chemistry and thermobarometry of the Late Neoproterozoic metabasites from Do-Chah metamorphic-igneous complex (SE Shahrood)

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**Abstract:** Do-Chah metamorphic-igneous complex is one of the Iranian crystalline basement complexess which is located in the SE Shahrood in northern edge of Central Iran structural zone. This complex includes a wide compositional range of metamorphic rocks such as metabasite, metapelite, metacarbonate and metapsammite, and meanwhile is host of leucogranite and biotite granite intrusions. Protolith of metabasites has been basaltic lava flows, diabasic swarm dikes and small-scale gabbrodioritic intrusions which metamorphosed to greenschist, amphibolite and garnet amphibolite in a high pressure barrovian metamorphic path. Thermobarometry calculations, based on the microprobe analyses of coexisting amphibole-plagioclase pairs in metabasites, indicate a P-T range of 387-636 °C and 2.7-11 Kbar pressures for stopping of exchange and final equilibration. These conditions reveal a medium to high pressure barrovian metamorphic regime during the Cadomian orogeny in the Iranian Gondwana terrains from greenschist to upper amphibolite facies.

**Keywords:** Mineral chemistry; thermobarometry; metabasite; Neoproterozoic; Do-Chah; Shahrood.

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