

Mineral chemistry and thermobarometry of garnet staurolite schists from the Hamedan area

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(Received: 22/4/2017, in revised form: 11/9/2017)

Abstract: Garnet bearing staurolite schists comprise an important part of regional metamorphic succession in the Hamedan area (north of the Sanandaj-Sirjan zone). These rocks contain staurolite and garnet porphyroblasts that lie in a matrix which is composed of biotite, muscovite and quartz. The staurolites in Fe-rich and show little chemical composition diversities. Almandin is the most important component of the garnets although core to rim Fe and Mg increasing and Mn decreasing are visible indicating that they formed during a progressive metamorphism. The biotites are siderophyllite type. In addition to these minerals, Fe-rich chlorites of ripidolite type are present in margins of some staurolites that were formed by retrogressive metamorphism. Various thermobarometry methods show that top P-T metamorphic condition for the garnet staurolite schists of the Hamedan area was 560 °C in average and 3 to 3.5 kb. According to the results, these rocks can be considered as high T-medium to low P Buchan type metamorphic associations.

Keywords: garnet staurolite schists Mineral chemistry; Chemical composition; Thermobarometry the Hamedan area.

متن فارسی اصل مقاله از صفحه ۳۲۷ تا ۳۳۸ در این شماره به چاپ رسیده است.

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