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Mineral chemistry of tourmaline in quartz-tourmaline veins of Nezamabad area (southwestern Astaneh, Markazi Province, Iran)

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Abstract: Nezamabad region is a part of Boroujerd granitoid complex (western Iran) which has been cut by various quartz-tourmaline veins with approximately 0.5 to 2 m thickness. Mineralogical and electron microprobe analyses of the tourmalines in those veins and quartzdioritic host rock show that they are schorl and dravite one in terms of composition (with a general tendency toward dravite end member) and alkaline and calcic type respectively. The FeO*/ (FeO*+MgO) ratio of the studied tourmalines are between 0.5 to 0.8, demonstrate that the element-rich fluids have originated from ≤ 1 Km for from the veins. Accruing as vein form and showing optical zoning as well as widely varying compositions, they have also more magnesium than iron, fluorine amount similar to hydrothermal veins and tendency away from alkali- and proton-deficient tourmaline. There fore, it can be concluded that the veins are hydrothermal one and have been formed by dehydration of metamorphosed sedimentary rocks and its mixing with granitic fluids in an open chemical system.

Keywords: *tourmaline, mineralogy, Nezamabad, hydrothermal veins.*