

## Turmalín v peraluminických granitech na východním okraji střebočeského plutonického komplexu

### Tourmaline from peraluminous granite on the eastern margin Central Bohemian Plutonic Complex

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#### Abstract

The peraluminous granites form small (1 - 2 m thick) dykes located in the Sedlec granodiorites near the contact with durbachites of type „Čertovo břemeno“ on the eastern margin of the Central Bohemian Plutonic Complex. Two distinct textural types have been distinguished: nodular tourmaline granite and orbicular cordierite granite.

Nodular tourmaline granite contains nodules, up to 6 cm in diameter. Central part of nodules consists of tourmaline, quartz, variable but subordinate amounts of plagioclase, K-feldspar, and fluorapatite. Tourmaline ( $X_{\text{Fe}} = 0.68 - 0.99$ , Al = 6.19 - 6.88 apfu) is typically interstitial between grains of quartz and feldspars and commonly replaces plagioclase. A leucocratic halo surrounding each nodule is similar in both mineralogy and texture to the adjacent granite except of absence of biotite and tourmaline.

Orbicular cordierite granite consists of ellipsoid-shaped orbicules of 4 to 7 cm in length dispersed in a granitic to pegmatitic matrix. The orbicules are formed by cordierite megacryst in the core ( $X_{\text{Fe}} = 0.32 - 0.34$ , Al = 4.01 - 4.07 apfu). Inner rim consists of radial plagioclase crystals ( $\text{An}_{20-28}$ ). Cordierite is partially to totally replaced by tourmaline and/or micas (muscovite, biotite). Tourmaline ( $X_{\text{Fe}} = 0.30 - 0.48$ , Al = 6.16 - 6.58 apfu) is also concentrated in the pegmatite pockets and/or forms small veins mainly in plagioclase at the rims of orbicules.

Tourmaline in the both granite types was formed during the transitional stage from late magmatic to hydrothermal (early solidus) crystallization. Tourmaline nodular granite contains Al-rich schorl with a general progression in late tourmaline generations towards more Fe-rich and Na-deficient compositions and dominant foitite substitution ( $\text{Al}_{\square}\text{Na}_{-1}(\text{Fe},\text{Mg})_{-1}$ ). Chemical composition of tourmaline from the orbicular cordierite granite changes during crystallization from Al-rich dravite towards more Na, Ca, Ti-rich dravite. These changes correspond to the exchange vectors  $\text{Mg Fe}_{-1}$  and  $\text{NaMg Al}_{-1}\square_{-1}$ .

**Key words:** tourmaline, granite, plagioclase-cordierite orbicules, tourmaline nodules, Central Bohemian Plutonic Complex, Czech Republic