

Chemické složení turmalínu z elbaitového pegmatitu Dolní Rožínka

Chemical composition of tourmaline from the Dolní Rožínka elbaite pegmatite

FRANTIŠEK NOVOTNÝ*, MILAN NOVÁK A JAN CEMPÍREK

Ústav geologických věd, Přírodovědecká fakulta, Masarykova univerzita, Kotlářská 2, 611 37 Brno;
*e-mail: 451144@mail.muni.cz

NOVOTNÝ F, NOVÁK M, CEMPÍREK J (2019) Chemické složení turmalínu z elbaitového pegmatitu Dolní Rožínka. Bull Mineral Petrolog 27(1): 38-45 ISSN 2570-7337

Abstract

Chemical composition of tourmaline in the elbaite-subtype granitic pegmatite at Dolní Rožínka records evolution of pegmatitic melt during crystallization. Chemistry of six textural-paragenetic types of tourmaline, including metasomatic tourmaline after biotite, tourmaline + quartz intergrowths, zoned tourmaline from pocket, acicular tourmaline overgrowths on the top of the zoned crystal from pocket, and metasomatic/hydrothermal aggregates and veinlets of Li-tourmaline + quartz were studied using electron microprobe. The tourmaline after biotite is slightly Al-deficient Mg-enriched schorl whereas tourmaline intergrown with quartz is schorl with slightly higher Mg contents and vacancies at the X-site. Cores of tourmalines from pockets are formed by Li-rich schorl whereas rims by Mn-rich elbaite. The zoned crystals from pockets are sometimes overgrown by acicular tourmaline with heterogeneous composition corresponding to elbaite, locally with elevated amounts of Ca and F. Metasomatic tourmaline has very heterogeneous chemical composition enriched in F, Ca, Mn, and Mg, corresponding to schorl, fluor-schorl, elbaite and fluor-elbaite. Evolution of tourmaline in the Li-pegmatite at Dolní Rožínka is in many aspects (such as tourmaline textures and chemical composition) similar to the elbaite-subtype pegmatite at Pikárec (which reached higher amounts of Mn). On the other hand, the elbaite pegmatite at Řečice is texturally and chemically (especially in higher F and Ca contents in tourmaline) rather different.

Keyword: lithium, boron, granitic pegmatite, tourmaline, biotite, elbaite subtype, schorl, electron microprobe

Obdrženo 13. 3. 2019; přijato 16. 5. 2019