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Hydrotermálny bastnäsit-(Ce) zo štôlne Elisabeth pri Gemerskej Polome (Slovenská republika)

Hydrothermal bastnäsite-(Ce) from the Elisabeth adit near Gemerská Poloma (Slovak Republic)

Martin Števko[1,2)]*, Jiří Sejkora[2)] a Zdeněk Dolníček[2)]

*[1)]Ústav vied o Zemi, Slovenská akadémia vied, Dúbravská cesta 9, 840 05 Bratislava, Slovenská republika; *e-mail: msminerals@gmail.com*

[2)]Mineralogicko-petrologické oddělení, Národní muzeum, Cirkusová 1740, 193 00 Praha 9 - Horní Počernice, Česká republika

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Abstract

Bastnäsite-(Ce), ideally $CeCO_3F$, was recently found at the dumps of the Elisabeth adit near Gemerská Poloma, Rožňava Co., Košice Region, eastern Slovakia. It forms orange-brown aggregates up to 2 × 1 cm with vitreous to greasy lustre, which occur in the hydrothermal quartz veins crosscutting the coarse-grained, porphyritic rare metal S-type granite. Bastnäsite-(Ce) is closely associated with white, pale-green to purple fluorite, siderite and minor pyrite. It is hexagonal, space group *P*-62*c* with refined unit-cell parameters: *a* 7.1354(1) Å, *c* 9.7954(2) Å and *V* 431.90(1) Å^3. The empirical formula of bastnäsite-(Ce) from the Gemerská Poloma based on sum of all cations = 1 *apfu* is $(Ce_{0.49}La_{0.22}Nd_{0.15}Pr_{0.05}Sm_{0.03}Th_{0.02}Ca_{0.02}Gd_{0.01}Y_{0.01})_{\Sigma 1.00}(CO_3)_{1.00}F_{0.83}(OH)_{0.17}$. The Raman and infrared spectra of bastnäsite-(Ce) as well as tentative assignment of observed bands are given in this paper. Bastnäsite-(Ce) and associated minerals were formed from the early-hydrothermal post-magmatic fluids related to the adjacent granite.

Key words: *bastnäsite-(Ce), X-ray powder data, chemical composition, Raman and IR spectroscopy, Elisabeth adit, Gemerská Poloma, Slovak Republic*

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