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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Stellerit z Košťálova u Semil (Česká republika)

Stellerite from Košťálov near Semily (Czech Republic)

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Abstract

Stellerite was discovered in an active quarry at Košťálov near Semily (Liberec Region, Czech Republic). The mineral occurs on fractures of Paleozoic basaltic andesite in association with fluorapophyllite-(K), chabazite-Ca and calcite. Stellerite forms clear columnar striated crystals reaching 1.5 mm in size. Unit cell parameters derived from the powder X-ray data are: a 13.586(6) Å, b 18.204(7) Å, c 17.839(12) Å and V 4412(2) Å³. Chemical analyses gave the empirical formula $(\text{Ca}_{3.97}\text{Na}_{0.08}\text{K}_{0.03})_{\Sigma 4.08}(\text{Si}_{28.22}\text{Al}_{7.69})\text{O}_{72} \cdot 28 \text{H}_2\text{O}$. Transparent colourless dipyrmidal and prismatic crystals of fluorapophyllite-(K) are up to 4 mm in size. The chemical analyses correspond to the empirical formula $\text{K}_{0.73}\text{Na}_{0.10}\text{Ca}_{3.98}(\text{Si}_{7.78}\text{Al}_{0.22})_{\Sigma 8.00}\text{O}_{20}(\text{F}_{0.94}\text{OH}_{0.06})_{\Sigma 1.00} \cdot 8 \text{H}_2\text{O}$. Chabazite-Ca with an empirical formula $(\text{Ca}_{1.34}\text{K}_{1.02}\text{Na}_{0.67}\text{Ba}_{0.10}\text{Sr}_{0.01})[\text{Al}_{3.22}\text{Si}_{8.44}\text{O}_{24}] \cdot 12 \text{H}_2\text{O}$ forms intergrowths of colourless rhombohedrons up to 6 mm in size. Chabazite-Ca contains very small, elongated inclusions of baryte. Calcite in groups of colourless to pale cream scalenohedral crystals up to 2 mm in size is the youngest mineral of the mineral assemblage. In the case of stellerite this is the first description within the Czech Republic, in the case of fluorapophyllite-(K) it is the first detailed characterization from the locality of Košťálov.

Key words: zeolite, stellerite, fluorapophyllite-(K), chabazite-Ca, powder X-ray diffraction data, unit-cell parameters, chemical composition, Košťálov, Czech Republic

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