

Agardit-(Ce) ze supergenní zóny ložiska Vrančice u Příbrami (Česká republika)

Agardite-(Ce) from supergene zone of the Vrančice ore deposit near Příbram,
Czech Republic

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Abstract

Samples containing agardite-(Ce) were found in remnants of mine dumps of abandoned ore deposit Vrančice near Příbram, central Bohemia, Czech Republic. Agardite-(Ce) forms radial light green aggregates up to 1 mm in size associated with chrysocolla. Its individual acicular light greenish crystals up to 50 - 200 μm in length are transparent with vitreous luster. Agardite-(Ce) is hexagonal, space group $P6_3/m$, the unit-cell parameters refined from X-ray powder data are: $a = 13.564(3)$, $c = 5.895(2)$ Å, $V = 939.3(4)$ Å³. Chemical analyses yielded the average composition CuO 45.24, CaO 2.24, FeO 0.98, PbO 0.21, Y₂O₃ 1.72, Nd₂O₃ 1.31, Sm₂O₃ 0.47, La₂O₃ 1.13, Ce₂O₃ 2.65, SiO₂ 1.65, As₂O₅ 26.49, P₂O₅ 2.02, H₂O (10.59), F 0.20, O=F -0.08, total (96.83) wt. %, corresponding to empirical formula $(\text{Ca}_{0.42}\text{Ce}_{0.17}\text{Y}_{0.16}\text{Fe}_{0.14}\text{Nd}_{0.08}\text{La}_{0.07}\text{Sm}_{0.02}\text{Pb}_{0.01})_{\Sigma 1.07}\text{Cu}_{5.96}[(\text{AsO}_4)_{1.84}(\text{AsO}_3\text{OH})_{0.57}(\text{PO}_4)_{0.30}(\text{SiO}_4)_{0.29}]_{\Sigma 3.00}[(\text{OH})_{5.73}\text{F}_{0.11}]_{\Sigma 5.84} \cdot 3\text{H}_2\text{O}$ on the basis of $(\text{As}+\text{P}+\text{Si}) = 3$ apfu.

Key words: agardite-(Ce), mixite-group minerals, chemical composition, X-ray powder data, Vrančice ore deposit, Czech Republic