

Arthurit z Huberova pně v Krásně u Horního Slavkova - první výskyt v České republice

Arthurite from Huber stock in Krásno near Horní Slavkov - the first occurrence in the Czech Republic

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Abstract

A rare copper-iron arsenate arthurite, monoclinic $\text{CuFe}^{3+}_2(\text{AsO}_4)_2(\text{OH})_2 \cdot 4\text{H}_2\text{O}$ was found in an old abandoned Sn-W deposit Krásno near Horní Slavkov, Slavkovský les Mountains. This is the first occurrence of this mineral in the Czech Republic. Arthurite occurs there as apple-green radial aggregates in quartz cavities up to 1 mm in size. Its origin is connected to *in-situ* supergene weathering of primary arsenopyrite and primary phosphates and high activity of Cu, Fe and As in supergene fluids. Arthurite is monoclinic, space group $P2_1/c$ with following unit-cell parameters refined from the X-ray powder diffraction data: a 10.102(8), b 9.625(4), c 5.548(4) Å, β 92.2(1)° and V 539.1(6) Å³. Chemical analyses of arthurite correspond to the empirical formula $(\text{Cu}_{1.05}\text{Zn}_{0.02})_{\Sigma 1.07}(\text{Fe}_{1.88}\text{Al}_{0.07})_{\Sigma 1.95}[(\text{AsO}_4)_{1.97}(\text{PO}_4)_{0.03}]_{\Sigma 2.00}(\text{OH})_{2.01} \cdot 4\text{H}_2\text{O}$ on the basis of As+P= 2 apfu.

Key words: arthurite, unit-cell parameters, chemical composition, Huber stock, Krásno near Horní Slavkov, Slavkovský les Mts., Czech Republic

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