PŮVODNÍ PRÁCE/ORIGINAL PAPER

Nesquehonite from the Pezinok-Kolársky vrch antimony deposit, Malé Karpaty Mts. (Slovak Republic)

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Abstract

An uncommon post-mining mineral assemblage with nesquehonite, Sr-rich brandholzite and hörnesite was recently discovered at the Kolársky vrch antimony deposit near Pezinok, Malé Karpaty Mts., Slovakia. Nesquehonite occurs as white opaque pseudomorphs after pre-existing flattened crystals and crystalline aggregates of lansfordite up to 18 mm in size associated with aragonite, gypsum, brandholzite and hörnesite. Its refined unit-cell parameters (for the monoclinic space group $P2_1/n$) are: a 7.694(1) Å, b 5.364(1) Å, c 12.118(2) Å, β 90.33(2)° and V 500.2(1) Å^3. Except of dominant content of Mg only minor amounts of Si were detected in studied nesquehonite. Sr-rich brandholzite occurs as colourless, well developed, tabular pseudohexagonal crystals up to 3 mm in size and its empirical formula based on (Sb+As = 2 *apfu*) is $(Mg_{0.72}Sr_{0.21})_{\Sigma 0.93}(Sb_{1.95}As_{0.05})_{\Sigma 2.00}(OH)_{12}\cdot 6H_2O$. Hörnesite forms microscopic spherical aggregates up to 70 μm enclosed in nesquehonite. It has near end-member composition with empirical formula $(Mg_{3.24}Fe_{0.01})_{\Sigma 3.25}(AsO_4)_{1.93}(SiO_4)_{0.04}(SO_4)_{0.03}\cdot 8H_2O$ (based on As+Si+S = 2 *apfu*). The whole supergene assemblage is a product of post-mining weathering of stibnite and arsenopyrite in carbonate (dolomite) rich environment under near-neutral conditions.

Key words: *nesquehonite, brandholzite, hörnesite, X-ray powder data, chemical composition, Kolársky vrch deposit, Pezinok, Slovak Republic*

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