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Collinsit ze železnorudného dolu v Nučicích, nový minerál pro Českou republiku - popis a Ramanova spektroskopie

Collinsite from the Nučice iron mine, a new mineral for the Czech Republic - description and Raman spectroscopy

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Abstract

A very rare phosphate collinsite was found on historical samples of chamosite from the abandoned iron mine Nučice near Prague, Central Bohemia (Czech Republic) located in Ordovician sediments of the Barrandian area. Collinsite forms white to beige radial aggregates up to 15 mm in size composed by platy crystals with pearly lustre. Its chemical composition corresponds to empirical formula: $(Ca_{1.87}Sr_{0.12}Ba_{0.01})_{\Sigma 2.00}(Mg_{0.57}Fe_{0.41}Al_{0.01})_{\Sigma 0.99}(PO_4)_{2.00}\cdot 2H_2O$ (Sr-rich zones) and $(Ca_{1.98}Sr_{0.01})_{\Sigma 1.99}(Mg_{0.58}Fe_{0.40}Al_{0.01})_{\Sigma 0.99}(PO_4)_{2.00}\cdot 2H_2O$ (Sr-poor zones). Collinsite is triclinic, space group *P*-1, unit-cell parameters refined from X-ray powder diffraction data are *a* 5.734(3), *b* 6.779(3), *c* 5.441(2) Å, *α* 97.33(4)°, *β* 108.52(3)°, *γ* 107.25(3)° and *V* 185.7(1) Å^3. Collinsite was found in association with siderite in fissures of chamosite iron ore.

Key words: *collinsite, messelite, phosphates, chemical composition, powder X-ray diffraction data, unit-cell parameters, Raman spectra, iron deposit, Nučice, Czech Republic*

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