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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Namibit a doprovodná mineralizace fluoritové žíly Nadějná u Kotliny v Krušných horách (Česká republika)

Namibite and accompanying mineralization of fluorite vein Nadějná near Kotlina in the Krušné hory Mts. (Czech Republic)

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Abstract

Supergene Bi mineralization with namibite, bismutoferrite and bismutite was found on a quartz-fluorite vein Nadějná near the Kotlina in the Krušné hory Mts. (Czech Republic). Namibite forms green coatings on the cracks of fluorite vein and more rarely dark green glassy lustrous, hedgehog-shaped aggregates up to 0.2 mm in size formed by flat needle-like crystals. The unit-cell parameters of namibite refined from the powder X-ray data are: a 6.2096(18), b 7.395(2), c 7.4708(18) Å, α 90.1(2)°, β 108.73(15)°, γ 107.45(19)° and V 308.09(15) Å³. Its chemical analyses correspond to the empirical formula $(\text{Cu}_{0.93}\text{Fe}_{0.03}\text{Ca}_{0.01})_{\Sigma 0.97}(\text{BiO})_{1.79}(\text{V}_{0.97}\text{P}_{0.02}\text{Cr}_{0.01})_{\Sigma 1.00}\text{O}_4(\text{OH})_{0.75}$. Bismutoferrite forms yellow powdery aggregates in cracks and in small cavities of fluorite. Its chemical analyses correspond to the empirical formula $(\text{Fe}_{1.91}\text{Cu}_{0.03}\text{Mg}_{0.02}\text{Al}_{0.02}\text{Ca}_{0.01})_{\Sigma 1.99}\text{Bi}_{0.92}(\text{SiO}_4)_{2.00}(\text{OH})_{0.68}$. Bismutite forms yellow-white pseudomorphoses probably after the acicular crystals of primary Bi sulfide (emplectite or bismuthinite) up to 2 mm long in the fluorite vein. Study of Raman spectra was performed for all studied minerals.

Key words: namibite, bismutoferrite, bismutite, powder X-ray diffraction data, unit-cell parameters, chemical composition, Raman spectroscopy, fluorite vein Nadějná, Kotlina, Krušné hory Mts., Czech Republic

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