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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Minerály skupiny neustädteřitu z Jáchymova v Krušných horách (Česká republika)

Neustädteřite group minerals from Jáchymov in the Krušné hory Mts. (Czech Republic)

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Abstract

Neustädteřite and not-yet approved Zn-analogue of neustädteřite (*Zn-neustädteřite*) were found in material from the Geister vein, western part of the Jáchymov ore district, the Krušné hory Mts., Czech Republic. Neustädteřite occurs as orange brown crystalline aggregates in association with walpurgite, bismutite, eulytine, preisingerite and zavaritskite. It is triclinic, space group *P*-1, the unit-cell parameters refined from X-ray powder diffraction data are: *a* 4.551(2), *b* 6.134(4), *c* 9.024(5) Å, α 95.26(6)°, β 99.40(4)°, γ 92.89(5)° and *V* 246.9(2) Å³. Chemical analyses of neustädteřite correspond to the empirical formula $\text{Bi}_{1.89}\text{Fe}_{1.00}(\text{Fe}_{0.53}\text{Al}_{0.19}\text{Zn}_{0.15}\text{Ni}_{0.04}\text{Co}_{0.03}\text{Pb}_{0.02})_{\Sigma 0.96}\text{O}_{1.72}(\text{OH})_{1.77}[(\text{AsO}_4)_{1.76}(\text{PO}_4)_{0.13}(\text{SiO}_4)_{0.11}]_{\Sigma 2.00}$ on the basis of As+P+Si = 4 *apfu*. *Zn-neustädteřite* occurs as brownish red spherical crystalline aggregates, formed by tiny tabular crystals in association with atelestite, eulytine, walpurgite and preisingerite. It is triclinic, space group *P*-1, with the unit-cell parameters refined from X-ray powder diffraction data: *a* 9.175(6), *b* 6.150(2), *c* 9.407(4) Å, α 83.52(3)°, β 70.59(4)°, γ 86.94(4)° and *V* 497.4(5) Å³. Chemical analyses of *Zn-neustädteřite* correspond to the empirical formula $(\text{Bi}_{1.96}\text{Ca}_{0.04})_{\Sigma 2.00}\text{Fe}_{1.00}(\text{Zn}_{0.37}\text{Fe}_{0.22}\text{Ni}_{0.21}\text{Co}_{0.15}\text{Pb}_{0.03}\text{Cu}_{0.02})_{\Sigma 1.00}\text{O}_{1.23}(\text{OH})_{2.73}[(\text{AsO}_4)_{1.92}(\text{PO}_4)_{0.06}(\text{SiO}_4)_{0.02}]_{\Sigma 2.00}$ calculated based on the sum of As+P+Si+V = 2 *apfu*.

Key words: neustädteřite, Zn-analogue of neustädteřite, supergene minerals, Raman spectroscopy, Geister vein, Jáchymov, Krušné hory Mts., Czech Republic

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