PŮVODNÍ PRÁCE/ORIGINAL PAPER

Manganem bohatý beraunit, strunzit a fosfosiderit z historického ložiska Fe-Mn rud Morašice u Přelouče (Česká republika)

Manganese rich beraunite, strunzite and phosphosiderite from historical Fe-Mn ore deposit Morašice near Přelouč (Czech Republic)

Luboš Vrtiška[1,2)]*, Jaromír Tvrdý[1)], Radana Malíková[2)] a Zdeněk Dolníček[2)]

*[1)]Ústav geologických věd, Přírodovědecká fakulta, Masarykova univerzita, Kotlářská 267/2, 611 37 Brno; *e-mail: lubos_vrtiska@nm.cz*

[2)]Mineralogicko-petrologické oddělení, Národní muzeum, Cirkusová 1740, 193 00 Praha 9 – Horní Počernice

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Abstract

A new study of phosphate mineralization from abandoned Fe-Mn deposit Morašice near Přelouč (Železné hory Mts., Czech Republic) provides new analytical data for historically known mineral strunzite as well as newly determined minerals Mn-rich beraunite and phosphosiderite. Phosphate minerals are bound to cracks and cavities in weathered slate rocks. Mn-rich beraunite forms radially fibrous, dark green to yellow-green aggregates up to 1.5 mm in size; its empirical formula is $(Na^{+}_{0.02}Fe^{2+}_{0.72}Mn^{2+}_{0.16})_{\Sigma 0.90}(Fe^{3+}_{4.98}Al^{3+}_{0.02})_{\Sigma 5.00}[(SO_4)_{0.01}(PO_4)_{3.96}(AsO_4)_{0.03}]_{\Sigma 4.00}(OH)_{4.80}\cdot 6H_2O$ and refined unit-cell parameters are *a* 20.656(7), *b* 5.122(3), *c* 19.232(8) Å, *β* 93.6(1)° and *V* 2030.7(6) Å^3. Strunzite in orange-yellow to light yellow radial aggregates and needles up to 5 mm long has an empirical formula $(Na^{+}_{0.01}Fe^{2+}_{0.27}Mn^{2+}_{0.60}Mg^{2+}_{0.01})_{\Sigma 0.89}(Fe^{3+}_{1.98}Al^{3+}_{0.02})_{\Sigma 2.00}[(SO_4)_{0.01}(PO_4)_{1.98}(AsO_4)_{0.01}]_{\Sigma 2.00}(OH)_{1.78}\cdot 6H_2O$ and unit-cell parameters are: *a* 10.236(9), *b* 9.834(6), *c* 7.279(5) Å, *α* 90.27(8)°, *β* 98.25(7)°, *γ* 117.43(7)° and *V* 640.8(5) Å^3. Phosphosiderite occurs as orange to beige crystalline crusts and spherical aggregates up to 0.5 mm and white spherical aggregates up to 0.5 mm in size; its empirical formula is $Fe_{0.94}(PO_4)_{1.00}\cdot 2H_2O$; refined unit-cell parameters are *a* 5.325(4), *b* 9.804(5), *c* 8.709(8) Å, *β* 90.5(6)° and *V* 454.6(6) Å^3.

Key words: *Mn-rich beraunite, strunzite, phosphosiderite, chemical composition, PXRD data, Fe-Mn ore deposit, Morašice, Chvaletice, Přelouč, Czech Republic*

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