

Fluorwavellit a variscit z Počepic u Sedlčan (Česká republika)

Fluorwavellite and variscite from Počepice near Sedlčany (Czech Republic)

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VRTIŠKA L., LOUN J., MALÍKOVÁ R., SEJKORA J. (2016) Fluorwavellit a variscit z Počepic u Sedlčan (Česká republika). *Bull. mineral.-petrolog. Odd. Nár. Muz. (Praha)* 24, 2, 285-297. ISSN 1211-0329.

Abstract

An interesting mineral occurrence of phosphates was found close to the Počepice village near Sedlčany (central Bohemia, Czech Republic). Recently defined fluorwavellite forms white spherical aggregates up to 14 mm across in fissures and cavities of contact metamorphic rocks (quartzite, chert, metagreywacke). It is orthorhombic, space group *Pcnm* with following unit-cell parameters refined from the X-ray powder diffraction data: *a* 9.614(1), *b* 17.360(2), *c* 6.9916(9) Å, *V* 1166.9(3) Å³. Empirical formula of fluorwavellite is possible to express as $(\text{Al}_{2.91}\text{Fe}_{0.03})_{\Sigma 2.94}(\text{PO}_4)_{2.00}(\text{F}_{0.84}(\text{OH})_{0.16})_{\Sigma 1.00}(\text{OH})_{1.83} \cdot 5\text{H}_2\text{O}$. Variscite occurs as light blue to light pink, red, white and colorless transparent crusts, spherical aggregates and columnar and dipyrmidal crystals. All studied types belong to variscite of Messbach type with following orthorhombic unit-cell parameters: *a* 9.901(1), *b* 9.6584(9), *c* 17.178(2) Å, *V* 1642.6(4) Å³ (light pink sample); *a* 9.902(1), *b* 9.660(2), *c* 17.177(2) Å, *V* 1643.1(5) Å³ (light blue sample); *a* 9.901(2), *b* 9.659(2), *c* 17.179(3) Å, *V* 1642.8(6) Å³ (red sample) and *a* 9.903(2), *b* 9.657(3), *c* 17.181(4) Å, *V* 1642.9(7) Å³ (white to colorless sample). Their empirical formulae are: $\text{Al}_{0.98}(\text{PO}_4)_{1.00}\text{F}_{0.05} \cdot 2\text{H}_2\text{O}$ (light pink and red sample); $\text{Al}_{0.97}(\text{PO}_4)_{1.00}\text{F}_{0.04} \cdot 2\text{H}_2\text{O}$ (light blue sample); $\text{Al}_{1.00}(\text{PO}_4)_{1.00}\text{F}_{0.05} \cdot 2\text{H}_2\text{O}$ (white to colorless). Phosphates was found in association with *Mn-oxides* (hollandite, cryptomelane, asbolane, lithiophorite and undescribed Co-Mn-Mn dominant member of coronadite group).

Key words: fluorwavellite, variscite, phosphate occurrence, Mn-oxides, unit-cell parameters, chemical composition, Počepice, Sedlčany, Czech Republic

Obdrženo: 1. 11. 2016; přijato 22. 12. 2016