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Dve nové lokality pyromorfitu v Slovenskej republike: Chvojnica a Hnilčík

Two new localities of pyromorphite in Slovak Republic: Chvojnica and Hnilčík

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Abstract

Two new localities of pyromophite were recently discovered at the Chvojnica base metals occurrence in the Strážovské vrchy Mts. (Tatric Unit), and at the supergene zone of the Piata siderite-type hydrothermal vein near Hnilčík (Spišsko-gemerské rudohorie Mts., Gemeric Unit), Slovak Republic. At the Chvojnica occurrence pyromorphite occurs as bright green crystalline crusts and radial aggregates up to 3 mm developed in cavities and fractures in the porous quartz gangue with relicts of primary galena. It is associated with minor crystalline coatings of cerussite. The refined unit-cell parameters of pyromorphite from Chvojnica (for the hexagonal space group $P6_3/m$) are *a* 9.9750(2) Å, *c* 7.3569(2) Å and *V* 633.93(2) Å^3. Except of dominant contents of Pb, P and Cl, only minor amounts of Ca (up to 0.10 *apfu*), Al (up to 0.05 *apfu*), Fe (up to 0.04 *apfu*), As (up to 0.05 *apfu*) and S (up to 0.02 *apfu*) were detected in studied pyromorphite. At the Hnilčík, pyromorphite occurs rarely in the cavities of the cavernous quartz-limonite gangue in the supergene zone of the Piata vein. It forms colourless to very light green prismatic crystals up to 2 mm in size, or crystalline aggregates associated with goethite, Mn oxides and malachite. The refined unit-cell parameters of pyromorphite from Hnilčík (for the hexagonal space group $P6_3/m$) are *a* 9.9484(15) Å, *c* 7.315(2) Å, *V* 627.0(2) Å^3 (Ca-poor) and *a* 9.8983(6) Å, *c* 7.2589(8) Å, *V* 615.92(9) Å^3 (Ca-rich). Pyromorphite from Hnilčík shows strong chemical zoning caused by variation of Pb and Ca contents, with outer parts of the crystals enriched in Ca. Contents of Ca are ranging between 0.09 to 0.96 *apfu*, with the atomic Pb/(Pb+Ca) ratio ranging from 0.98 to 0.81, which is close to the compositional boundary with phosphohedyphane. Interesting are also elevated concentrations of Cu reaching up to 0.07 *apfu*. Other minor elements detected in pyromorphite from Hnilčík are As (up to 0.12 *apfu*), Al, V and S (all up to 0.02 *apfu*).

Key words: *pyromorphite, X-ray powder data, chemical composition, supergene minerals, Chvojnica, Hnilčík, Slovak Republic*

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