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PŮVODNÍ PRÁCE/ORIGINAL PAPER

# Kleemanit, vzácný fosforečnan z Krásna u Horního Slavkova, Česká republika

Kleemanite, a rare phosphate from Krásno near Horní Slavkov, Czech Republic

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## Abstract

A very rare secondary Zn-Al phosphate, kleemanite, was found in association with Al-rich chalcosiderite and krásnoite on samples from the Huber stock in the Krásno deposit near Horní Slavkov (Karlovy Vary Region, Czech Republic). Kleemanite forms small white needle-like to fibrous crystals clustering into urchin-like aggregates up to 2 mm in size. Individual crystals reach a length of up to 0.5 mm. The mineral grows on the walls of the corrosion cavity of the fluorapatite aggregate in quartz gangue. Its chemical composition corresponds to the empirical formula  $Zn_{1.02}(Al_{2.04}Fe_{0.09})_{\Sigma 2.13}(PO_4)_{2.00}[(OH)_{2.41}(F)_{0.04}]_{\Sigma 2.45} \cdot 3H_2O$ . Kleemanite is monoclinic, unit-cell parameters refined from X-ray powder diffraction data are  $a$  7.286(8),  $b$  7.194(5),  $c$  9.774(8) Å,  $\beta$  110.2(6)° and  $V$  480.9(7) Å<sup>3</sup>. The Raman spectrum of kleemanite has not been published before and is included in this paper.

**Key words:** kleemanite, chemical composition, X-ray powder data, Raman spectroscopy, phosphates, Krásno near Horní Slavkov, Czech Republic

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