

Výskyt boltwooditu na uranovém ložisku Kladská (Česká republika)

The occurrence of boltwoodite at the uranium deposit Kladská (Czech Republic)

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Abstract

Rare uranyl mineral boltwoodite, was found in the mine dump material at the abandoned uranium deposit Kladská, Slavkovský les Mountains, western Bohemia, Czech Republic. It occurs there as yellow to yellowish orange crystalline aggregates, veinlets and coatings in hydrothermally altered porphyric granite in association with uranophane. Its aggregates are usually composed from very thin acicular crystals. Well-formed boltwoodite crystals up to 2 mm in length in tiny cavities of crystalline aggregates of boltwoodite were observed only rarely. It is monoclinic, space group $P2_1/m$, the unit-cell parameters refined from X-ray powder diffraction data are: a 7.072(7), b 7.060(4), c 6.654(6) Å, β 105.06(7)° and V 320.8(5) Å³. Chemical analyses of boltwoodite correspond to the empirical formula $(K_{0.62}Pb_{0.04})_{\Sigma 0.66}(UO_2)_{0.96}(SiO_3OH)_{1.00} \cdot 1.5H_2O$ on the basis of $Si = 1$ apfu. The Raman spectrum of boltwoodite and its tentative interpretation are given. The origin of boltwoodite at Kladská is interpreted as product of late hydrothermal fluids which altered uraninite and granitic rocks.

Key words: boltwoodite, X-ray powder data, chemical composition, Raman spectroscopy, uranium deposit, Kladská, Czech Republic

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