PŮVODNÍ PRÁCE/ORIGINAL PAPER

Kryštalochemické štúdium a Ramanova spektroskopia arzenolitu z Dobšinej (Slovensko)

Crystal chemistry and Raman spectroscopy of arsenolite from Dobšiná (Slovakia)

Daniel Ozdín[1)]*, Klaudia Lásková[1)], Gabriela Kučerová[1)] a Lenka Váchová[2)]

*[1)]Katedra mineralógie a petrológie, Prírodovedecká fakulta, Univerzita Komenského v Bratislave, Ilkovičova 6, 842 15 Bratislava; *e-mail: daniel.ozdin@uniba.sk*
[2)]Paleontologické oddělení, Národní muzeum, Cirkusová 1740, 193 00 Praha 9 - Horní Počernice, Česká republika

Ozdín D, Lásková K, Kučerová G, Váchová L (2018) Kryštalochemické štúdium a Ramanova spektroskopia arzenolitu z Dobšinej (Slovensko). Bull Mineral Petrolog 26(2): 206-212. ISSN 2570-7337

Abstract

Arsenolite is a cubic form of As_2O_3 with space group *Fd*3*m* and a diamond - type structure which is mostly chemically homogeneous with only arsenic cations in its structure. Arsenolite from Dobšiná is characterized by increased amounts of Ni (up to ~ 4.4 wt. % NiO; 0.340 *apfu*), Mg (MgO content up to 0.51 wt. %; 0.073 *apfu*) and Ca (CaO content 0.17 wt. %; 0.017 *apfu*). In most cases, it forms simple isometric cubic crystals with mainly octahedral, but very rarely also hexahedral faces. Crystals with longitudinally elongated faces (1-11) are also usual. The PXRD pattern of arsenolite from Dobšiná gave following unit-cell dimensions: 1) a = 11.0497(8) Å and V = 1349.1(3) Å^3; 2) a = 11.0742(4) Å and V = 1358.1(2) Å^3. In the diffraction patterns, two characteristic background bulges occur, which probably indicate nanocrystalline imogolite. Based on unit-cell dimensions, arsenolites from the mines and also from the waste dumps were formed at temperatures below 30°C. At the Dobšiná deposit, arsenolite is formed as the latest supergene mineral ever after the crystallization of Ni and Co arsenates. It originated from the decomposition of annabergite or in paragenesis with erythrite and gypsum.

Key words: *arsenolite, Raman spectroscopy, PXRD, supergene arsenates, Dobšiná, Slovakia*
Obdrženo 19. 11. 2018; přijato 20. 12. 2018