PŮVODNÍ PRÁCE/ORIGINAL PAPER

Vanadem, niklem a olovem bohaté fylosilikáty z U-Ni-Co-As-Ag/Bi ložiska Zálesí u Javorníka

Vanadium-, nickel-, and lead-rich phyllosilicates from U-Ni-Co-As-Ag/Bi deposit Zálesí near Javorník

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Abstract

Two types of phyllosilicates showing different paragenetic position and chemical composition are described from dump ore samples of the Zálesí deposit. The first type is represented by a vanadium-rich (1.1 to 11.7 wt. % V_2O_3) mica-like phase with chemical composition close to K-depleted (alumino)celadonite, whose aggregates are enclosed in the oldest parts of the uraninite aggregates. Therefore this phyllosilicate belongs genetically to the oldest uraninite mineralization stage. Another type of phyllosilicate is formed by trioctahedral chlorite containing admixtures of mica (perhaps celadonite) and/or smectite. The chemical composition of this second phyllosilicate is very complex, showing in addition to common constituents (i.e., Si, Al, Fe, Mg, Mn, Ca, K) also elevated to high contents of Ni (1.9 - 8.1 wt. % NiO), Pb (2.3 - 10.6 wt. % PbO), Co (0.8 - 2.3 wt. % CoO), Zn (0.4 - 1.0 wt. % ZnO), Cu (0.2 - 1.7 wt. % CuO) and NH_3 [0.2 - 1.1 wt. % $(NH_4)_2O$]. This phyllosilicate together with calcite and segnitite fills up the “desiccation” cracks in uraninite as well as veinlets cutting gangue minerals, which clearly indicates its genetic pertinence to younger (i.e., arsenide or sulphide) mineralization stages of the Zálesí deposit. The chemical composition of chlorite is in accordance with published formation temperatures of ore mineralization of the Zálesí deposit (<50 to 130 °C). Both studied phases belong to the chemically most complex phyllosilicates if compared with those from other uranium deposits of the Bohemian massif.

Key words: *V-rich mica, Ni-Pb-rich chlorite, segnitite, U-Ni-Co-As-Ag-Bi deposits, Zálesí, Bohemian Massif, Czech Republic*

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