

Príspevok k chemickému zloženiu libethenitu z typovej lokality: ložisko Podlipa, Ľubietová (Slovenská republika)

Contribution to the chemical composition of libethenite from the type locality: Podlipa copper deposit, Ľubietová (Slovak Republic)

MARTIN ŠTEVKO^{1)*}, JIŘÍ SEJKORA²⁾ A ŠTEFAN SÚLOVEC³⁾

¹⁾UK Mining Ventures Ltd., No. 1, The Old Coach Yard, East Coker; Somerset, BA22 9HY; Great Britain;

*e-mail: msminerals@gmail.com

²⁾Mineralogicko-petrologické oddělení, Národní muzeum, Cirkusová 1740, 193 00 Praha 9 - Horní Počernice, Česká republika

³⁾Stará dedina 40/37, 951 05 Veľký Cetín, Slovenská republika

ŠTEVKO M, SEJKORA J, SÚLOVEC Š (2017) Príspevok k chemickému zloženiu libethenitu z typovej lokality: ložisko Podlipa, Ľubietová (Slovenská republika). Bull Mineral Petrolog 25(2): 252-259 ISSN: 2570-7337

Abstract

This paper is dealing with chemical composition of various morphological forms of libethenite from the type locality, Podlipa copper deposit near Ľubietová, Slovakia. The unit-cell parameters of different types of libethenite as well as relationships with other associated supergene minerals are also presented. Libethenite is one of the most common supergene minerals at the locality studied. It occurs mostly as developed dark green, olive green to pale green pseudo-octahedral to short prismatic crystals up to 9.5 mm in size, which are often grouped to aggregates, drusy coatings or crystalline crusts on fissures and cavities of quartz or host rocks. Other morphological forms of libethenite e.g., crystals with phantoms, hemispherical aggregates up to 11 mm with radial internal structure or olive green acicular crystals up to 5 mm in size were also observed, but are comparably rare. Libethenite is predominantly associated with pseudomalachite (or its other polymorphs: reichenbachite and ludjibaite), Fe and Mn-oxides. Its association with malachite is also possible, but is not so common. Observed paragenetic relationships of libethenite and minerals of pseudomalachite group indicate that prevalent amount of pseudomalachite group minerals is slightly older than libethenite and only minor amounts of them crystallized later (possibly the second generation?), hence the pseudomorphoses of pseudomalachite after libethenite are very rare. Notable vertical difference in a distribution of libethenite and minerals of pseudomalachite group across the supergene zone *in-situ*, which is well uncovered at the Rainer mining field, was not confirmed. Libethenite from Ľubietová is mostly homogenous in BSE, only sporadically it shows strong oscillatory to irregular chemical zoning, which is caused by PA_{S_1} isomorphism. Except of dominant Cu contents all morphological forms of libethenite has minor contents of Fe (up to 0.03 *apfu*) and Al (up to 0.01 *apfu*). Nearly all studied samples contained at least minor amounts of As, which are typically up to 0.02 *apfu*, but two samples of acicular crystals has elevated and very variable As content (from 0.01 to 0.58 *apfu*, with one spot already representing P-rich olivenite). Minor amounts of Si (up to 0.01 *apfu*) were also observed in several samples.

Key words: supergene minerals, libethenite, olivenite, olivenite-libethenite series, olivenite group, X-ray powder data, chemical composition, type locality, Podlipa deposit, Ľubietová, Slovak Republic

Obdrženo: 8. 11. 2017; přijato 22. 12. 2017