

Philipsburgit z Krásna u Horního Slavkova, Slavkovský les (Česká republika)

Philipsburgite from Krásno near Horní Slavkov, Slavkovský les Mts. (Czech Republic)

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Abstract

A rare mineral philipsburgite, monoclinic $(\text{Cu,Zn})_6(\text{AsO}_4, \text{PO}_4)_2(\text{OH})_6 \cdot \text{H}_2\text{O}$, was found in an old abandoned Sn-W deposit Krásno near Horní Slavkov, Slavkovský les Mountains (Czech Republic). Philipsburgite occurs there as dark green radial aggregates filling quartz cavities up to 10 x 7 x 5 mm in size and as flattened crystals forming spherical aggregates up to 4 mm across in association with pseudomalachite, Zn rich libethenite and olivenite. Its origin is connected to *in-situ* supergene weathering of primary arsenopyrite and primary phosphates and high activity of Cu, Zn, As and P in supergene fluids. Philipsburgite is monoclinic, space group $P2_1/c$ with following unit-cell parameters refined from the X-ray powder diffraction data: a 13.329(4), b 9.200(2), c 10.690(3) Å, β 96.91(5)° and V 1203.4(6) Å³. Its chemical analyses correspond to the empirical formula $(\text{Cu}_{4.64}\text{Zn}_{1.08}\text{Al}_{0.01})_{\Sigma 5.73}[(\text{AsO}_4)_{4.107}(\text{PO}_4)_{0.92}(\text{SiO}_4)_{0.01}]_{\Sigma 2.00}(\text{OH})_{5.45} \cdot \text{H}_2\text{O}$ on the basis of $\text{As}+\text{P}+\text{Si} = 2$ apfu.

Key words: philipsburgite, pseudomalachite, libethenite, Cu-arsenates, Cu-phosphates, unit-cell parameters, chemical composition, Krásno near Horní Slavkov, Slavkovský les Mts., Czech Republic

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