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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Mineralogie antimonového výskytu Mikulovický vrch u Kadaně (Česká republika)

Mineralogy of the antimony occurrence Mikulovický vrch near Kadaň (Czech Republic)

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Abstract

Two rare sulfosalt minerals, fülöppite and plagionite, have been determined in samples from a small abandoned Sb occurrence Mikulovický vrch near Kadaň, northern Bohemia, Czech Republic. The more abundant fülöppite forms grey aggregates (up to 5 mm in size) with metallic lustre in quartz gangue and rare crystals up to 1.5 mm across in association with stibnite, plagionite, sphalerite, pyrite and arsenopyrite. Fülöppite is monoclinic, space group C2/c with refined unit-cell parameters: a 13.443(2), b 11.737(2), c 16.953(2) Å, β 94.69(1)° and V 2665.9(5) Å³. Its empirical formula (mean of 93 point analyses) is $(\text{Pb}_{2.80}\text{Sn}_{0.01}\text{Hg}_{0.01})_{\Sigma 2.82}\text{Sb}_{8.18}\text{S}_{14.99}$. Two types of plagionite were found as irregular aggregates up to 200 µm in size in quartz gangue, usually in association with fülöppite. The first rarer one is close to the ideal composition with empirical formula (mean of 10 point analyses) $(\text{Pb}_{4.90}\text{Hg}_{0.01})_{\Sigma 4.91}\text{Sb}_{8.07}\text{S}_{17.02}$; the second is distinctly Pb-poor with the calculated N homologue number in the range of 1.37 - 1.74 and empirical formula (mean of 62 point analyses) $(\text{Pb}_{4.31}\text{Sn}_{0.02}\text{Hg}_{0.01})_{\Sigma 4.34}\text{Sb}_{8.53}\text{S}_{17.13}$. Determination of fülöppite and Pb-poor plagionite were also confirmed by Raman spectroscopy. Gypsum, valentinite, native sulphur and jarosite was detected as products of weathering of primary mineralization.

Key words: fülöppite, plagionite, powder X-ray diffraction data, unit-cell parameters, chemical composition, Raman spectroscopy, Mikulovický vrch near Kadaň, Czech Republic

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