

НОВЫЕ МИНЕРАЛЫ

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АБРАМОВИТ $\text{Pb}_2\text{SnInBiS}_7$ — НОВЫЙ МИНЕРАЛ ИЗ ФУМАРОЛ ВУЛКАНА КУДРЯВЫЙ (КУРИЛЬСКИЕ ОСТРОВА)¹

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M. V. KUZNETSOVA, T. I. GOLOVANOVA. ABRAMOVITE, $\text{Pb}_2\text{SnInBiS}_7$ — THE NEW MINERAL
FROM FUMAROLES OF KUDRYAVY VOLCANO (KURILY ISLANDS)

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The new mineral abramovite has been found in the fumarolic crust on Kudryavy volcano, at Iturup Island (Kurily Islands, Russia). It associates there with pyrrhotite, pyrite, wurtzite, galena, halite, sylvite and anhydrite. Abramovite occurs as tiny elongated lamellar-shaped crystals, up to 1 mm length and 0.2 mm width (average 300×50 mkm); they form chaotic intergrowths in a narrow zone of fumarolic crusts at temperature about 600 °C. Most of crystals are slightly striated parallel to elongation. The mineral is silver-grey with metallic luster. In reflected light abramovite is white with a slight grey tint. It has weak birefractance; anisotropism is distinct without color effect. Streak is black. Electron microprobe analyses gave S 20.66, Se 0.98, Cu 0.01, Cd 0.03, In 11.40, Sn 12.11, Pb 37.11, Bi 17.30, with total sum 99.60 (wt %). The empirical formula, calculated on 12 atoms, is $\text{Pb}_{1.92}\text{Sn}_{1.09}\text{In}_{1.06}\text{Bi}_{0.89}(\text{S}_{6.90}\text{Se}_{0.13})_{7.03}$. Idealized formula is $\text{Pb}_2\text{SnInBiS}_7$. The strongest eight lines of powder diffraction pattern [d in Å (J) (hkl)] are: 5.90 (36) (100), 3.90 (100) (111), 3.84 (71) (112), 3.166 (26) (114), 2.921 (33) (115), 2.902 (16) (200), 2.329 (15) (214), 2.186 (18) (125). SAED patterns of abramovite are quite similar to those of the cylindrite homologous series minerals. The mineral is characterized by non-commensurate structure composed of regular alternation of two types of layers: pseudo-tetragonal and pseudo-hexagonal. The structural parameters were determined from SAED patterns and X-ray powder diffraction data: for pseudo-tetragonal subcell $a = 23.4$ (3) Å, $b = 5.77$ (2) Å, $c = 5.83$ (1) Å, $\alpha = 89.1$ (5)°, $\beta = 89.9$ (7)°, $\gamma = 91.5$ (7)°, $V = 790$ (8) Å³; for pseudo-hexagonal subcell $a = 23.6$ (3) Å, $b = 3.6$ (1) Å, $c = 6.2$ (1) Å, $\alpha = 91$ (2)°, $\beta = 92$ (1)°, $\gamma = 90$ (2)°, $V = 532$ (10) Å³. Triclinic cell type, space group P(1). The mineral is named in honor of Dmitry Abramov, Russian mineralogist. Type material is deposited in Fersman Mineralogical Museum RAS, Moscow.