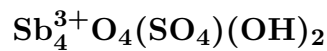


Klebelsbergite



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Crystal Data: Orthorhombic. *Point Group:* $mm2$. Crystals are platy, flattened on $\{010\}$, or acicular, elongated along $[001]$, to 1 cm; rarely isolated, typically in bladed radial to tufted aggregates.

Physical Properties: *Tenacity:* Brittle. Hardness = n.d. VHN = 200 (10 g load). D(meas.) = 4.62(6) D(calc.) = 4.67–4.69 May be weakly magnetic if iron is present as an impurity.

Optical Properties: Semitransparent. *Color:* Colorless, pale yellow, yellow-orange, pink. *Streak:* White to yellow. *Luster:* Vitreous to silky. *Optical Class:* Biaxial (-). *Orientation:* $X = b$; $Y = c$; $Z = a$. $\alpha = \text{n.d.}$ $\beta = \sim 1.95$ $\gamma = \text{n.d.}$ $2V(\text{meas.}) = \sim 70^\circ$

Cell Data: *Space Group:* $Pc2_1b$. $a = 11.279(2)$ $b = 14.909(3)$ $c = 5.7648(6)$ $Z = 4$

X-ray Powder Pattern: Baia Sprie, Romania. 3.131 (vs), 6.22 (s), 3.892 (s), 3.545 (s), 3.150 (s), 2.830 (s), 2.435 (s)

Chemistry:	(1)	(2)
SO ₃	8.0	11.75
Sb ₂ O ₅	84.8	85.60
Fe ₂ O ₃	0.7	
H ₂ O		2.65
Total		100.00

(1) Baia Sprie, Romania; by electron microprobe, partial analysis, here converted from an elemental analysis, valence determination of Fe by microchemistry found $\text{Fe}^{3+} \gg \text{Fe}^{2+}$, $(\text{OH})^{1-}$ determined present by IR. (2) $\text{Sb}_4\text{O}_4(\text{SO}_4)(\text{OH})_2$.

Occurrence: An alteration product of stibnite in antimony deposits.

Association: Stibnite, valentinite, cervantite, kermesite, stibiconite, coquandite, peretaite, onoratoite, cetineite.

Distribution: In Romania, from Baia Sprie (Felsőbánya). In Italy, in Tuscany, at the Cetine mine, 20 km southwest of Siena; in the Pereta mine, Scansano; and at Micciano, near Larderello.

Name: Honoring Kunó Klebelsberg (1875–1932), Hungarian Minister of Education.

Type Material: Hungarian Natural History Museum, Budapest, Hungary, A85135; National Museum of Natural History, Washington, D.C., USA, R6365, B12631, B12640, B12647, 137949.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 583. (2) Nakai, I. and D.E. Appleman (1980) Klebelsbergite, $\text{Sb}_4\text{O}_4(\text{OH})_2\text{SO}_4$: redefinition and synthesis. *Amer. Mineral.*, 65, 499–505. (3) Cipriani, N., S. Menchetti, and C. Sabelli (1980) Klebelsbergite and another antimony mineral from Pereta, Tuscany, Italy. *Neues Jahrb. Mineral., Monatsh.*, 223–229. (4) Menchetti, S. and C. Sabelli (1980) The crystal structure of klebelsbergite, $\text{Sb}_4\text{O}_4(\text{OH})_2(\text{SO}_4)$. *Amer. Mineral.*, 65, 931–935.