Felsőbányaite $Al_4(SO_4)(OH)_{10}\cdot 4H_2O$

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* 2. As minute thin tabular crystals, typically in spherulitic aggregates, to 3 mm.

Physical Properties: *Cleavage:* {001}, perfect; {100} and {010}, observed. Hardness = 1.5 D(meas.) = 2.33–2.35 D(calc.) = [2.20]

Optical Properties: Semitransparent. *Color:* Colorless, pale yellow; colorless in transmitted light. *Luster:* Vitreous, pearly on cleavages.
Optical Class: Biaxial (+). *Orientation:* $X \simeq a$; $Y = b$; $Z = c$. *Dispersion:* $r > v$. $\alpha = 1.516(3)$ $\beta = 1.518(3)$ $\gamma = 1.533(5)$ 2V(meas.) = 48(2)°

Cell Data: *Space Group:* $P2_1$. $a = 13.026(1)$ $b = 10.015(1)$ $c = 11.115(1)$ $\beta = 104.34(1)°$ Z = 4

X-ray Powder Pattern: Baia Sprie, Romania.
4.79 (10), 4.64 (10), 2.27 (5), 3.67 (4), 2.71 (4), 2.45 (4), 5.96 (3)

Chemistry:

	(1)	(2)
SO_3	16.47	17.95
Al_2O_3	45.63	45.71
H_2O	37.27	36.34
Total	99.37	100.00

(1) Baia Sprie, Romania; average of two analyses. (2) $Al_4(SO_4)(OH)_{10}\cdot 4H_2O$.

Occurrence: A rare product of oxidation of marcasite ores.

Association: Marcasite, stibnite, barite, quartz.

Distribution: In Romania, from Cavnic (Kapnikbánya), near Baia Sprie.

Name: For Baia Sprie, Romania (formerly Felsőbánya, Hungary).

Type Material: Natural History Museum, Vienna, Austria, A.x.323.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 585. (2) Koch, S. and I. Sarudi (1964) Data on felsöbányaite. Acta Mineral. Petrog. Univ. Szegediensis, 16, 49–53. (3) Farkas, L. and F. Pertlik (1997) Crystal structure determinations of felsöbányaite and basaluminite, $Al_4(SO_4)(OH)_{10}\cdot 4H_2O$. Acta Mineral. Petrog. Univ. Szegediensis, 38, 5–15.