Bílinite $Fe^{2+}Fe_2^{3+}(SO_4)_4 \cdot 22H_2O$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Fibrous crystals, to 0.03 mm, in radial aggregates.

Physical Properties: Hardness = ∼2 D(meas.) = 1.875–1.99 D(calc.) = [1.99] Soluble in H_2O.

Optical Properties: Semitransparent. *Color:* White to yellowish; colorless in transmitted light. *Luster:* Silky.
Optical Class: Biaxial (–). *Orientation:* Inclined extinction 33°–39°. α = 1.480–1.482 β = n.d. γ = 1.489–1.493 2V(meas.) = n.d.

Cell Data: *Space Group:* $P2_1/c$. $a = 6.208$ $b = 24.333$ $c = 21.255$ $\beta = 100.3°$ Z = 4

X-ray Powder Pattern: Světec, Czech Republic. (ICDD 25-1153).
4.31 (100), 3.51 (100), 4.84 (50), 4.10 (40), 4.96 (30), 3.29 (30), 5.48 (25)

Chemistry:

	(1)	(2)
SO_3	34.87	33.78
Fe_2O_3	15.88	16.84
FeO	6.93	7.58
MgO	0.13	
Na_2O	0.29	
H_2O	41.77	41.80
Total	99.87	100.00

(1) Světec, Czech Republic. (2) $Fe^{2+}Fe_2^{3+}(SO_4)_4 \cdot 22H_2O$.

Mineral Group: Halotrichite group.

Occurrence: An alteration of iron sulfide in lignite (Světec, Czech Republic); a post-mine mineral with other iron sulfates (Nikitov deposits, Ukraine).

Association: Melanterite (Nikitov deposits, Ukraine).

Distribution: From Světec (Schwaz), near Bílina, Czech Republic. In the Nikitov mercury deposits, Ukraine. From the Higgins mine, Bisbee, Cochise Co., Arizona, and at Arco, Butte Co., Idaho, USA. From the Chiricas mine, Malargüe district, Mendoza Province, Argentina.

Name: For its first-noted occurrence near Bílina, Czech Republic.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 529. (2) Bol'shakov, A.P. and L.I. Ptushko (1969) Alteration products of melanterite from Nikitov mercury ore deposits. Zap. Vses. Mineral. Obshch., 3, 288–294 (in Russian).