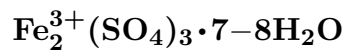


# Kornelite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Crystals are lathlike, flattened on {010}, acicular, elongated along [001], to several mm, with about 15 forms reported; in radial fibrous, globular, or tufted aggregates; in crusts. *Twining:* On {100}, polysynthetic.

**Physical Properties:** *Cleavage:* On {100}. Hardness = n.d.  $D(\text{meas.}) = 2.306$   
 $D(\text{calc.}) = [2.254]$  Soluble in  $\text{H}_2\text{O}$ .

**Optical Properties:** Semitransparent. *Color:* Pale rose-pink to violet under artificial light.  
*Luster:* Silky if fibrous.  
*Optical Class:* Biaxial (+). *Orientation:*  $Z = b$ ;  $X \wedge c = 20(2)^\circ$ . *Dispersion:*  $r > v$ , perceptible.  
 $\alpha = 1.567$   $\beta = 1.581$   $\gamma = 1.638$   $2V(\text{meas.}) = 49^\circ-62^\circ$

**Cell Data:** *Space Group:*  $P2_1/n$ .  $a = 14.30(1)$   $b = 20.12(2)$   $c = 5.425(4)$   $\beta = 96.8(1)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** Tintic Standard mine, Utah, USA.  
10.0 (FFF), 6.64 (FF), 4.67 (FF), 4.30 (F), 3.14 (F), 4.39 (mF), 3.50 (mF)

Chemistry:	(1)	(2)	(3)
$\text{SO}_3$	43.88	45.67	44.15
$\text{Fe}_2\text{O}_3$	29.72	30.36	29.36
$\text{H}_2\text{O}$	26.40	23.97	26.49
Total	[100.00]	100.00	100.00

(1) Tintic Standard mine, Utah, USA; recalculated to 100% from an original total of 99.82%, after deduction of 1.48% soluble and insoluble residue. (2)  $\text{Fe}_2(\text{SO}_4)_3 \cdot 7\text{H}_2\text{O}$ .  
(3)  $\text{Fe}_2(\text{SO}_4)_3 \cdot 8\text{H}_2\text{O}$ .

**Occurrence:** An uncommon secondary mineral formed by oxidation of pyrite.

**Association:** Voltaite, coquimbite (Smolník, Slovakia); coquimbite, römerite, copiapite, voltaite, rhomboclase (Copper Queen mine, Arizona, USA).

**Distribution:** From Smolník (Szomolnok), 16 km northeast of Rožňava, Slovakia. On Mt. Kozhokh, Bulgaria. From the Lanjarón mineral springs, Granada, Spain. In the USA, at the Tintic Standard mine, near Dividend, East Tintic district, Utah Co., Utah; in the Copper Queen mine, Bisbee, Cochise Co., Arizona; at the Island Mountain mine, Trinity Co., and from Coso Hot Springs, Inyo Co., California.

**Name:** To honor Kornel Hlavacsek (1835–1914), Hungarian mining engineer at the pyrite mines, Banská Štavnica, Slovakia.

**Type Material:** Natural History Museum, Budapest, Hungary, destroyed in 1956; topotypes remain.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 530–532. (2) Robinson, P.D. and J.H. Fang (1973) Crystal structures and mineral chemistry of hydrated ferric sulphates. III. The crystal structure of kornelite. Amer. Mineral., 58, 535–539. (3) Cesbron, F. (1964) Contribution à la minéralogie des sulfates de fer hydratés. Bull. Soc. fr. Minéral., 87, 125–143 (in French).