

Crystal Data: Monoclinic. *Point Group:* *m*. Rarely as crystals, flattened on {010}, elongated along [001], showing {110}, {010}, {011}, { $\bar{1}12$ }, several other forms. Commonly acicular, fibrous, to 1.5 cm; may be botryoidal to stalactitic.

Physical Properties: *Cleavage:* On {010}, perfect. *Fracture:* Uneven. *Tenacity:* Flexible. Hardness = 2–2.5 D(meas.) = 2.53–2.725 D(calc.) = 2.703

Optical Properties: Transparent to translucent. *Color:* Colorless, white, pale gray; colorless in transmitted light. *Luster:* Vitreous, pearly on cleavages.

Optical Class: Biaxial (-). *Orientation:* $Z = b$; $X \wedge c = -29^\circ$. *Dispersion:* $r > v$. $\alpha = 1.583$
 $\beta = 1.589$ $\gamma = 1.594$ $2V(\text{meas.}) = 79^\circ 24'$

Cell Data: *Space Group:* *Ia*. $a = 5.9745(5)$ $b = 15.4340(15)$ $c = 6.2797(6)$
 $\beta = 114^\circ 50(1)'$ $Z = 4$

X-ray Powder Pattern: Sainte-Marie-aux-Mines, France.
4.30 (10), 7.7 (9), 2.70 (9), 2.66 (9), 3.08 (8), 3.02 (8), 5.1 (7)

Chemistry:	(1)	(2)
P ₂ O ₅	0.30	
As ₂ O ₅	50.54	53.19
SiO ₂	0.70	
Fe ₂ O ₃	0.35	
MgO	0.50	
CaO	23.90	25.96
H ₂ O	23.80	20.85
Total	100.09	100.00

(1) Sainte-Marie-aux-Mines, France. (2) Ca(HAsO₄)·2H₂O.

Occurrence: An uncommon secondary mineral formed by oxidation of earlier arsenic-bearing minerals.

Association: Picropharmacolite, hörnesite, haidingerite.

Distribution: In Germany, from Wittichen, Black Forest, in the Anton and Sofia mines; at St. Andreasberg, Harz Mountains; in the Rosenkrantz mine, Schneeberg, Saxony. At Nowa Ruda, Poland. Long crystals from Jáchymov (Joachimsthal), Czech Republic. At Săcărîmb, Romania. From Sainte-Marie-aux-Mines, Haut-Rhin, France. Found at Bou Azzer, Morocco. In the USA, at the Getchell mine, Potosi district, Humboldt Co., and the White Caps mine, Manhattan district, Nye Co., and the Gold Bar mine, Antelope district, Eureka Co., Nevada; at Sterling Hill, Ogdensburg, Sussex Co., New Jersey; in the OK mine, San Gabriel Canyon, Los Angeles Co., California. Some additional older localities may require modern confirmation.

Name: From the Greek for *poison*, as an arsenic-containing mineral.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 706–708. (2) Pierrot, R. (1964) Contribution à la minéralogie des arsénates calciques et calcomagnésiens naturels. Bull. Soc. fr. Minéral., 87, 169–211 (in French). (3) Ferraris, G. (1969) The crystal structure of pharmacolite, CaH(AsO₄)·2H₂O. Acta Cryst., 25, 1544–1550. (4) Ferraris, G., D.W. Jones, and J. Yerkess (1971) Determination of hydrogen atom positions in the crystal structure of pharmacolite, CaHAsO₄·2H₂O, by neutron diffraction. Acta Cryst., 27, 349–354.