Krautite $Mn^{2+}(AsO_3OH)\cdot H_2O$

Crystal Data: Monoclinic. *Point Group:* 2. As thin lamellae, to 2 mm; in fan-shaped aggregates.

Physical Properties: *Cleavage:* Perfect micaceous, on {010}; good on $\{\overline{1}01]\}$; distinct on {101}. *Tenacity:* Brittle. Hardness = < 4 D(meas.) = 3.30(2) D(calc.) = 3.274 Capable of absorbing organic compounds between structural layers.

Optical Properties: Translucent. *Color:* Pale rose. *Streak:* White with a faint rose tint. *Optical Class:* Biaxial (+). *Orientation:* $X = b$; $Z \wedge \{\overline{1}01\} = 16°$. $\alpha = 1.620(2)$ $\beta = 1.639(2)$ $\gamma = 1.686(2)$ 2V(meas.) = 65(5)°

Cell Data: *Space Group:* $P2_1$ (synthetic). $a = 8.012(2)$ $b = 15.956(4)$ $c = 6.801(2)$ $\beta = 96.60(3)°$ Z = 8

X-ray Powder Pattern: Săcărîmb, Romania.
7.96 (10), 3.84 (7), 3.17 (7), 3.27 (5), 2.480 (4), 3.96 (3), 2.730 (3)

Chemistry:

	(1)	(2)
As_2O_5	53.7	53.98
MnO	33.0	33.32
H_2O	12.8	12.70
Total	99.5	100.00

(1) Săcărîmb, Romania; corresponds to $Mn_{0.99}(AsO_3OH)_{1.00}\cdot 1.52H_2O$. (2) $Mn(AsO_3OH)\cdot H_2O$.

Occurrence: Found on museum mineral specimens.

Association: Rhodochrosite, nagyágite, quartz (Săcărîmb, Romania).

Distribution: From Săcărîmb (Nagyág) and Cavnic (Kapnikbánya), Romania. At Jáchymov (Joachimsthal), Czech Republic.

Name: Honors Dr. François Kraut, mineralogist, Natural History Museum, Paris, France.

Type Material: National School of Mines, Paris, France, 100329, 132295; Natural History Museum, Vienna, Austria, J8927; National Museum of Natural History, Washington, D.C., USA, R10961.

References: (1) Fontan, F., M. Orliac, and F. Permingeat (1975) La krautite $MnHAsO_4\cdot H_2O$, une nouvelle espèce minérale. Bull. Minéral., 98, 78–84 (in French with English abs.). (2) (1976) Amer. Mineral., 61, 503 (abs. ref. 1). (3) Catti, M. and M. Franchini-Angela (1979) Krautite, $Mn(H_2O)(AsO_3OH)$: crystal structure, hydrogen bonding and relations with haidingerite and pharmacolite. Amer. Mineral., 64, 1248–1254. (4) Beneke, K. and G. Lagaly (1981) Krautite, $MnHAsO_4\cdot H_2O$ – an intracrystalline reactive mineral. Amer. Mineral., 66, 432–435.