

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$  or 1. Compact, with a felted lamellar to microscopically spherulitic texture.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = 1.92$   $D(\text{calc.}) = 1.95$

**Optical Properties:** Translucent. *Color:* White. *Luster:* Dull.

*Optical Class:* Biaxial.  $n = 1.484$ ; birefringence 0.002.

**Cell Data:** *Space Group:*  $P\bar{1}$  or  $P1$ .  $a = 18.126(25)$   $b = 13.519(225)$   $c = 7.500(13)$   
 $\alpha = 70^\circ 30(7)'$   $\beta = 117^\circ 52(7)'$   $\gamma = 136^\circ 35(7)'$   $Z = 2$

**X-ray Powder Pattern:** Kristineberg mine, Sweden.

11.57 (100), 5.02 (23), 6.62 (20), 2.863 (14), 5.37 (12), 5.72 (8), 2.930 (5)

**Chemistry:**

	(1)	(2)
$\text{SO}_3$	13.05	12.20
$\text{P}_2\text{O}_5$	31.27	32.46
$\text{Al}_2\text{O}_3$	38.45	38.86
MgO	0.02	
$\text{H}_2\text{O}$	17.22	16.48
Total	100.01	100.00

(1) Kristineberg mine, Sweden. (2)  $\text{Al}_5(\text{PO}_4)_3(\text{SO}_4)(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ .

**Occurrence:** Filling fractures in cupriferous pyrite.

**Association:** Pyrite.

**Distribution:** From the Kristineberg mine, Västerbotten, Sweden.

**Name:** A contraction of the type locality, the KRISTINEBERG mine, Sweden.

**Type Material:** Museum of Natural History, Stockholm, Sweden, RM450003.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1011. (2) de Abeledo, M.E.J., V. Angelelli, M.A.R. de Benyacar, and C. Gordillo (1968) Sanjuanite, a new hydrated basic sulfate-phosphate of aluminum. *Amer. Mineral.*, 53, 1-8. (3) de Bruijn, H., G.J. Beukes, W.A. van der Westhuizen, and E.A.W. Tordiffe (1989) Unit cell dimensions of the hydrated aluminium phosphate-sulphate minerals sanjuanite, kribergite, and hotsonite. *Mineral. Mag.*, 53, 385-386.