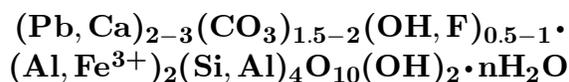


Surite

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Crystal Data: Monoclinic. *Point Group:* 2 (possible). As aggregates of tabular lath-shaped crystals, to $\sim 5 \mu\text{m}$.

Physical Properties: *Cleavage:* Perfect on {001}. *Hardness* = 2–3 *D*(meas.) = 4.0 *D*(calc.) = [4.00]

Optical Properties: Semitransparent. *Color:* White to pale green; colorless in thin section. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial. $\alpha = 1.693(2)$ $\beta = \text{n.d.}$ $\gamma = 1.738(2)$ *2V*(meas.) = n.d.

Cell Data: *Space Group:* $P2_1$ (possible). $a = 5.22$ $b = 8.97$ $c = 16.3$ $\beta = 96.1^\circ$ $Z = 2$

X-ray Powder Pattern: Cruz del Sur mine, Argentina; basal spacing does not expand with ethylene glycol treatment.

4.05 (100), 5.4 (71), 16.2 (68), 3.24 (60), 2.313 (50), 2.700 (35), 4.48 (20)

Chemistry:

	(1)
SiO ₂	23.58
Al ₂ O ₃	11.27
Fe ₂ O ₃	0.41
CuO	0.07
PbO	45.32
MgO	1.29
CaO	4.75
Na ₂ O	0.77
H ₂ O	3.72
CO ₂	9.45
Total	100.63

(1) Cruz del Sur mine, Argentina; corresponds to $(\text{Pb}_{1.84}\text{Ca}_{0.77}\text{Na}_{0.23}\text{Cu}_{0.01})_{\Sigma=2.85}(\text{CO}_3)_{1.95}(\text{OH})_{0.59} \cdot (\text{Al}_{1.58}\text{Mg}_{0.29}\text{Fe}_{0.05}^{3+})_{\Sigma=1.92}(\text{Si}_{3.57}\text{Al}_{0.43})_{\Sigma=4.00}\text{O}_{10}(\text{OH})_2 \cdot 0.58\text{H}_2\text{O}$.

Occurrence: As fissure fillings in the oxidized zone of a Pb-Zn deposit.

Association: Kaolinite, cerussite, quartz.

Distribution: In the Cruz del Sur mine, 42 km east-southeast of Los Menucos, Rio Negro Province, Argentina.

Name: For the type locality, the Cruz del Sur mine, Argentina.

Type Material: Institute of Earth Science, Waseda University, Tokyo, Japan; National Museum of Natural History, Washington, D.C., USA, 147202.

References: (1) Hayase, K., J.A. Dristas, S. Tsutsumi, R. Otsuka, S. Tanabe, T. Sudo, and T. Nishiyama (1978) Surite, a new Pb-rich layer silicate mineral. *Amer. Mineral.*, 63, 1175–1181. (2) Kampf, A.R., L.L. Jackson, G.B. Sidder, E.E. Foord, and P.M. Adams (1992) Ferrisurite, the Fe³⁺ analogue of surite, from Inyo County, California. *Amer. Mineral.*, 77, 1107–1111.