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Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* 2 or 2/m. As crystals, flattened on $\{010\}$, tapering to fibrous, elongated $\parallel [100]$; in compact radial aggregates, to 2 mm.

Physical Properties: Cleavage: Perfect on $\{010\}$. Tenacity: Very flexible. Hardness = 2-2.5 D(meas.) = 4.0(1) D(calc.) = 3.89

Optical Properties: Transparent to translucent. *Color:* Forest-green to light yellow-green. *Streak:* Greenish yellow to olive-green. *Luster:* Silky.

Optical Class: Biaxial (+). Pleochroism: X = yellow; Y = brown; Z = light green. Orientation: X = c; Y = b; Z = a. $\alpha = 1.757(3)$ $\beta = 1.763(3)$ $\gamma = 1.773(3)$ 2V(meas.) = n.d. $2V(\text{calc.}) = 76^{\circ}$

Cell Data: Space Group: $P2_1$ or $P2_1/m$. a = 5.241(1) b = 9.076(5) c = 16.23(1) $\beta = 90.03(7)^{\circ}$ Z = 2

X-ray Powder Pattern: Shirley Ann claim, California, USA. 4.53 (100), 3.240 (90), 2.612 (80), 2.272 (50), 16.1 (40), 3.727 (35), 5.40 (25), 1.715 (25)

Chemistry:

	(1)		(1)
SiO_2	26.6	BaO	0.1
Al_2O_3	3.2	$\mathrm{Na_2O}$	0.3
Fe_2O_3	10.5	\mathbf{F}	0.8
FeO	0.8	$\mathrm{H_2O}$	3.5
PbO	42.7	$ar{\mathrm{CO}_2}$	8.2
MgO	0.2	$-O = F_2$	0.3
CaO	3.4	Total	100.0

(1) Shirley Ann claim, California, USA; by electron microprobe, FeO by potentiometric titration, Fe²⁺:Fe³⁺ by wet chemical analysis, CO₂ by coulometric titration, H₂O by Karl Fischer titration; corresponding to $(Pb_{1.73}Ca_{0.55}Na_{0.09}Ba_{0.01})_{\Sigma=2.38}(CO_3)_{1.68}[(OH)_{0.51}F_{0.38}]_{\Sigma=0.89} \bullet (Fe_{1.19}^{3+}Al_{0.57}Fe_{0.10}^{2+}Mg_{0.05})_{\Sigma=1.91}Si_4O_{10}(OH)_2 \bullet 0.50H_2O$.

Occurrence: In an oxidized lead deposit in contact metamorphosed impure limestone, as an oxidation product of silicates proximate to galena.

Association: Galena, pyrite, chalcopyrite, covellite, chalcocite, quartz, calcite, hematite, cerussite, mimetite, wulfenite, malachite.

Distribution: At the Shirley Ann claim, Ubehebe district, west of Death Valley, Inyo Co., California, USA.

Name: For a predominance of Fe³⁺ over Al and its relation to *surite*.

Type Material: Natural History Museum of Los Angeles Co., Los Angeles, California; National Museum of Natural History, Washington, D.C., USA, 170288.

References: (1) 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.