

Crystal Data: Hexagonal. *Point Group:* $\bar{6}$. As acicular prismatic crystals, to 1 cm, with basal terminations. As jackstraw aggregates and parallel bundles. *Twinning:* By rotation around [0001], pervasive.

Physical Properties: *Cleavage:* {0001}, imperfect. *Fracture:* Conchoidal. *Tenacity:* Brittle, needles are slightly flexible. Hardness = 2 D(meas.) = 7.65(5) D(calc.) = 7.77 Dissolves very slowly in cold H₂O.

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Silky, subadamantine on broken surfaces.

Optical Class: Uniaxial (+). $\omega = 1.903(5)$ $\epsilon = 1.946(5)$

Cell Data: *Space Group:* $P\bar{6}$. $a = 10.267(1)$ $c = 3.9844(4)$ $Z = 1$

X-ray Powder Pattern: Grand Reef mine, Arizona, USA.
3.33 (100), 1.934 (60), 3.125 (40), 2.949 (40), 1.709 (40), 1.282 (40), 2.090 (35)

Chemistry:

	(1)	(2)
Pb	82.0	82.92
F	13.0	13.03
Cl	3.6	4.05
OH	0.9	
Total	99.5	100.00

(1) Grand Reef mine, Arizona, USA; by electron microprobe, H₂O by moisture titration; corresponding to Pb_{0.97}[F_{1.68}Cl_{0.25}(H₂O)_{0.07}] $_{\Sigma=2.00}$. (2) Pb₇F₁₂Cl₂.

Occurrence: In a vug isolated from acidic sulfate-rich solutions in the oxidized zone of a low-temperature Pb–Cu–Ag deposit.

Association: Grandreefite, pseudograndreefite, aravaipaite, galena, fluorite, anglesite, linarite, caledonite, quartz.

Distribution: From the Grand Reef mine, about six km northeast of Klondyke, Aravaipa district, Graham Co., Arizona, USA.

Name: For Laurel Canyon, Arizona, USA, where the Grand Reef mine is located.

Type Material: Natural History Museum, Los Angeles, California, 33608; National Museum of Natural History, Washington, D.C., USA, 166057.

References: (1) Kampf, A.R., P.J. Dunn, and E.E. Foord (1989) Grandreefite, pseudograndreefite, laurelite, and aravaipaite: four new minerals from the Grand Reef mine, Graham County, Arizona. *Amer. Mineral.*, 74, 927–933. (2) Kampf, A.R. and E.E. Foord (1996) Calcioaravaipaite, a new mineral, and associated lead fluoride minerals from the Grand Reef mine, Graham County, Arizona. *Mineral. Record*, 27, 293–300. (3) Merlino, S., M. Pasero, N. Perchiazzi, and A.R. Kampf (1996) Laurelite: its crystal structure and relationship to α -PbF₂. *Amer. Mineral.*, 81, 1277–1281.