Eucryptite $LiAlSiO_4$

Crystal Data: Hexagonal. *Point Group:* $\bar{3}$. Rare euhedral crystals, to 3 cm; common forms are $\{10\bar{1}0\}$, $\{11\bar{2}0\}$ and $\{0001\}$. In coarse crystalline aggregates and massive.

Physical Properties: *Cleavage:* $\{0001\}$ and $\{10\bar{1}0\}$. *Fracture:* Conchoidal. Hardness = 6.5 D(meas.) = 2.657–2.666 D(calc.) = 2.654–2.661 Fluoresces pink to red or orange under SW UV.

Optical Properties: Transparent to translucent. *Color:* Colorless.
Optical Class: Uniaxial (+). $\omega = 1.570–1.573$ $\epsilon = 1.583–1.587$

Cell Data: *Space Group:* $R\bar{3}$. $a = 13.47–13.54$ $c = 9.00–9.01$ $Z = 18$

X-ray Powder Pattern: Bikita, Zimbabwe.
3.362 (100), 3.965 (90), 2.733 (70), 2.545 (60), 2.373 (50), 1.797 (50), 6.736 (30)

Chemistry:

	(1)	(2)	(3)
SiO_2	49.32	47.97	47.68
Al_2O_3	40.43	40.28	40.46
Li_2O	9.72	11.45	11.86
Na_2O	0.24	0.26	
K_2O	0.01		
Total	99.72	99.96	100.00

(1) Bikita, Zimbabwe. (2) Kings Mountain, North Carolina, USA. (3) $LiAlSiO_4$.

Occurrence: In lithium-rich pegmatites.

Association: Albite, spodumene, petalite, amblygonite, lepidolite, quartz.

Distribution: In the USA, from Branchville, Fairfield Co., Connecticut; Center Strafford, Strafford Co., New Hampshire; in the Harding pegmatite, Dixon, Taos Co., New Mexico; in the Midnight Owl pegmatite, Maricopa Co., Arizona; and in the Foote mine, Kings Mountain, Cleveland Co., North Carolina. From the Tanco pegmatite, Bernic Lake, Manitoba, and near Nakina, Ontario, Canada. In Zimbabwe, large amounts at Bikita, with many other minor localities. From the Haapaluoma quarry, near Peräseinäjoki, Finland.

Name: From the Greek for *well* and *concealed*, in reference to its occurrence as intimate intergrowths with albite.

Type Material: Yale University, New Haven, Connecticut, USA, 2.4206, 2.4208, 2.4209.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 426.
(2) Hurlbut, C.S., Jr. (1962) Eucryptite from Bikita, Southern Rhodesia. Amer. Mineral., 47, 557–559. (3) Leavens, P.B., C.S. Hurlbut, Jr., and J.A. Nelen (1968) Eucryptite and bikitaite from King's [*sic*] Mountain, North Carolina. Amer. Mineral., 53, 1202–1207. (4) Černý, P. (1972) The Tanco pegmatite at Bernic Lake, Manitoba. VII. Eucryptite. Can. Mineral., 11, 708–713.
(5) Hesse, K.-F. (1985) Crystal structures of natural and synthetic α-eucryptite, $LiAlSiO_4$. Zeits. Krist., 172, 147–151.