

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As octahedra, trapezohedral or tetrahedral crystals, to 0.5 mm; in granular aggregates, massive.

Physical Properties: *Fracture:* Uneven. Hardness = 2.5 D(meas.) = 2.98(1)
D(calc.) = 3.01

Optical Properties: Transparent to translucent. *Color:* Colorless. *Luster:* Weakly vitreous to slightly greasy.

Optical Class: Isotropic. $n = 1.376(2)$

Cell Data: *Space Group:* $Fm\bar{3}m$. $a = 8.116(2)$ $Z = 4$

X-ray Powder Pattern: Pikes Peak, Colorado, USA.
2.863 (10), 2.024 (10), 2.336 (8), 1.428 (6), 0.795 (6), 0.905 (5), 1.650 (4)

Chemistry:	(1)	(2)	(3)
Na	9.90	7.96	9.50
K	28.94	30.82	32.29
Mg	0.22	0.03	
Ca	0.72	0.08	
Al	11.32	10.04	11.14
F	[47.90]	49.69	47.07
Total	[99.00]	98.62	100.00

(1) Pikes Peak, Colorado, USA; F calculated for charge balance; corresponds to K_{1.79}Na_{1.07}Ca_{0.04}Al_{1.02}F_{6.11}. (2) Cetine mine, Italy, by electron microprobe, corresponds to K_{2.12}Na_{0.93}Al_{1.00}F_{7.03}. (3) K₂NaAlF₆.

Occurrence: Replacing fluorine-bearing minerals in a quartz-microcline pegmatite (Pikes Peak, Colorado, USA); on vein quartz in a hydrothermal antimony deposit in silicified limestone (Cetine mine, Italy).

Association: Cryolite, pachnolite, thomsenolite, prosopite, gearksutite (Pikes Peak, Colorado, USA); cryolite, chiolite, pachnolite, thomsenolite, ralstonite (Amelia, Virginia, USA); ralstonite, rosenbergite, gypsum, fluorite, quartz (Cetine mine, Italy).

Distribution: In the USA, from the Cincinnati mine, St. Peters Dome, near Pikes Peak, El Paso Co., Colorado; from the Zapot pegmatite, 25 km northeast of Hawthorne, Fitting district, Mineral Co., Nevada; and in the Morefield pegmatite mine, Amelia, Amelia Co., Virginia. From the Cetine mine, 20 km southwest of Siena, Tuscany, Italy. In the Ivigtut cryolite deposit, southwestern Greenland.

Name: For El Paso County, Colorado, USA, where the mineral was found.

Type Material: National Museum of Natural History, Washington, D.C., USA, 162621, 83302.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 114. (2) Frondel, C. (1948) New data on elpasolite and hagemanite. *Amer. Mineral.*, 33, 84–87. (3) Sabelli, C. (1987) Structure refinement of elpasolite from Cetine mine, Tuscany, Italy. *Neues Jahrb. Mineral., Monatsh.*, 481–487. (4) Dirken, P.J., J.B.H. Jansen, and R.D. Schuiling (1992) Influence of octahedral polymerization on ²³Na and ²⁷Al MAS NMR in alkali fluoroaluminates. *Amer. Mineral.*, 77, 718–724.