

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Crystals, prismatic || [001], flattened on {010}, with {021}, {111}, and  $\{\bar{2}21\}$  also noted, to 6 mm; commonly granular or powdery.

**Physical Properties:** *Cleavage:* {111}, perfect. *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = 4.5 D(meas.) = 2.880–2.894 D(calc.) = 2.898

**Optical Properties:** Transparent when fresh; becomes translucent on exposure.

*Color:* Colorless, grayish to white, rarely turquoise-blue; colorless in transmitted light.

*Luster:* Vitreous, weak.

*Optical Class:* Biaxial (+). *Orientation:*  $Y = b$ ;  $X \wedge c = -35^\circ$ . *Dispersion:*  $r > v$ , strong.  $\alpha = 1.500\text{--}1.501$   $\beta = 1.503$   $\gamma = 1.509\text{--}1.510$   $2V(\text{meas.}) = 63^\circ\text{--}66^\circ$   $2V(\text{calc.}) = 66.5^\circ$

**Cell Data:** *Space Group:*  $C2/c$ .  $a = 6.67\text{--}6.76$   $b = 11.12\text{--}11.19$   $c = 7.32\text{--}7.38$   
 $\beta = 94.93^\circ\text{--}95.00^\circ$   $Z = 4$

**X-ray Powder Pattern:** St. Peters Dome, Colorado, USA.

4.35 (10), 2.13 (6), 1.837 (6), 1.813 (6), 3.07 (5), 1.913 (5), 3.24 (4)

**Chemistry:**

|                  | (1)      | (2)    | (3)    |
|------------------|----------|--------|--------|
| Na               | 0.33     |        |        |
| Mg               | 0.11     |        |        |
| Ca               | 16.19    | 16.45  | 16.84  |
| Al               | 23.37    | 21.79  | 22.67  |
| F                | 35.01    | 34.07  | 31.92  |
| O                | [12.58]  |        | 13.44  |
| O + H            |          | 28.61  |        |
| H <sub>2</sub> O | 12.41    |        | 15.13  |
| Total            | [100.00] | 100.92 | 100.00 |

(1) Altenberg, Germany; O by difference. (2) Yenisei Ridge, Russia. (3) CaAl<sub>2</sub>(F, OH)<sub>8</sub> with F:OH = 1:1.

**Occurrence:** Disseminated in fluorine-rich granites, greisens, and granite pegmatites; more rarely in base-metal deposits.

**Association:** Fluorite, cryolite, thomsenolite, pachnolite, gearsutite, ralstonite, weberite, jarlite, siderite, hematite, cassiterite, quartz.

**Distribution:** In Germany, from Altenberg, Saxony. At Horní Slavkov (Schlaggenwald), Czech Republic. From Perga, Volyn, Ukraine. In Russia, from Miass, Ilmen Mountains, Southern Ural Mountains; on the Yenisei Ridge, Siberia; and in the Zharchikhinsk molybdenum deposit, on the west side of Lake Baikal, eastern Siberia. In the Ivigtut cryolite deposit, southwestern Greenland. From Mt. Bischoff, Tasmania, Australia. In the USA, at St. Peters Dome, near Pikes Peak, El Paso Co., and in the Goldie carbonatite, McClure Mountain-Iron Mountain, Fremont Co., Colorado; in the Dugway district, Tooele Co., Utah; at the Zapot pegmatite, 25 km northeast of Hawthorne, Fitting district, Mineral Co., Nevada; from the Grand Reef mine, Aravaipa district, Graham Co., and 16 km north of Bouse, La Paz Co., Arizona; in the Morefield pegmatite mine, Amelia, Amelia Co., Virginia. In Mexico, at the Santa Rosa mine, Mazapil, Zacatecas, Mexico. From Tsumeb, Namibia.

**Name:** From the Greek for *mask*, the mineral's character being initially masked by pseudomorphism.

**Type Material:** Mining Academy, Freiberg, Germany, 12818.

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**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 121–123. (2) Pudovkina, Z.V. and Y.A. Pyatenko (1970) Structure of prosopite,  $\text{Ca}[\text{Al}_2\text{F}_4(\text{OH})_4]$ , and some crystallochemical features of fluoroaluminates. *Doklady Acad. Nauk SSSR*, 190, 665–667 (in Russian). (3) Nozhkin, A.D., T.A. Korneva, V.N. Korolyuk, and V.N. Stolpovskaya (1979) Prosopite from fluorite veins of the Yenisei Ridge. *Doklady Acad. Nauk SSSR*, 247, 1478–1481 (in Russian). (4) Petersen, O.V. (1986) On the prosopite,  $\text{CaAl}_2\text{F}_4(\text{OH})_4$ , from Ivigtut. *Neues Jahrb. Mineral., Monatsh.*, 329–335. (5) Ferguson, R.B. (1949) Observations on some aluminum fluoride minerals. *Amer. Mineral.*, 34, 383–397.