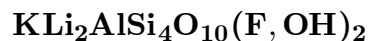


# Polyolithionite



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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Pseudo-hexagonal crystals, tabular || {001}, to 10 cm. As irregularly shaped aggregates of fine scaly crystals.

**Physical Properties:** *Cleavage:* {001}, perfect. *Fracture:* Uneven. Hardness = 2–3  
D(meas.) = 2.58–2.82 D(calc.) = 2.84 May fluoresce lemon-yellow under SW UV.

**Optical Properties:** Transparent. *Color:* Bright to pale pink, cream to white, colorless, pale brown to yellow-brown, bluish, greenish; in transmitted light, colorless. *Luster:* Pearly to waxy when fine-grained.

*Optical Class:* Biaxial (-).  $\alpha = 1.53$   $\beta = 1.551\text{--}1.556$   $\gamma = 1.555\text{--}1.559$   $2V(\text{meas.}) = 0^\circ\text{--}43^\circ$

**Cell Data:** *Space Group:*  $C2/m$ .  $a = 5.189$   $b = 8.974$   $c = 10.067$   $\beta = 100^\circ 27'$   $Z = 2$

**X-ray Powder Pattern:** Lovozero massif, Russia.

3.27 (10), 2.56 (10), 1.969 (10), 1.493 (10), 1.631 (9), 1.290 (9), 4.89 (8)

Chemistry:	(1)	(2)	(1)	(2)
SiO <sub>2</sub>	60.83	59.25	Li <sub>2</sub> O	6.23
TiO <sub>2</sub>	trace		Na <sub>2</sub> O	2.06
Al <sub>2</sub> O <sub>3</sub>	13.11	12.57	K <sub>2</sub> O	11.13
Fe <sub>2</sub> O <sub>3</sub>	0.18	0.93	F	4.50
MnO	0.12		H <sub>2</sub> O <sup>+</sup>	1.71
MgO	0.24		H <sub>2</sub> O <sup>-</sup>	0.33
CaO	0.73		-O = F <sub>2</sub>	1.89
			Total	99.28
				99.03

(1) Mt. Karnasurt, Kola Peninsula, Russia; corresponds to  $\text{K}_{0.95}(\text{Li}_{1.67}\text{Na}_{0.27}\text{Ca}_{0.05}\text{Mg}_{0.02}\text{Mn}_{0.01})_{\Sigma=2.02}(\text{Al}_{1.03}\text{Fe}_{0.01}^{3+})_{\Sigma=1.04}\text{Si}_{4.05}\text{O}_{10.25}[\text{F}_{0.95}(\text{OH})_{0.91}]_{\Sigma=1.86}$ . (2) Ilímaussaq intrusion, Greenland.

**Mineral Group:** Mica group.

**Occurrence:** In irregular segregations and veinlets, as a late-stage and metasomatic replacement mineral, in syenite pegmatites in a differentiated alkalic massif (Lovozero massif, Russia).

**Association:** Microcline, natrolite, taeniolite, steenstrupine, aegirine, analcime, epistolite.

**Distribution:** On the Kangerdluarssuk Plateau and elsewhere in the Ilímaussaq intrusion, southern Greenland. In Russia, found on Mts. Karnasurt and Lepkhe-Nelm, Lovozero massif, Kola Peninsula. In the Dara-i-Pioz massif, Alai Range, Tien Shan, Tajikistan. At Vøra, Sandefjord, Oslo region, Norway. From Mont Saint-Hilaire and near Saint-Amable, Quebec, Canada. In the USA, at Point of Rocks, Colfax Co., New Mexico. On Mt. Malosa, Zomba district, Malawi.

**Name:** From the Greek *poly*, for *many* or *much*, and in allusion to its high LITHIum content.

**Type Material:** University of Copenhagen, Copenhagen, Denmark.

**References:** (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 626–627. (2) Vlasov, K.A., Ed. (1966) Mineralogy of rare elements, v. II, 25–29. (3) Vlasov, K.A., M.V. Kuz'menko, and E.M. Es'kova (1966) The Lovozero alkali massif. Akad. Nauk SSSR, 425–429 (in English). (4) Raade, G. and A. Larsen (1980) Polyolithionite from syenite pegmatite at Vøra, Sandefjord, Oslo Region, Norway. Geol. Tidsskr., 60, 117–124. (5) Chem. Abs., 94, 50381 (abs. ref. 4). (6) Takeda, H. and C.W. Burnham (1969) Fluor-polyolithionite: a lithium mica with nearly hexagonal  $(\text{Si}_2\text{O}_5)^{2-}$  ring. Mineral. J. (Japan), 6, 102–109.

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