

# Epididymite

# NaBeSi<sub>3</sub>O<sub>7</sub>(OH)

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**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As pseudohexagonal crystals, tabular on {001}, also elongated along [010], to 6 cm. Micaceous, spherulitic, fine to coarse granular, porcelaneous massive. *Twinning:* On {001}, common, simple and polysynthetic; also as trillings.

**Physical Properties:** *Cleavage:* Perfect on {001}, distinct on {100}. *Fracture:* Uneven to conchoidal when massive. Hardness = 5.5 D(meas.) = 2.55–2.61 D(calc.) = 2.56

**Optical Properties:** Transparent to translucent. *Color:* Colorless, white, also tinted violet, blue, or yellow when finely crystalline. *Luster:* Pearly on cleavages, vitreous on fractures. *Optical Class:* Biaxial (+) or (-). *Orientation:*  $X = a; Y = c; Z = b$ . *Dispersion:*  $r > v$ , distinct, crossed.  $\alpha = 1.536\text{--}1.544$   $\beta = 1.51\text{--}1.544$   $\gamma = 1.542\text{--}1.546$   $2V(\text{meas.}) = 16^\circ\text{--}32^\circ$   $2V(\text{calc.}) = 26^\circ$

**Cell Data:** *Space Group:*  $Pnma$ .  $a = 12.74(1)$   $b = 13.63(1)$   $c = 7.33(1)$   $Z = 8$

**X-ray Powder Pattern:** Narssârssuk, Greenland.

3.37 (10), 3.08 (10), 2.96 (10), 1.790 (6), 1.634 (6), 2.48 (5), 1.537 (5)

## Chemistry:

	(1)	(2)	(3)
SiO <sub>2</sub>	73.74	71.79	73.49
Al <sub>2</sub> O <sub>3</sub>		1.94	
Fe <sub>2</sub> O <sub>3</sub>		0.12	
BeO	10.56	10.45	10.20
MgO		trace	
CaO		0.16	
Na <sub>2</sub> O	12.88	11.43	12.64
K <sub>2</sub> O		0.30	
H <sub>2</sub> O <sup>+</sup>	3.73	4.14	3.67
H <sub>2</sub> O <sup>-</sup>		0.03	
Total	100.91	100.36	100.00

(1) Narssârssuk, Greenland. (2) Mt. Karnasurt, Russia. (3) NaBeSi<sub>3</sub>O<sub>7</sub>(OH).

**Polymorphism & Series:** Dimorphous with eudidymite.

**Occurrence:** A late-stage mineral in nepheline syenite pegmatites.

**Association:** Albite, aegirine, eudialyte, elpidite, neptunite, tugtupite, leucophanite, natrolite, analcime.

**Distribution:** At Narssârssuk and in the Ilímaussaq intrusion, southern Greenland. On Arø Island, in the Langesundsford, and in the Vevja quarry, Tvedalen, Norway. On the Kola Peninsula, in the Lovozero massif, on Mts. Karnasurt and Alluaiv, and at Kuivchorr, and in the Khibiny massif; from the Murun massif, southwest of Olekminsk, Yakutia, Russia. At Vězná, Czech Republic. From Mont Saint-Hilaire and near Saint-Amable, Quebec, Canada. In the USA, near Quincy, Norfolk Co., Massachusetts. Large crystals on Mt. Malosa, Zomba district, Malawi.

**Name:** The prefix *epi* from the Greek for *near*, referring to the dimorphous relation with *eudidymite*.

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

**References:** (1) Dana, E.S. (1899) Dana's system of mineralogy, (6th edition), app. I, 24–25. (2) Vlasov, K.A., M.V. Kuz'menko, and E.M. Es'kova (1966) The Lovozero alkali massif. Akad. Nauk SSSR, 433–438 (in English). (3) Petersen, O.V. (1966) Crossed axial plane dispersion in epididymite. Amer. Mineral., 51, 916–919. (4) Mandarino, J.A. and D.C. Harris (1969) Epididymite from Mont St. Hilaire, Quebec. Can. Mineral., 9, 706–709. (5) Robinson, P.D. and J.H. Fang (1970) The crystal structure of epididymite. Amer. Mineral., 55, 1541–1549.

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