

**Depmeierite**

**Crystal Data:** Hexagonal. *Point Group:* 6. As equant grains, to 1 cm.

**Physical Properties:** *Cleavage:* Perfect on {100}, 120° angle is distinguishing. *Tenacity:* Brittle. *Fracture:* Stepped. Hardness = 5 D(meas.) = 2.32(1) D(calc.) = 2.313

**Optical Properties:** Transparent. *Color:* Colorless to light blue (large grains), colorless in transmitted light. *Streak:* White. *Luster:* Vitreous. *Pleochroism:* None.

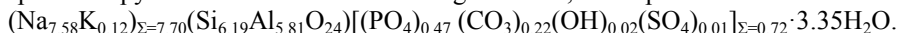
*Optical Class:* Uniaxial (+).  $\epsilon = 1.493(2)$   $\omega = 1.497(2)$

**Cell Data:** Space Group:  $P6_3$ .  $a = 12.744(3)$   $c = 5.187(1)$   $Z = 1$ .

**X-ray Powder Pattern:** Mount Karnasurt, Lovozero alkaline massif, Kola Peninsula, Russia. 3.250 (100), 4.695 (91), 3.681 (37), 2.758 (33), 2.596 (31), 6.380 (30), 2.436 (21), 2.121 (24)

Chemistry:	(1)
Na <sub>2</sub> O	23.04
K <sub>2</sub> O	0.54
Fe <sub>2</sub> O <sub>3</sub>	0.03
Al <sub>2</sub> O <sub>3</sub>	29.07
SiO <sub>2</sub>	36.48
P <sub>2</sub> O <sub>5</sub>	3.30
SO <sub>3</sub>	0.08
CO <sub>2</sub>	0.97
<u>H<sub>2</sub>O</u>	<u>5.93</u>
Total	99.44

(1) Mount Karnasurt, Lovozero alkaline massif, Kola Peninsula, Russia; average of 10 electron microprobe analyses, volatiles determined by gas selective sorption, OH/H<sub>2</sub>O confirmed by IR spectroscopy and ratio calculated for charge balance; corresponds to



(2) hypothetical end member formula  $[\text{Al}_6\text{Si}_6\text{O}_{24}][\text{Na}_2(\text{H}_2\text{O})_2][\text{Na}_6(\text{PO}_4)_{2/3} \cdot 3(\text{H}_2\text{O})]$

**Mineral Group:** Cancrinite group.

**Occurrence:** In a peralkaline hydrothermal veinlet cross-cutting alternating foyaite, urtite, and lujavrite rocks in an alkaline igneous complex.

**Association:** Natrolite, steenstrupine-(Ce), epistolite after vuonnemite, sodalite, and minor aegirine, serandite, natisite, and vitusite-(Ce).

**Distribution:** From Mount Karnasurt, Lovozero alkaline massif, Kola Peninsula, Russia.

**Name:** Honors Wulf Helmut Heinz Depmeier (b. 1944), professor of mineralogy and crystallography, Christian Albrecht University, Kiel, Germany.

**Type Material:** A. E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia; 3882/1.

**References:** (1) Pekov, I.V., L.V. Ol'sych, N.V. Chukanov, K.V. Van, and D.Yu. Pushcharovskiy (2010) Depmeierite  $\text{Na}_8[\text{Al}_6\text{Si}_6\text{O}_{24}](\text{PO}_4, \text{CO}_3)_{1-x} \cdot 3\text{H}_2\text{O}$  ( $x < 0.5$ )—a new cancrinite group mineral from the Lovozero alkaline massif (Kola Peninsula, Russia). *Zap. Ross. Mineral. Obshch.*, 139(4), 63–74 (in Russian, English abstract), *Geol. Ore Deposits* (2011) 53(7), 604 (in English). (2) (2012) *Amer. Mineral.*, 97, 1818–1819 (abs. ref. 1).