

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

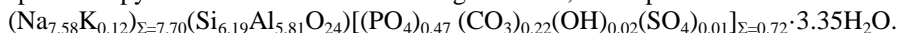
Optical Properties: Transparent. *Color:* Colorless to light blue (large grains), colorless in transmitted light. *Streak:* White. *Luster:* Vitreous. *Pleochroism:* None. *Optical Class:* Uniaxial (+). $\varepsilon = 1.493(2)$ $\omega = 1.497(2)$

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)

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|--------------------------------|-------------|
| Chemistry: | (1) |
| Na ₂ O | 23.04 |
| K ₂ O | 0.54 |
| Fe ₂ O ₃ | 0.03 |
| Al ₂ O ₃ | 29.07 |
| SiO ₂ | 36.48 |
| P ₂ O ₅ | 3.30 |
| SO ₃ | 0.08 |
| CO ₂ | 0.97 |
| <u>H₂O</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/H₂O 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.

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

References: (1) Pekov, I.V., L.V. Olysyh, N.V. Chukanov, K.V. Van, and D.Yu. Pushcharovsky (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).