

Mogovidite

Crystal Data: Hexagonal. *Point Group:* 3/m. As tabular crystals exhibiting {101 1}, {011 2} and {0001}, to 2 cm.

Physical Properties: *Cleavage:* n.d. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 5.5
 $D(\text{meas.}) = 2.90(1)$ $D(\text{calc.}) = 2.908$

Optical Properties: Translucent. *Color:* Brown to reddish brown. *Streak:* White.
Luster: Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.618(1)$ $\varepsilon = 1.611(2)$ *Pleochroism:* Weak, colorless to yellow.

Cell Data: *Space Group:* R3m. $a = 14.232(3)$ $c = 30.210(3)$ $Z = \text{n.d.}$

X-ray Powder Pattern: Kovdor massif, Kola Peninsula, Russia.
 3.213 (100), 2.977 (91), 2.859 (79), 3.027 (65), 4.31 (64), 2.703 (46), 2.595 (45)

Chemistry:	(1)	(1)	(1)
Na ₂ O	9.78	SiO ₂	47.49
K ₂ O	0.36	TiO ₂	0.23
CaO	18.03	ZrO ₂	11.90
MnO	0.68	Nb ₂ O ₅	1.72
FeO	1.32	Cl	0.52
Fe ₂ O ₃	3.78	H ₂ O	1.25
La ₂ O ₃	0.15	CO ₂	1.42
Ce ₂ O ₃	0.28	<u>-O = Cl</u>	<u>0.12</u>
		Total	98.82

(1) Kovdor massif, Kola Peninsula, Russia; by electron microprobe analysis, IR and Mössbauer spectroscopy, and TGA; corresponding to $\text{Na}_9(\text{Ca}_{4.05}\text{Na}_{0.87}\text{K}_{0.24}\text{Ce}_{0.06}\text{La}_{0.03})_{\Sigma=5.25}\text{Ca}_{6.00}(\text{Fe}^{3+}_{1.48}\text{Fe}^{2+}_{0.58})_{\Sigma=2.06}\text{Mn}_{0.30}(\text{Zr}_{3.02}\text{Ti}_{0.09})_{\Sigma=3.11}(\square,\text{Nb}_{0.40})\text{Si}_{24.71}\text{O}_{72}(\text{OH})_{2.86}(\text{CO}_3)_{1.03}\text{Cl}_{0.46}\bullet0.74\text{H}_2\text{O}$.

Mineral Group: Eudialyte group, the CO₃-dominant analog of feklichevite with vacancies dominant in the M3 structural site.

Occurrence: In a nepheline-pectolite vein within ijolite.

Association: Nepheline, pectolite, aegirine-augite, zircon, titanite, humite, andradite, scolecite, calcite.

Distribution: From the northern face of the iron-ore quarry at the 115 m horizon, Kovdor massif, Kola Peninsula, Russia.

Name: For the mountain, Mogo-Vid, near the locality from which the first specimens were collected.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, (3221/1; 3290/1).

References: (1) Chukanov, N.V., M.M. Moiseyev, R.K. Rastsvetayeva, K.A. Rozenberg, and A.E. Zadov (2005) Golyshevite $(\text{Na},\text{Ca})_{10}\text{Ca}_9(\text{Fe}^{3+},\text{Fe}^{2+})_2\text{Zr}_3\text{NbSi}_{25}\text{O}_{72}(\text{CO}_3)(\text{OH})_3\cdot\text{H}_2\text{O}$, and mogovidite, $\text{Na}_9(\text{Ca},\text{Na})_6\text{Ca}_6(\text{Fe}^{3+},\text{Fe}^{2+})_2\text{Zr}_3\square\text{Si}_{25}\text{O}_{72}(\text{CO}_3)(\text{OH},\text{H}_2\text{O})_4$, new eudialyte-group minerals from calcium-rich agpaitic pegmatites of the Kovdor massif, Kola Peninsula. Zap.Ross. Mineral. Obshch., 134(6), 36-47 (in Russian with English abstract). (2) (2007) Amer. Mineral., 92, 1541 (abs. ref. 1).