

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As tabular crystals to 8 mm, grouped in rosette or sheaf-like aggregates to 10 mm.

**Physical Properties:** *Cleavage:* Perfect on {100}, with two additional {h0l} cleavages. *Fracture:* Uneven. *Tenacity:* Brittle. *Hardness = 5* VHN = 749 (15 g load). D(meas.) = 3.46(3) D(calc.) = 3.51(1)

**Optical Properties:** Transparent. *Color:* Colorless or pale brown. *Streak:* White. *Luster:* Vitreous, greasy on fractures.

*Optical Class:* Biaxial(-).  $\alpha = 1.623(3)$   $\beta = 1.636(2)$   $\gamma = 1.642(2)$  2V(meas.) = 60(10)<sup>o</sup> 2V(calc.) = 68(4)<sup>o</sup> *Dispersion:* Weak,  $r > v$ . *Orientation:* X = a, Y = b, Z = c.

**Cell Data:** *Space Group:* Pcca.  $a = 14.460(2)$   $b = 5.187(1)$   $c = 19.848(7)$  Z = 4

**X-ray Powder Pattern:** Lovozero alkaline massif, Kola Peninsula, Russia. 4.216 (100), 2.964 (73), 3.325 (67), 2.879 (62), 2.595 (46)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	11.34
MgO	0.51
MnO	2.22
FeO	3.71
ZnO	2.28
CaO	0.73
SrO	12.64
BaO	0.31
La <sub>2</sub> O <sub>3</sub>	8.79
Ce <sub>2</sub> O <sub>3</sub>	10.64
Pr <sub>2</sub> O <sub>3</sub>	0.56
Nd <sub>2</sub> O <sub>3</sub>	0.90
Sm <sub>2</sub> O <sub>3</sub>	0.06
Al <sub>2</sub> O <sub>3</sub>	0.09
<u>SiO<sub>2</sub></u>	<u>44.92</u>
Total	99.70

(1) Lovozero alkaline massif, Kola Peninsula, Russia; average electron microprobe analysis; corresponds to Na<sub>3</sub>Sr(Ce,La)(Fe,Mn,Zn)Si<sub>6</sub>O<sub>17</sub>.

**Occurrence:** In sodalite syenites and in ussingite veins in an alkaline massif.

**Association:** Aegirine, eudialyte, sodalite, vuonnemite.

**Distribution:** At the Lovozero alkaline massif, Kola Peninsula, Russia.

**Name:** Prefix, *ferro*, indicates the Fe<sup>2+</sup>-dominant analog of *nordite-Ce*.

**Type Material:** A.E. Fersman Mineralogical Museum, Moscow, Russia.

**References:** (1) Pekov, I.V., N.V. Chukanov, N.N. Kononkova, D.I. Belakovsky, D.Yu. Pushcharovskiy, and S.A. Vinogradova (1998) Ferronordite-(Ce) Na<sub>3</sub>SrFeSi<sub>6</sub>O<sub>17</sub> and manganonordite-(Ce) Na<sub>3</sub>SrMnSi<sub>6</sub>O<sub>17</sub> - new minerals from the Lovozero massif, Kola Peninsula. Zapiski Vseross. Mineral. Obshch., 127(1), 32-40 (in Russian, English abs.). (2) (1999) Amer. Mineral., 84(10), 685 (abs. ref. 1). (3) Pushcharovskii, D.Y., I.V. Pekov, J.J. Pluth, J. Smith, G. Ferraris, S.A. Vinogradova, A.V. Arakcheeva, S.V. Soboleva, and E.I. Semenov (1999) Raite, manganonordite-(Ce), and ferronordite-(Ce) from the Lovozero massif: Crystal structures and mineralogical geochemistry. Crystallography Reports 44, 565-574.