

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As spherulites, to 1.5 cm, and crystals to 8 mm, showing mainly {100}.

**Physical Properties:** *Cleavage:* Perfect {100}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = 5 D(meas.) = 3.54(2) D(calc.) = 3.62(1) Nonfluorescent.

**Optical Properties:** Transparent. *Color:* Colorless to pale brown. *Streak:* White. *Luster:* Vitreous to greasy.

*Optical Class:* Biaxial (-).  $\alpha = 1.624(1)$   $\beta = 1.637(1)$   $\gamma = 1.644(1)$  2V(meas.) = 60(15)° 2V(calc.) = 72(12)° *Dispersion:* Weak,  $r > v$ . *Orientation:*  $X = a$ ,  $Z = b$ ,  $Y = c$ .

**Cell Data:** *Space Group:* *Pcca* (by analogy to other members of the nordite group).  $a = 14.440(5)$   $b = 5.191(2)$   $c = 19.86(1)$   $Z = 4$

**X-ray Powder Pattern:** Mount Bol'shoi Punkaruaiv, Lovozero massif, Kola Peninsula, Russia. 4.21 (100), 2.873 (99), 2.964 (88), 3.323 (82), 2.595 (58), 2.442 (44), 7.20 (40)

|                                |       |
|--------------------------------|-------|
| <b>Chemistry:</b>              | (1)   |
| Na <sub>2</sub> O              | 11.23 |
| CaO                            | 0.53  |
| SrO                            | 12.69 |
| BaO                            | 0.36  |
| MgO                            | 0.30  |
| MnO                            | 2.50  |
| FeO                            | 3.75  |
| ZnO                            | 2.29  |
| La <sub>2</sub> O <sub>3</sub> | 11.36 |
| Ce <sub>2</sub> O <sub>3</sub> | 8.21  |
| Pr <sub>2</sub> O <sub>3</sub> | 1.00  |
| Nd <sub>2</sub> O <sub>3</sub> | 0.89  |
| Al <sub>2</sub> O <sub>3</sub> | 0.14  |
| SiO <sub>2</sub>               | 44.06 |
| Total                          | 99.31 |

(1) Mount Bol'shoi Punkaruaiv, Lovozero massif, Kola Peninsula, Russia; average electron microprobe analysis; corresponds to (Na<sub>2.92</sub>Ca<sub>0.08</sub>) $\Sigma=3.00$ (Sr<sub>0.99</sub>Ba<sub>0.02</sub>) $\Sigma=1.01$ (La<sub>0.57</sub>Ce<sub>0.41</sub>Pr<sub>0.05</sub>Nd<sub>0.04</sub>) $\Sigma=1.07$ (Fe<sub>0.43</sub>Mn<sub>0.29</sub>Zn<sub>0.23</sub>Mg<sub>0.06</sub>) $\Sigma=1.01$ (Si<sub>5.92</sub>Al<sub>0.02</sub>) $\Sigma=5.94$ O<sub>17</sub>.

**Mineral Group:** Nordite supergroup, nordite group (Sr dominant in the X site).

**Occurrence:** In the ussingite core of hyperagpaitic pegmatite.

**Association:** Aegirine, epidote, steenstrupine-(Ce), serandite, sphalerite.

**Distribution:** At Mount Bol'shoi Punkaruaiv, Lovozero alkaline massif, Kola Peninsula, Russia.

**Name:** A member of the *nordite* group with a prefix, *ferro*, that indicates dominant Fe<sup>2+</sup> in the tetrahedral structural site and a suffix for the dominant rare earth element.

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

**References:** (1) Pekov, I.V., N.V. Chukanov, A.G. Turchkova, and V.G. Grishin (2001) Ferronordite-(La), Na<sub>3</sub>Sr(La,Ce)FeSi<sub>6</sub>O<sub>17</sub>, a new mineral of the nordite group from the Lovozero massif, Kola Peninsula. Zap. Vseross. Mineral. Obshch., 130(2), 53-58 (in Russian, English abs.). (2) (2002) Amer. Mineral., 87, 1510 (abs. ref. 1). (3) Bo, F.D., E.H. Gulbransen, and H. Friis (2021) New data on nordite-(Ce) and the establishment of the nordite supergroup. Mineral. Mag., 85(3), 431-437.