

Crystal Data: Orthorhombic. *Point Group:* 222. As grains, some corroded and irregular, others tabular, to 0.5 mm, showing {010} and {110}.

Physical Properties: *Cleavage:* Good on {010}. *Tenacity:* Brittle. *Fracture:* Stepped. Hardness = 6 D(meas.) = 2.74(2) D(calc.) = 2.745 Fluoresces bright pink under SW UV.

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (-). $\alpha = 1.561(1)$ $\beta = 1.563(1)$ $\gamma = 1.564(1)$ $2V(\text{meas.}) = 51(2)^\circ$ *Orientation:* $X = a, Y = b, Z = c$. *Dispersion:* Strong, $r > v$.

Cell Data: *Space Group:* $P2_12_12_1$. $a = 9.96304(4)$ $b = 10.4348(4)$ $c = 4.7044(2)$ $Z = 4$

X-ray Powder Pattern: Mt. Koashva, Khibina massif, Kola Peninsula, Russia. 3.282 (100), 3.495 (80), 3.944 (50), 3.149 (40), 2.704 (40), 2.293 (40), 5.24 (30)

Chemistry:	(1)
SiO ₂	58.94
B ₂ O ₃	17.17
K ₂ O	23.50
<u>Na₂O</u>	<u>0.00</u>
Total	99.61

(1) Mt. Koashva, Khibina massif, Kola Peninsula, Russia; average electron microprobe analysis; corresponds to K_{1.01}B_{1.00}Si_{1.99}O₆.

Mineral Group: Zeolite group.

Occurrence: In the central zone of a hyperagpaitic pegmatite.

Association: Microcline, pectolite, chkalovite, lomonosovite, thermonatrite, aegirine, alkali amphibole.

Distribution: From near Mt. Koashva, Khibina massif, Kola Peninsula, Russia.

Name: Honors Russian specialist in boron deposits, Apollon E. *Lisitsyn* (1928-1999).

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

References: (1) Khomyakov, A.P., G.N. Nechelyustov, E.V. Sokolova, and F.C. Hawthorne (2000) The new borosilicates malinkoite, NaBSiO₄, and lisitsynite, KBSi₂O₆, from the alkaline pegmatites of the Khibiny-Lovozero complex (Kola Peninsula). *Zapiski Vseross. Mineral. Obshch.*, 129(6), 35-42 (in Russian, English abs.). (2) (2002) *Amer. Mineral.*, 87, 181 (abs. ref. 1). (3) Sokolova, E.V., F.C. Hawthorne, and A.P. Khomyakov (2001) The crystal chemistry of malinkoite, NaBSiO₄, and lisitsynite, KBSi₂O₆, from the Khibina-Lovozero Complex, Kola Peninsula, Russia. *Can. Mineral.*, 39(1), 159-169.