

Crystal Data: Monoclinic. *Point Group:* 2/m. As prisms to 2 mm and commonly rhombic or pseudo-hexagonal in cross section. *Twining:* On {100}.

Physical Properties: *Cleavage:* Fair prismatic cleavage. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.07

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+). $\alpha = 1.629(1)$ $\beta = 1.640(1)$ $\gamma = 1.654(1)$ $2V(\text{meas.}) = 81.8(6)^\circ$ *Dispersion:* $r > v$, extremely weak. Positive elongation.

Cell Data: *Space Group:* C2/m. $a = 14.767(1)$ $b = 5.574(1)$ $c = 15.079(1)$ $\beta = 91.96(1)^\circ$ $Z = 2$

X-Ray Diffraction Pattern: Larsemann Hills, Prydz Bay, east Antarctica. 5.19 (100), 5.41 (70), 4.31 (70), 4.95 (60), 3.378 (60), 2.162 (40), 3.59 (30)

Chemistry:	(1)	(2)
SiO ₂	10.05	12.67
Al ₂ O ₃	71.23	69.15
FeO	0.48	1.10
MgO		0.23
BeO	0.004	0.094
<u>B₂O₃</u>	<u>19.63</u>	<u>18.11</u>
Total	101.39	101.35

(1) Larsemann Hills, Prydz Bay, east Antarctica; average electron microprobe analysis supplemented by SIMS; corresponds to Fe_{0.08}Al_{15.98}B_{6.09}Si_{1.91}O₃₇. (2) Almgjotheii, Rogaland Intrusive Complex, southwestern Norway; average electron microprobe analysis supplemented by SIMS, may include sillimanite; corresponds to Mg_{0.07}Fe_{0.18}Al_{15.66}Be_{0.04}B_{5.565}Si_{2.435}O₃₇.

Polymorphism & Series: Solid solution with sillimanite (or Al₈B₂Si₂O₁₉) and werdingite.

Occurrence: A high-temperature phase in pegmatites cutting granulite-facies metapelitic rocks.

Association: Quartz, potassium feldspar, schorl/dravite (Larsemann Hills); potassium feldspar, plagioclase(An₂₂), werdingite, dumortierite, grandidierite (Almgjotheii); quartz, potassium feldspar, dumortierite, andalusite, ± sillimanite (Almgjotheii).

Distribution: At Larsemann Hills, Prydz Bay, east Antarctica (TL) and at Almgjotheii, Rogaland Intrusive Complex, southwestern Norway.

Name: From the composition, *boron*, *aluminum*, and *silicon*.

Type Material: National Museum of Natural History, Washington, D.C., USA (171403 & 171404).

References: (1) Grew, E.S., J.J. McGee, M.G. Yates, D.R. Peacor, R.C. Rouse, J.P.P. Huijsmans, C.K. Shearer, M. Weidenbeck, D.E. Thost, and S. Su (1998) Boralsilite (Al₁₆B₆Si₂O₃₇): a new mineral related to sillimanite from pegmatites in granulite-facies rocks. *Amer. Mineral.*, 83, 638-651. (2) Peacor, D.R., R.C. Rouse, and E.S. Grew (1999) Crystal structure of boralsilite and its relation to a family of borooaluminosilicates, sillimanite, and andalusite. *Amer. Mineral.*, 84, 1152-1161.