Kalborsite $K_6BAl_4Si_6O_{20}Cl(OH)_4$

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Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$. As grains up to 2 mm.

Physical Properties: *Cleavage:* Perfect on {110}. Hardness = ∼6 VHN = 733–897, 838 average. D(meas.) = 2.5 D(calc.) = 2.48

Optical Properties: Translucent to transparent. *Color:* Colorless with a slight brownish rose tint. *Luster:* Vitreous to pearly on cleavages.
Optical Class: Uniaxial (+). $\omega = 1.525$ $\epsilon = 1.525$; birefringence < 0.001.

Cell Data: *Space Group:* $P\bar{4}2_1c$. $a = 9.851(5)$ $c = 13.060(5)$ Z = 2

X-ray Powder Pattern: Mt. Rasvumchorr, Russia.
3.08 (10), 2.79 (9), 3.44 (8), 2.94 (8), 3.26 (5), 2.24 (5), 2.08 (5)

Chemistry:

	(1)
SiO_2	38.54
B_2O_3	4.98
Al_2O_3	21.18
K_2O	30.06
Cl	3.71
H_2O	[3.81]
$-O = Cl_2$	0.84
Total	[101.44]

(1) Mt. Rasvumchorr, Russia; by electron microprobe, average of three analyses, H_2O from stoichiometry; corresponds to $K_{6.04}B_{1.35}(Al_{3.93}Si_{6.07})_{\Sigma=10.00}O_{22.58}Cl_{0.99}(OH)_4$.

Occurrence: Forms rims around lovozerite in segregations of pectolite, in rischorrite pegmatite from a differentiated alkalic massif.

Association: Pectolite, lovozerite.

Distribution: On Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia.

Name: For potassium, KALium, BORate, and SIlicon in the composition.

Type Material: Mining Institute, St. Petersburg, 1300/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 81596.

References: (1) Khomyakov, A.P., S.M. Sandomirskaya, and Y.A. Malinovskii (1980) Kalborsite, $K_6BAl_4Si_6O_{20}(OH)_4Cl$, a new mineral. Doklady Acad. Nauk SSSR, 252, 1465–1468 (in Russian). (2) Malinovskii, Y.A. and N.V. Belov (1980) Crystal structure of kalborsite. Doklady Acad. Nauk SSSR, 252, 611–615 (in Russian). (3) (1981) Amer. Mineral., 66, 879 (abs. refs. 1 and 2).

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