Ekaterinite $Ca_2B_4O_7(Cl,OH)_2 \cdot 2H_2O$

Crystal Data: Hexagonal. *Point Group:* 6 (?). As foliated hexagonal crystals, to 1 mm; massive in veinlets and crusts.

Physical Properties: *Cleavage:* On {0001}, distinct, foliated. Hardness = 1–1.5 D(meas.) = 2.440(5) D(calc.) = [2.17] Hygroscopic with swelling, soluble in H_2O; luminesces and phosphoresces blue at 77 °K and 300 °K.

Optical Properties: Transparent to translucent. *Color:* White, may have a pale rose tint. *Luster:* Pearly.
Optical Class: Biaxial (–). $\alpha = 1.574(1)$ $\beta =$ n.d. $\gamma = 1.577(1)$ 2V(meas.) = Very small.

Cell Data: *Space Group:* $P6$ (?). $a = 11.86$ $c = 23.88$ Z = [6]

X-ray Powder Pattern: Korshunovskoye deposit, Russia.
2.31 (100), 1.916 (100), 2.047 (99), 2.09 (98), 1.281 (97), 2.51 (93), 1.166 (87)

Chemistry:

	(1)		(1)
B_2O_3	38.47	K_2O	0.16
SiO_2	0.04	F	0.00
Fe_2O_3	0.04	Cl	11.07
MnO	trace	H_2O^+	14.17
MgO	0.11	H_2O^-	7.62
CaO	30.67	$-O = (F,Cl)_2$	2.50
Na_2O	0.08	Total	99.93

(1) Korshunovskoye deposit, Russia; H_2O and borate anion confirmed by IR; corresponds to $Ca_{2.00}B_{4.04}O_7[Cl_{1.14}(OH)_{0.86}]_{\Sigma=2.00} \cdot 2.38H_2O$.

Occurrence: In calcite and calcite–anhydrite veins associated with a mineralized skarn.

Association: Halite, calcite, szaibélyite, korshunovskite, shabynite, iowaite, dashkovaite, siderite, hydromagnesite, quartz.

Distribution: From drill cores in the Korshunovskoye iron–boron skarn deposit, Irkutsk district, Siberia, Russia.

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Type Material: Mining Institute, St. Petersburg, 1224/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 80173; National Museum of Natural History, Washington, D.C., USA, 160242, 160482.

References: (1) Malinko, S.V., B.P. Fitsev, N.N. Kuznetsova, and L.Y. Cherkasova (1980) Yekaterinite – a new boron mineral. Zap. Vses. Mineral. Obshch., 109, 469–476 (in Russian). (2) (1981) Amer. Mineral., 66, 437 (abs. ref. 1).