Kurgantaite $CaSr(B_3O_9)Cl \cdot H_2O$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$. Rough prismatic crystals, to 37 cm; typically in dense aggregates. *Twinning:* Infrequent, on an unknown law.

Physical Properties: *Cleavage:* On {010}. Hardness = 2.5–3 D(meas.) = 1.847–1.862 D(calc.) = 1.855

Optical Properties: Transparent to translucent. *Color:* White, greenish gray from included clay; colorless in transmitted light. *Luster:* Vitreous.
Optical Class: Biaxial (–). *Orientation:* $Y \simeq b$; an optic axis nearly $\perp$ {001}.
Dispersion: $r > v$. $\alpha = 1.488$–1.491 $\beta = 1.508$–1.510 $\gamma = 1.515$–1.525 2V(meas.) = 60°–80°

Cell Data: *Space Group:* $P\overline{1}$. $a = 8.3479(1)$ $b = 10.6068(1)$ $c = 6.4447(1)$
$\alpha = 98.846(1)°$ $\beta = 108.981(1)°$ $\gamma = 105.581(1)°$ Z = 2

X-ray Powder Pattern: [Inder deposit, Kazakhstan.]
7.224 (100), 4.895 (85), 4.205 (80), 5.007 (75), 2.677 (75), 2.477 (70), 3.479 (65)

Chemistry:

	(1)	(2)
SiO_2	0.10	
B_2O_3	37.58	37.32
R_2O_3	0.20	
MgO	15.46	14.40
CaO	0.16	
F	0.14	
H_2O	47.09	48.28
$-O = F_2$	0.06	
Total	100.67	100.00

(1) Inder deposit, Kazakhstan. (2) $MgB_3O_3(OH)_5 \cdot 5H_2O$.

Polymorphism & Series: Dimorphous with inderite.

Occurrence: An uncommon mineral, typically in lake-bed borate deposits.

Association: Szaibélyite (Lake Inder, Kazakhstan).

Distribution: From the Inder borate deposit, Kazakhstan. At the Zhacang-Caka brine lake, and others, Qinghai Province and Xizang, Tibet, China. In the Kirka borate deposit, Kütahya Province, Turkey. Very large crystals from the Kramer borate deposit, Boron, Kern Co., California, USA. At the Tincalayu borax deposit, Salar del Hombre Muerto, Salta Province, Argentina.

Name: To honor Professor Nikolai Semenovich Kurnakov (1860–1941), Russian mineralogist and chemist, Institute of General and Inorganic Chemistry, Moscow, Russia.

Type Material: Karpinskii All-Union Research Institute of Geology, St. Petersburg; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 61590.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 360. (2) Corazza, E. (1974) The crystal structure of kurnakovite: a refinement. Acta Cryst., 30, 2194–2199. (3) Schmetzer, K. and H.R. Gärtner (1975) Über Kurnakovit und Inderit, zwei wasserhaltige Magnesiumborate gleicher chemischer Zusammensetzung ($2MgO \cdot 3B_2O_3 \cdot 15H_2O$). Zeit. Deut. Gemmol. Ges., 24, 130–137 (in German with English abs.).