Borocookeite $LiAl_4(Si_3B)O_{10}(OH)_8$

Crystal Data: Monoclinic. *Point Group*: *m*. As dense, massive aggregates or thin crusts and snow-like coatings of flaky crystals, to 0.15 mm.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: n.d. *Tenacity*: Not elastic. Hardness = 3 D(meas.) = 2.62(1) D(calc.) = 2.69(1)

Optical Properties: Translucent. *Color*: Colorless, light grey with a pinkish or yellow hue. *Streak*: Light pinkish gray. *Luster*: Greasy.
Optical Class: Biaxial. $\alpha = 1.574(2)$ $\beta = 1.580(2)$ $\gamma = 1.591(2)$ 2V(calc.) = 72°

Cell Data: *Space Group*: Probably *Cc* by analogy with cookeite. $a = 5.110(4)$ $b = 8.856(3)$ $c = 14.080(6)$ $\beta = 96.9°$ Z = 2

X-ray Powder Pattern: Malkhan deposit, Chikoy district, Chita oblast, Russia.
3.512 (100), 4.71 (70), 6.99 (50), 2.807 (20), 2.304 (17), 2.304 (16), 2.332 (14)

Chemistry:

	(1)		(1)
SiO_2	34.19	Li_2O	4.65
TiO_2	0.02	Rb_2O	0.004
Al_2O_3	41.77	Cs_2O	0.005
FeO	0.06	B_2O_3	4.06
MnO	0.07	BeO	0.05
MgO	0.04	H_2O^+	14.17
CaO	0.08	H_2O^-	0.11
Na_2O	0.01	F	1.22
K_2O	< 0.01	– O = F	0.51
		Total	100.00

(1) Malkhan deposit, Chikoy district, Chita oblast, Russia; by wet chemistry, flame photometry and electron microprobe analyses, recalculated to 100% after deduction of 1.91 wt. % admixed quartz; corresponding to $Li_{1.61}Al_{3.80}(Al_{0.44}B_{0.60}Be_{0.01}Si_{2.95})_{\Sigma=4.00}O_{10}[F_{0.33}(OH)_{7.81}]_{\Sigma=8.14}$.

Mineral Group: Chlorite group.

Occurrence: In miarolitic cavities in gem-bearing, zoned, complex, Li-bearing granitic pegmatite.

Association: Elbaite, lepidolite, danburite, boron-rich muscovite, laumontite, quartz, albite.

Distribution: From the Sosedka and Mokhovaya pegmatite veins, Malkhan gem tourmaline deposit, Krasny Chikoy district, Chita oblast, Russia.

Name: The prefix indicates the boron-dominant analogue of *cookeite*.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Science, Moscow, Russia (2522/1).

References: (1) Zagorsky, V.Y., I.S. Peretyazhko, A.N. Sapozhnikov, A.P. Zhukhlistov, and B.B. Zvyagin (2003) Borocookeite, a new member of the chlorite group from the Malkhan gem tourmaline deposit, Central Transbaikalia, Russia. Amer. Mineral., 88, 830-836.