Buryatite $Ca_3(Si, Fe^{3+}, Al)(SO_4)B(OH)_4(OH, O)_6 \cdot 12H_2O$

Crystal Data: Hexagonal. *Point Group*: 3*m*. As lenticular and streaky segregations, to 10 mm, comprised of finely dispersed particles, iridescent platelets, and rare tabular crystals to 10 μm displaying {001} and {100}.

Physical Properties: *Cleavage*: Perfect {100}. *Tenacity*: Sectile. *Fracture*: n.d. Hardness = 2.5
D(meas.) = n.d. D(calc.) = 1.895(10) Soluble in dilute HCl and H_2SO_4.
Weak light-blue fluorescence in SW UV.

Optical Properties: Transparent to translucent. *Color*: Light gray with a lilac tint. *Streak*: White. *Luster*: Dull.
Optical Class: Uniaxial. ω = 1.532(3) ε = 1.523(3)

Cell Data: *Space Group*: *P*31*c* (possible). a = 11.14(1) c = 20.99(5) Z = 4

X-ray Powder Pattern: Solongo deposit, Buryatiya, Russia.
2.596 (100), 2.121 (90), 9.70 (80), 1.498 (70), 2.736 (60), 2.374 (60), 1.833 (60)

Chemistry:

	(1)
CaO	25.88
SiO_2	5.60
B_2O_3	5.7
Fe_2O_3	2.20
Al_2O_3	0.75
MnO_2	0.27
MgO	0.38
SO_3	12.52
H_2O	45.8
Total	99.10

(1) Solongo deposit, Buryatiya, Russia; average electron microprobe analysis supplemented by IR spectroscopy, B by atomic emission spectroscopy, H_2O by LOI; corresponding to $Ca_{6.00}(Si_{1.21}Fe^{3+}_{0.36}Al_{0.19}Mg_{0.12}Mn^{4+}_{0.04})_{\Sigma=1.92}[SO_4]_{2.03}[B(OH)_4]_{2.13}[(OH)_{11.30}O_{0.70}] \cdot 23.13H_2O$.

Mineral Group: Ettringite group.

Occurrence: From drill core containing frolovite veinlets in kurchatovite-sakhaite ore.

Association: Calcite, magnetite, brucite, fluoborite.

Distribution: At the Solongo deposit, Buryatiya, Russia.

Name: For the type locality.

Type Material: A.E. Fersman Mineralogical Museum, Moscow, Russia.

References: (1) Malinko, S.V., N.V. Chukanov, V.T. Dubinchuk, A.E. Zadov, and E.V. Koporulina (2001) Buryatite, $Ca_3(Si,Fe^{3+},Al)[SO_4][B(OH)_4](OH)_5O \cdot 12H_2O$, a new mineral. Zap. Vseross. Mineral. Obshch., 130(2), 72-78 (in Russian, English abs.). (2) (2002) Amer. Mineral., 87, 1509 (abs. ref. 1).