

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Prismatic crystals, to 1.5 cm, in radial clusters and bundles, intimately intergrown with sibirskite.

Physical Properties: *Fracture:* Uneven to conchoidal. Hardness = ~ 3.5 $D(\text{meas.}) = 2.878$ $D(\text{calc.}) = 2.88$ Bright green cathodoluminescence.

Optical Properties: Transparent to translucent. *Color:* Colorless to white.
Optical Class: Biaxial (-). *Orientation:* Extinction angle 22° . $\alpha = 1.595$ $\beta = 1.654$
 $\gamma = 1.670$ $2V(\text{meas.}) = 54^\circ$

Cell Data: *Space Group:* $Pccn$. $a = 8.38$ $b = 13.81$ $c = 5.00$ $Z = 8$

X-ray Powder Pattern: Novofrolovskoye deposit, Russia.
3.44 (10), 3.57 (8), 1.976 (7), 1.870 (7), 1.793 (7), 7.10 (6), 3.81 (6)

Chemistry:	(1)	(2)
As ₂ O ₅	0.30	
SiO ₂	0.55	
CO ₂	6.07	
B ₂ O ₃	47.58	55.39
Fe ₂ O ₃	0.22	
Al ₂ O ₃	0.18	
MgO	0.81	
CaO	44.08	44.61
H ₂ O ⁺	0.17	
H ₂ O ⁻	0.50	
Total	100.46	100.00

(1) Novofrolovskoye deposit, Russia; contaminated by calcite, dolomite, and garnet. (2) CaB₂O₄.

Occurrence: From drillcore into a contact metasomatized limestone near a quartz diorite intrusion associated with a copper deposit in skarn.

Association: Sibirskite, calcite, dolomite, garnet, magnetite, pyroxene.

Distribution: From the Novofrolovskoye copper deposit, near Krasnoturinsk, Turinsk district, Northern Ural Mountains, Russia.

Name: For the essential chemical components, CALCIum and BORon.

Type Material: St. Petersburg Mining Institute, St. Petersburg, 1297/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 64943.

References: (1) Petrova, E.S. (1955) Calciborite, a new mineral. *Geology of Mining and Chemical Raw Materials*, 218–223 (in Russian). (2) (1956) *Amer. Mineral.*, 41, 815 (abs. ref. 1). (3) Malinko, S.V., N.N. Kuznetsova, V.M. Pensionerova, and L.I. Rybakova (1963) New data on calciborite. *Zap. Vses. Mineral. Obshch.*, 92, 684–690 (in Russian). (4) Shashkin, D.P., M.A. Simonov, and N.V. Belov (1971) X-ray diffraction study of natural calcium metaborates. *Kristallografiya (Sov. Phys. Crystal.)*, 16, 231–235 (in Russian). (5) Yegorov-Tismenko, Y.K., M.A. Simonov, and N.V. Belov (1980) Crystal structures of calciborite Ca₂[BO₃BO]₂ and synthetic calcium boraluminate 2CaAl[BO₃]O \equiv Ca₂[AlO₃BO]₂. *Doklady Acad. Nauk SSSR*, 251, 1122–1123 (in Russian). (6) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. *Ocean Pictures*, Moscow, 49.