

Crystal Data: Monoclinic. *Point Group:* 2/m. Tabular prismatic crystals, to 3.5 cm; typically, granular and less than 1 mm.

Physical Properties: *Cleavage:* One, || elongation, poor. Hardness = 3.5-5 D(meas.) = 2.35-2.36 D(calc.) = n.d. Fluoresces violet under LW UV.

Optical Properties: Semitransparent to transparent. *Color:* Colorless to gray; colorless in thin section. *Luster:* Vitreous to silky.

Optical Class: Biaxial (+), shows anomalous interference colors. *Orientation:* Positive elongation, inclined extinction. *Dispersion:* $r > v$, strong. $a = 1.573-1.575$ $\beta = 1.577-1.578$ $\gamma = 1.585-1.584$ $2V(\text{meas.}) = 66^\circ-76^\circ$

Cell Data: *Space Group:* C2/c. $a = 13.119-13.12$ $b = 9.500-9.526$ $c = 13.445-13.56$
 $\beta = 118.40^\circ-119.62^\circ$ $Z = 4$

X-ray Powder Pattern: Novofrolovo mine, Russia.
2.41 (10), 7.04 (8), 2.21 (8), 3.79 (7), 3.66 (7), 3.02 (7), 2.05 (7)

Chemistry:	(1)	(2)	(3)
SiO ₂	2.09		
B ₂ O ₃	39.58	39.37	40.07
Al ₂ O ₃	0.72		
Fe ₂ O ₃	1.23		
MgO	0.47		
CaO	33.00	32.31	32.28
H ₂ O ⁺	23.35	27.08	
H ₂ O ⁻	0.00	0.83	
<u>H₂O</u>			<u>27.65</u>
Total	100.44	99.59	100.00

(1) Novofrolovo mine, Russia. (2) Fuka, Japan; yields Ca_{3.05}B_{5.99}O_{6.04}(OH)₁₂·1.96H₂O.

(3) Ca₃B₆O₆(OH)₁₂·2H₂O.

Occurrence: In a skarn formed by quartz diorite intruding limestone (Novofrolovo mine, Russia); near gehlenite-spurrite skarn formed by hydrothermal alteration (Fuka, Japan).

Association: Grossular-andradite, szaibélyite, sibirskite, calciborite, dolomite, calcite (Novofrolovo mine); olshanskyite, pentahydroborite, sibirskite, parasibirskite, shimazakiite, calcite (Fuka, Japan).

Distribution: From the Novofrolovo mine, near Krasnoturinsk, Turinsk district, Northern Ural Mountains, Russia. At Fuka, near Bicchu, Okayama Prefecture, Japan. Very large euhedral crystals from Charcas, San Luis Potosi, Mexico.

Name: Honors Roman Vladimirovich Nifontov (1901-1960), Russian geologist who studied sedimentary and placer deposits.

Type Material: Vernadsky Geological Museum (48611) and the A.E. Fersman Mineralogical Museum, Russian Academy of Sciences (64942), Moscow, Russia.

References: (1) Malinko, S.V. and A.E. Lisitsyn (1961) A new boron mineral - nifontovite. Doklady Acad. Nauk SSSR, 139, 188-190 (in Russian). (2) (1962) Amer. Mineral., 47, 172 (abs. ref. 1). (3) Yegorov-Tismenko, Y.K., M.A. Simonov, and N.V. Belov (1973) Crystal structure of nifontovite, Ca₃[B₃O₃(OH)₆]₂·2H₂O, a natural calcium metaborate. Doklady Acad. Nauk SSSR, 210, 678-681 (in Russian). (4) Kusachi, I. and C. Henmi (1994) Nifontovite and olshanskyite from Fuka, Okayama Prefecture, Japan. Mineral. Mag., 58, 279-284. (5) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 152-153. (6) Hawthorne, F.C., W.W. Pinch, and F.H. Pough (2005) Nifontovite from Charcas, San Luis Potosi, Mexico. Min. Rec., 36, 375-376. (7) (2006) Amer. Mineral., 91(1), 222 (abs. ref. 6).