

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As fractured grains to 1 mm.

Physical Properties: *Cleavage:* Imperfect. *Fracture:* Conchoidal *Tenacity:* Brittle.
Hardness = 5.5-6.5 VHN = 290-339 (50 g load). D(meas.) = n.d. D(calc.) = 3.12

Optical Properties: Transparent. *Color:* Colorless to light brown. *Streak:* n.d. *Luster:* Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.611(1)$ $\beta = 1.623(1)$ $\gamma = 1.644(1)$ $2V(\text{meas.}) = 55^\circ\text{-}65^\circ$
 $2V(\text{calc.}) = 75^\circ$ *Orientation:* $X = b, Y = c, Z = a$.

Cell Data: *Space Group* Pnma. $a = 20.494(3)$ $b = 11.890(2)$ $c = 4.5880(6)$ $Z = 16$

X-ray Powder Pattern: Snezhnoye Deposit, Republic of Sakha-Yakutia, Russia.
1.7124 (100), 2.2455 (86), 2.7480 (61), 1.4817 (51), 1.7074 (47), 2.2408 (45), 2.4788 (42)

Chemistry:	(1)
SiO ₂	11.72
B ₂ O ₃	20.37
MgO	60.57
FeO	2.05
MnO	0.34
CaO	0.10
F	3.84
H ₂ O	[3.21]
- O = F	1.63
Total	100.57

(1) Snezhnoye Deposit, Sakha-Yakutia, Russia; average electron microprobe analysis, supplemented by FTIR and SIMS spectroscopy, H₂O calculated for charge balance; grain for structure analysis corresponds to (Mg_{1.95}Fe_{0.04}Mn_{0.01})(BO₃)_{0.75}(SiO₄)_{0.25}[(OH)_{0.45}F_{0.30}].

Polymorphsim & Series: Forms a series with pertsevite-(F).

Occurrence: In ludwigite-kotoite magnesian skarn.

Association: Kotoite, szaibelyite, ludwigite-azoproite, clinohumite, hydroxylclinohumite, forsterite, chondrodite, calcite, REE-bearing sakhaite, sphalerite, goethite.

Distribution: At the Snezhnoye deposit, East Verkhoyan'ye region, 250-300 km east of Verhoyansk, Sakha-Yakutia and at Gonochan, Dzhugdzhur Ridge, 60-70 km from the Okhotsk Sea coast, Far East, Russia.

Name: Honors Nikolai Nikolayevich *Pertsev*, Russian mineralogist specializing in boron minerals and deposits and a suffix identifies the OH-dominant member of the series.

Type Material: Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (3755/1).

References: (1) Galuskina, I.O., L. Ottolini, M. Kadiyski, T. Armbruster, E.V. Galuskin, P. Dzierzanowski, and A. Winiarski (2010) Pertsevite-(OH), a new mineral in the pertsevite series, Mg₂(BO₃)_{1-x}(SiO₄)_x(F,OH)_{1-x} ($x < 0.5$), from the Snezhnoye deposit in Sakha-Yakutia Republic, Russia. *Amer. Mineral.*, 95(7), 953-958. (2) Galuskina, I.O., M. Kadiyski, T. Armbruster, E.V. Galuskin, N.N. Pertsev, P. Dzierzanowski, and R. Wrzalik (2008) A new natural phase in the system Mg₂SiO₄-Mg₂BO₃F-Mg₂BO₃(OH): composition, paragenesis and structure of OH-dominant pertsevite. *Eur. Jour. Mineral.*, 20(5), 951-964. (3) Schreyer, W., T. Armbruster, H.-J. Bernhardt, and O. Medenbach (2003) Pertsevite, a new silicatian magnesioborate mineral with an end-member composition Mg₂BO₃F, in kotoite marble from east of Verkhoyansk, Sakha-Yakutia, Russia. *Eur. J. Mineral.*, 15, 1007-1018. (4) (2004) *Amer. Mineral.*, 89(10), 1576 (abs. ref. 3)