

**Fedorovskite****Ca<sub>2</sub>(Mg, Mn<sup>2+</sup>)<sub>2</sub>B<sub>4</sub>O<sub>7</sub>(OH)<sub>6</sub>**

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**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As prismatic crystals, sometimes with rhombic outlines, to 1 cm; commonly in fibrous aggregates. *Twinning:* Polysynthetic, with {100} as composition plane.

**Physical Properties:** *Cleavage:* On {100}, perfect. Hardness = 4.5 D(meas.) = 2.65 D(calc.) = 2.60

**Optical Properties:** Semitransparent. *Color:* Brown. *Optical Class:* Biaxial (-). *Pleochroism:* X = colorless to pale yellow; Z = yellow to bright yellow. *Orientation:* X = c; Z = a. *Dispersion:* r < v, very strong. α = 1.619–1.623 β = 1.627–1.632 γ = 1.629–1.634 2V(meas.) = 48°

**Cell Data:** *Space Group:* Pbam. a = 8.96(2) b = 13.15(2) c = 8.15(1) Z = [4]

**X-ray Powder Pattern:** Solongo deposit, Russia. 3.92 (10), 2.59 (10), 3.02 (7), 2.119 (7), 1.693 (7), 1.632 (7), 2.28 (6)

<b>Chemistry:</b>	(1)	(2)
B <sub>2</sub> O <sub>3</sub>	35.4	33.42
FeO	1.3	
MnO	11.6	17.02
MgO	11.6	9.67
CaO	25.2	26.92
H <sub>2</sub> O	n.d.	12.97
Total		100.00

(1) Solongo deposit, Russia; partial elemental analysis, here converted to oxides; corresponds to Ca<sub>2</sub>(Mg<sub>1.3</sub>Mn<sub>0.7</sub>)<sub>Σ=2.0</sub>B<sub>4</sub>O<sub>7</sub>(OH)<sub>6</sub>. (2) Ca<sub>2</sub>(Mg, Mn)<sub>2</sub>B<sub>4</sub>O<sub>7</sub>(OH)<sub>6</sub> with Mg:Mn = 1:1.

**Polymorphism & Series:** Forms a series with roweite.

**Occurrence:** In veinlets in a skarn-type boron deposit.

**Association:** Sakhaite, frolovite, uralborite, szaibélyite, datolite.

**Distribution:** From the Solongo boron deposit, Buryatia, Transbaikal region, Russia.

**Name:** Honors Nikolai Mikhailovich Fedorovskii (1886–1956), eminent crystallographer and founder of the Russian Research Institute of Mineral Resources, Moscow, Russia.

**Type Material:** Mineralogical Museum, St. Petersburg University, St. Petersburg, 1223/1; Il'menskii Preserve Museum, Miass, 4239; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 76926, 77482, 77659.

**References:** (1) Malinko, S.V., D.P. Shashkin, and K.V. Yurkina (1977) Fedorovskite, a new boron mineral, and the isomorphous series roweite-fedorovskite. Zap. Vses. Mineral. Obshch., 105, 71–85. (2) (1977) Amer. Mineral., 62, 173 (abs. ref. 1).