Pseudosinhalite $Mg_2Al_3B_2O_9(OH)$

Crystal Data: Monoclinic. *Point Group:* $2/m$. As a topotactic replacement of sinhalite grains. *Twinning:* Polysynthetic on a very fine scale, observed optically.

Physical Properties: *Fracture:* Conchoidal. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.508

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (–). *Orientation:* $Z = b$. $n = 1.72$ $\alpha = 1.691(1)$ (synthetic) $\beta = 1.713(1)$ $\gamma = 1.730(1)$ 2V(meas.) = 80°

Cell Data: *Space Group:* $[P2_1/c]$ (by analogy to synthetic). $a = 7.49(1)$ $b = 4.33(1)$ $c = 9.85(1)$ $\beta = 110.7(1)°$ Z = 2

X-ray Powder Pattern: Tayozhnoye deposit, Russia.
2.14 (100), 1.625 (100), 2.102 (60), 3.21 (40), 2.61 (40), 1.607 (40), 1.399 (40)

Chemistry:

	(1)	(2)
B_2O_3	[21.75]	22.30
Al_2O_3	46.88	48.99
FeO	1.99	
MgO	25.12	25.82
H_2O	[2.81]	2.89
Total	[98.55]	100.00

(1) Tayozhnoye deposit, Russia; by electron microprobe, average of 14 analyses; total Fe as FeO, B_2O_3 and H_2O calculated for stoichiometry; corresponds to $(Mg_{1.98}Fe_{0.09})_{\Sigma=2.07}$ $Al_{2.93}B_{2.00}O_9(OH)$. (2) $Mg_2Al_3B_2O_9(OH)$.

Occurrence: A rare mineral in a contact-metasomatic boron-rich iron deposit, a product of retrograde alteration of sinhalite in magnesium-bearing skarn.

Association: Forsterite, spinel, ludwigite, warwickite, suanite, szaibélyite, brucite, clinohumite, sinhalite, hydrotalcite.

Distribution: From the Tayozhnoye iron deposit, 550 km south of Yakutsk, Sakha, Russia.

Name: From the Greek for *false*, in recognition of its close relation to *sinhalite*.

Type Material: Institute for Mineralogy, Ruhr University, Bochum, Germany.

References: (1) Schreyer, W., N.N. Pertsev, O. Medenbach, M. Burchard, and D. Dettmar (1998) Pseudosinhalite: discovery of the hydrous MgAl−borate as a new mineral in the Tayozhnoye, Siberia, skarn deposit. Mineral. Petrol., 133, 382–388. (2) (1999) Amer. Mineral., 84, 1196–1197 (abs. ref. 1). (3) Daniels, P., S. Krosse, G. Werdling, and W. Schreyer (1997) "Pseudosinhalite", a new hydrous MgAl−borate: synthesis, phase characterization, crystal structure, and *PT*-stability. Mineral. Petrol., 128, 261–271. (4) Strunz, H. and E. Nickel (2000) Pseudosinhalite is a structural isotype of chondrodite. (2000) Amer. Mineral., 85, 1828–1829.