

# Dorfmanite

# Na<sub>2</sub>(PO<sub>3</sub>OH)•2H<sub>2</sub>O

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**Crystal Data:** Orthorhombic. *Point Group:* n.d. Powdery aggregates and incrustations, with individual particles up to 15 μm.

**Physical Properties:** Hardness = 1–1.5 in aggregates. D(meas.) = 1.98–2.00  
D(calc.) = 2.06 Very soluble in H<sub>2</sub>O.

**Optical Properties:** Semitransparent. *Color:* White. *Luster:* Vitreous to earthy.  
*Optical Class:* Biaxial (+). *Orientation:* Z || elongation. *Dispersion:* r > v, weak. α = 1.454  
β = 1.461 γ = 1.471 2V(meas.) = 65°

**Cell Data:** *Space Group:* n.d. (synthetic). a = 10.34 b = 16.82 c = 6.601 Z = 8

**X-ray Powder Pattern:** Kola Peninsula, Russia.

3.35 (100), 3.25 (81), 4.64 (75), 2.869 (75), 2.260 (75), 5.28 (56), 2.928 (56)

## Chemistry:

	(1)	(2)	(3)
P <sub>2</sub> O <sub>5</sub>	39.49	40.83	39.88
Na <sub>2</sub> O	34.84	33.80	34.82
K <sub>2</sub> O	trace	0.00	
F	0.00	0.00	
H <sub>2</sub> O	25.44	25.60	25.30
Total	99.77	100.23	100.00

(1) Mt. Koashva, Russia; corresponds to Na<sub>2.02</sub>H<sub>0.98</sub>PO<sub>4</sub>•2.04H<sub>2</sub>O. (2) Kola Peninsula, Russia; corresponds to Na<sub>1.89</sub>H<sub>1.11</sub>PO<sub>4</sub>•1.97H<sub>2</sub>O. (3) Na<sub>2</sub>(PO<sub>3</sub>OH)•2H<sub>2</sub>O.

**Occurrence:** Noted in drill cores into alkalic pegmatites in differentiated alkalic massifs, as an alteration product of lomonosovite and nacaphite (Kola Peninsula, Russia); in sodalite xenoliths associated with an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).

**Association:** Lomonosovite, olympite, villiaumite (Kola Peninsula, Russia); sodalite, villiaumite, eudialyte, lovozerite, ussingite (Mont Saint-Hilaire, Canada).

**Distribution:** In Russia, on the Kola Peninsula, from Mts. Yukspor, Kukisvumchorr, Koashva, and Rasvumchorr in the Khibiny massif, and on Mts. Karnasurt and Alluaiv in the Lovozero massif. At Mont Saint-Hilaire, Quebec, and in the Tanco pegmatite, Bernic Lake, Manitoba, Canada.

**Name:** To honor Moisei Davidovich Dorfman (1908– ), Russian mineralogist, A.E. Fersman Mineralogical Museum, Moscow, Russia, investigator of Khibiny minerals.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

**References:** (1) Kapustin, Y.L., Z.V. Pudovkina, and T.Y. Bykova (1980) Dorfmanite, a new mineral. *Zap. Vses. Mineral. Obshch.*, 109, 211–216 (in Russian). (2) (1981) *Amer. Mineral.*, 66, 217–218 (abs. ref. 1). (3) Horváth, L. and R.A. Gault (1990) The mineralogy of Mont Saint-Hilaire, Quebec. *Mineral. Record*, 21, 284–359, esp. 306. (4) Khomyakov, A.P. (1995) *Mineralogy of hyperagpaitic alkaline rocks*. Clarendon Press, Oxford, 162–163.