Dorfmanite $Na_2(PO_3OH)\cdot 2H_2O$

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_2O.

Optical Properties: Semitransparent. *Color:* White. *Luster:* Vitreous to earthy. *Optical Class:* Biaxial (+). *Orientation:* $Z \parallel$ elongation. *Dispersion:* $r > v$, weak. $\alpha = 1.454$ $\beta = 1.461$ $\gamma = 1.471$ 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_2O_5	39.49	40.83	39.88
Na_2O	34.84	33.80	34.82
K_2O	trace	0.00	
F	0.00	0.00	
H_2O	25.44	25.60	25.30
Total	99.77	100.23	100.00

(1) Mt. Koashva, Russia; corresponds to $Na_{2.02}H_{0.98}PO_4 \cdot 2.04H_2O$. (2) Kola Peninsula, Russia; corresponds to $Na_{1.89}H_{1.11}PO_4 \cdot 1.97H_2O$. (3) $Na_2(PO_3OH) \cdot 2H_2O$.

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.