Davreuxite $\mathbf{Mn^{2+}Al_6Si_4O_{17}(OH)_2}$

Crystal Data: Monoclinic. *Point Group:* $2/m$. Asbestiform; as small bundles of extremely fine fibers, to several cm; these may be folded or imbricated.

Physical Properties: *Cleavage:* Good on {100}. *Fracture:* Cross fractures on {010}. *Tenacity:* Brittle. Hardness = 2–3 D(meas.) = 3.30–3.38 D(calc.) = 3.34

Optical Properties: Transparent to translucent. *Color:* Creamy white to very pale rose; colorless to faint yellow in thin section.
Optical Class: Biaxial (–). *Orientation:* $Z = b$; $X \simeq \perp \{100\}$. $\alpha = 1.660(5)$ $\beta = 1.684(2)$ $\gamma = 1.690(2)$ 2V(meas.) = 48°–70°

Cell Data: *Space Group:* $P2_1/m$. $a = 9.518(6)$ $b = 5.753(2)$ $c = 12.04(1)$ $\beta = 108.00(5)°$ Z = 2

X-ray Powder Pattern: Ottré, Belgium.
3.511 (100), 2.870 (60), 3.103 (45), 4.290 (40), 5.719 (35), 2.840 (35), 8.51 (30)

Chemistry:

	(1)	(2)	(3)
SiO_2	37.82	37.45	37.84
TiO_2		trace	
Al_2O_3	46.88	48.09	48.15
Fe_2O_3	1.10		
Cr_2O_3		trace	
FeO		1.29	
MnO	9.08	9.14	11.17
CuO	0.79		
ZnO	0.49		
MgO	0.44	0.45	
H_2O	[2.83]	[2.82]	2.84
P_2O_5	0.35		
Total	[99.78]	[99.24]	100.00

(1) Ottré, Belgium; by electron microprobe, total Fe as Fe_2O_3, H_2O calculated from stoichiometry. (2) Recht, Belgium; by electron microprobe, H_2O calculated from stoichiometry. (3) $MnAl_6Si_4O_{17}(OH)_2$.

Occurrence: In quartz veins cutting Mn, Al-rich metapelites, derived from shales subjected to low-grade metamorphism.

Association: Quartz, pyrophyllite, ottrélite, andalusite, sudoite, kaolinite, rutile, dickite (Ottré, Belgium); chloritoid, hematite, chlorite (Sart-Close, Belgium).

Distribution: In Belgium, in the Stavelot massif, at Ottré, at Sart-Close, near Salmchâteau, at Regne, and at Recht.

Name: For Charles Joseph Davreux (1800–1863), Belgian pharmacist and natural scientist, Professor of Mineralogy at the University of Liège, Belgium.

Type Material: Royal Institute of Natural Sciences of Belgium, Brussels, Belgium.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 706.
(2) Fransolet, A.-M. and P. Bourguignon (1976) Précisions minéralogiques sur la davreuxite. Compt. Rendus Acad. Sci. Paris, 283, 295–296 (in French). (3) (1978) Amer. Mineral., 63, 795 (abs. ref. 2). (4) Fransolet, A.-M., K. Abraham, and K. Sahl (1984) Davreuxite: a reinvestigation. Amer. Mineral., 69, 777–782. (5) Sahl, K., P.G. Jones, and G.M. Sheldrick (1984) The crystal structure of davreuxite, $MnAl_6Si_4O_{17}(OH)_2$. Amer. Mineral., 69, 783–787.