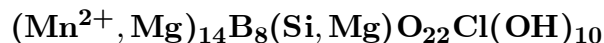


Wiserite

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Crystal Data: Tetragonal. *Point Group:* $4/m$. In prismatic to fibrous crystals, elongated || [001], to 1 cm, showing {100} and {110}; in platy aggregates, very fine grained, massive.

Physical Properties: Hardness = 2.5 D(meas.) = 3.54(8) D(calc.) = 3.57

Optical Properties: Transparent. *Color:* White to light pinkish brown. *Luster:* Vitreous. *Optical Class:* Uniaxial (-). *Pleochroism:* *O* = colorless to bright orange-brown; *E* = bright to dark orange-brown. $\omega = 1.751\text{--}1.753$ $\epsilon = 1.700\text{--}1.715$

Cell Data: *Space Group:* $P4/n$. $a = 20.192(6)$ $c = 3.281(2)$ $Z = 2$

X-ray Powder Pattern: Kombat mine, Namibia. 3.365 (100), 2.854 (90), 6.40 (85), 2.654 (80), 2.753 (70), 2.702 (65), 2.522 (65)

Chemistry:	(1)	(2)	(3)
SiO ₂	n.d.	2.0	3.5
B ₂ O ₃	18.14	17.5	
FeO		0.2	0.7
MnO	65.13	64.3	63.8
MgO	2.88	4.9	1.2
CaO	3.33	0.3	0.0
Cl	3.12	2.1	1.7
H ₂ O	8.10	7.0	
-O = Cl ₂	0.70	0.5	
Total	[100.00]	97.8	

(1) Gonzen, Switzerland; recalculated to 100.00% after deduction of Al₂O₃ 1.00% and insoluble 1.20%. (2) Kombat mine, Namibia; by electron microprobe, B by titration, H₂O by TGA-EGA and the Penfield method; corresponds to Mn_{12.98}Mg_{1.74}Ca_{0.08}Fe_{0.04}B_{7.17}Si_{0.48}O_{32.52}Cl_{0.85}H_{11.08}. (3) Yaei mine, Japan; by electron microprobe, partial analysis.

Occurrence: An accessory mineral in stratiform manganese deposits.

Association: Hausmannite, jacobsonite, alleghanyite, pyrochroite, pyrobelonite, calcite, rhodochrosite, jimboite, sussexite, alabandite, galaxite, tephroite, gageite.

Distribution: From the Gonzen mine, near Sargans, St. Gallen, Switzerland. In the Kombat mine, 49 km south of Tsumeb, Namibia. In Japan, at the Yaei mine, Tsuchiyama, Shiga Prefecture; the Kaso mine, Tochigi Prefecture; and the Azuma, Nakanoyama, and Rito mines, Gumma Prefecture.

Name: For David Friedrich Wiser (1802–1878), Swiss mineralogist who first analyzed the mineral.

Type Material: Federal Institute of Technology, Zurich, Switzerland, 194501; Harvard University, Cambridge, Massachusetts, 126918; National Museum of Natural History, Washington, D.C., USA, 163804, 163341.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 245. (2) Epprecht, W.T., W.T. Schaller, and A.C. Vlisidis (1959) Über Wiserit, Sussexit und ein weiteres Mineral aus den Manganerzen vom Gonzen (bei Sargans). Schweiz. Mineral. Petrog. Mitt., 39, 85–104 (in German, English summary). (3) Dunn, P.J., C.A. Francis, R.A. Ramik, J.A. Nelen, and J. Innes (1989) Wiserite, an occurrence at the Kombat mine in Namibia, and new data. Amer. Mineral., 74, 1374–1376. (4) Pertlik, F. and P.J. Dunn (1989) Crystal structure of wiserite. Amer. Mineral., 74, 1351–1354.

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