

Chvaleticeite

(Mn²⁺, Mg)SO₄•6H₂O

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Crystal Data: Monoclinic (by analogy to hexahydrate). *Point Group:* 2/m. As efflorescences and coatings, granular, to 0.05 mm.

Physical Properties: Hardness = 1.5 D(meas.) = 1.84 D(calc.) = 1.84 Dehydrates readily in air; easily soluble in H₂O.

Optical Properties: Translucent to transparent. *Color:* White, pale pink, yellowish green; colorless in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial. $\alpha = 1.457$ (α') $\beta = \text{n.d.}$ $\gamma = 1.506$ (γ') $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* C2/c (by analogy to hexahydrate). $a = 10.05(2)$ $b = 7.24(2)$ $c = 24.3(1)$ $\beta = 98.0(2)^\circ$ $Z = 8$

X-ray Powder Pattern: Chvaletice, Czech Republic.

4.91 (10), 5.45 (8), 4.47 (8), 3.98 (8), 3.25 (8), 3.42 (7), 2.967 (7)

Chemistry:

	(1)
SO ₃	31.48
Al ₂ O ₃	trace
Fe ₂ O ₃	0.10
FeO	trace
MnO	15.81
MgO	6.41
CaO	0.04
Na ₂ O	0.01
K ₂ O	0.01
H ₂ O ⁺	0.37
H ₂ O ⁻	45.22
insol.	0.36
Total	99.81

(1) Chvaletice, Czech Republic; Ca, Fe, K, and Na by AA, H₂O by the Penfield method; corresponds to (Mn_{0.57}Mg_{0.40})_{Σ=0.97}SO₄•6.39H₂O.

Mineral Group: Hexahydrate group.

Occurrence: Formed in the oxidation zone of a pyrite–manganese silicate deposit (Chvaletice, Czech Republic).

Association: Melanterite, magnesian–manganite melanterite, epsomite, magnesian–ferroan mallardite, magnesian jokokuite, magnesian ilesite, rozenite, copiapite, gypsum (Chvaletice, Czech Republic); apjohnite, copiapite, epsomite, gypsum (Jáchymov, Czech Republic).

Distribution: In the Czech Republic, from Chvaletice, and at Jáchymov (Joachimsthal).

Name: For the locality where the first specimens were collected, Chvaletice, Czech Republic.

Type Material: Geological Survey, Prague, Czech Republic.

References: (1) Pašava, J., K. Breiter, M. Huka, and J. Korecký (1986) Chvaleticeite, (Mn, Mg)SO₄•6H₂O, a new mineral. Neues Jahrb. Mineral., Monatsh., 121–125. (2) (1987) Amer. Mineral., 72, 1023–1024 (abs. ref. 1).