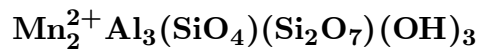


Sursassite

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Crystal Data: Monoclinic. *Point Group:* $2/m$. As fibers, up to 2.5 cm, in veinlets and as radiated botryoidal masses.

Physical Properties: *Cleavage:* On {001} and {101}. Hardness = n.d. $D(\text{meas.}) = 3.256$
 $D(\text{calc.}) = 3.57$

Optical Properties: Semitransparent. *Color:* Copper-red.

Optical Class: Biaxial (-). *Pleochroism:* Strong; $X = Z =$ colorless to pale yellow; $Y =$ deep golden brown. *Dispersion:* $r > v$, strong. $\alpha = 1.735\text{--}1.736$ $\beta = 1.753\text{--}1.755$ $\gamma = 1.766\text{--}1.767$
 $2V(\text{meas.}) = 65^\circ$

Cell Data: *Space Group:* $P2_1/m$. $a = 8.70(1)$ $b = 5.79(1)$ $c = 9.78(1)$ $\beta = 108.9(1)^\circ$
 $Z = 2$

X-ray Powder Pattern: Val d'Err, Switzerland. (ICDD 18-1286).
2.82 (100), 2.88 (70), 2.57 (70), 2.66 (60), 2.14 (60), 4.56 (50), 3.72 (50)

Chemistry:

	(1)	(2)	(3)
SiO ₂	34.70	39.39	35.90
TiO ₂	0.14	0.05	
Al ₂ O ₃	22.90	18.72	30.46
FeO	1.67	3.47	
MnO	29.42	26.64	28.26
MgO	2.79	2.68	
CaO	2.26	2.00	
Na ₂ O	0.12	0.18	
K ₂ O	0.23		
H ₂ O	5.81	6.70	5.38
Total	100.04	99.83	100.00

(1) Val d'Err, Switzerland. (2) Plymouth deposit, Canada. (3) $\text{Mn}_2\text{Al}_3(\text{SiO}_4)(\text{Si}_2\text{O}_7)(\text{OH})_3$.

Occurrence: As vein fillings in manganese deposits in low-grade metasediments.

Association: Braunite, barite, calcite, quartz.

Distribution: From the Val d'Err, Oberhalbstein, Graubünden, Switzerland. In the Plymouth deposit, near Woodstock, New Brunswick, Canada. From the Palos Verdes Hills, Los Angeles Co., California, USA. In the Molinello manganese mine, near Chiavari, Val Graveglia, Liguria, Italy. On Andros Island, Cyclades Islands, Greece.

Name: From the Roman name for Oberhalbstein, *Sursass*, Switzerland.

Type Material: Federal Institute of Technology, Zurich, Switzerland, 194807; The Natural History Museum, London, England.

References: (1) Jakob, J. (1926) Sursassite, ein Mangansilikat aus dem Val d'Err (Graubünden). Schweiz. Mineral. Petrog. Mitt., 6, 376–380 (in German). (2) (1927) Amer. Mineral., 12, 380 (abs. ref. 1). (3) Heinrich, E.W. (1962) Sursassite from New Brunswick. Can. Mineral., 7, 291–300. (4) Mellini, M., S. Merlino, and M. Pasero (1984) X-ray and HRTEM study of sursassite: crystal structure, stacking disorder, and sursassite-pumpellyite intergrowth. Phys. Chem. Minerals, 10, 99–105. (5) Allmann, R. (1984) Die Struktur des Sursassits und ihre Beziehung zur Pumpellyit- und Ardenit-struktur. Fortschr. Mineral., Beiheft 1 (Suppl.), 62, 3–4 (in German).

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