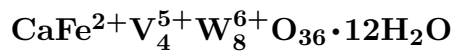


Rankachite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As crusts of needlelike to lathlike crystals, elongated along [001], flattened on {100} or {010}, to 2 mm; in rosettes and subparallel to radial aggregates.

Physical Properties: *Cleavage:* One direction, good, parallel to the plane of flattening. *Fracture:* Uneven. Hardness = ~ 2.5 D(meas.) = > 4.03 D(calc.) = [4.55]

Optical Properties: Opaque to translucent. *Color:* Dark brown to brownish yellow. *Streak:* Brown. *Luster:* Subadamantine to resinous, may be dull. *Optical Class:* Biaxial (-). *Pleochroism:* Strong; X = Y = yellowish brown; Z = reddish brown to opaque. *Orientation:* X \perp plane of flattening; Z = c. *Dispersion:* $r \ll v$, strong. $\alpha = 1.770(5)$ $\beta = 1.925(5)$ $\gamma = 1.970(5)$ $2V(\text{meas.}) = 58^\circ$

Cell Data: *Space Group:* $Pmmn$ (probable). $a = 8.17$ $b = 42.02$ $c = 5.45$ $Z = [2]$

X-ray Powder Pattern: Clara mine, Germany.
10.64 (10), 5.44 (7), 4.57 (6), 4.08 (6), 3.51 (6), 3.26 (6), 3.04 (6)

Chemistry:	(1)	(2)
WO ₃	70.2	72.38
V ₂ O ₅	13.9	14.19
FeO	3.2	2.80
CaO	2.7	2.19
H ₂ O	8.8	8.44
Total	98.8	100.00

(1) Clara mine, Germany; by electron microprobe, corresponding to Ca_{1.26}Fe_{1.12}V_{3.92}W_{7.78}H_{25.04}O₄₈. (2) CaFeV₄W₈O₃₆·12H₂O.

Occurrence: An alteration product of scheelite and iron sulfides in the oxidation zone of a hydrothermal base-metal deposit.

Association: Scheelite, pyrite, marcasite, quartz.

Distribution: From the mill dump of the Clara mine, near Oberwolfach, Black Forest, Germany.

Name: For the Rankach Valley, Germany, in which the Clara mine is located.

Type Material: National Museum of Natural History, Washington, D.C., USA, 160380.

References: (1) Walenta, K. and P.J. Dunn (1984) Rankachit, ein neues Mineral aus der Grube Clara im mittleren Schwarzwald. Neues Jahrb. Mineral., Monatsh., 289–295 (in German with English abs.). (2) (1985) Amer. Mineral., 70, 876 (abs. ref. 1).