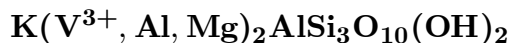


Roscoelite



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Crystal Data: Monoclinic. *Point Group:* $2/m$. As minute scales, in druses, rosettes, or fan-shaped groups; fibrous and in felted aggregates; as impregnations, massive.

Physical Properties: *Cleavage:* Perfect on {001}. *Hardness =* Soft. $D(\text{meas.}) = 2.92\text{--}2.94$
 $D(\text{calc.}) = [2.89]$

Optical Properties: Transparent to translucent. *Color:* Dark clove-brown, greenish brown to dark greenish brown. *Luster:* Pearly.

Optical Class: Biaxial (-). *Pleochroism:* $X = \text{green-brown}$; $Y = Z = \text{olive-green}$.
 $\alpha = 1.59\text{--}1.610$ $\beta = 1.63\text{--}1.685$ $\gamma = 1.64\text{--}1.704$ $2V(\text{meas.}) = 24.5^\circ\text{--}39.5^\circ$

Cell Data: *Space Group:* $C2/c$. $a = 5.26$ $b = 9.09$ $c = 10.25$ $\beta = 101.0^\circ$ $Z = 2$

X-ray Powder Pattern: Paradox Valley, Colorado, USA.

10.0 (100), 4.54 (80), 3.35 (80), 2.60 (80), 1.52 (60), 3.66 (50), 3.11 (50)

Chemistry:

	(1)
SiO ₂	47.82
Al ₂ O ₃	12.60
V ₂ O ₅	19.94
FeO	3.30
MgO	2.43
CaO	trace
Na ₂ O	0.33
K ₂ O	8.03
H ₂ O ⁺	5.13
Total	99.58

(1) Stuckslager mine, California, USA.

Polymorphism & Series: Forms a series with muscovite; 1M polytype.

Mineral Group: Mica group.

Occurrence: An early-stage gangue mineral in low-temperature epithermal Au-Ag-Te deposits; from the oxidized portions of low-temperature sedimentary U-V ores.

Association: Quartz, pyrite, carbonates, fluorite, gold (Au-Ag-Te mineral association); corvusite, hewettite, carnotite, tyuyamunite (U-V mineral association).

Distribution: In the USA, from the Stuckslager mine, Lotus, El Dorado Co., California; in Colorado, from Cripple Creek, Teller Co., La Plata district, La Plata Co., Magnolia district, Boulder Co., the Gateway district, Mesa Co., in the Uravan and Paradox, Bull Canyon, and Slick Rock districts, in Montrose, San Miguel, and Dolores Cos. From the Spotted Horse mine, Maiden, Fergus Co., Montana; the Baker, Mammoth, and North Pole mines, Baker Co., Oregon; in the Monument No. 2 mine, Apache Co., and Monument No. 1 and Mitten No. 2 mines, Navajo Co., Arizona; from the Goldstrike mine, Lynn district, Eureka Co., Nevada. At the Yamato mine, Amamiyoshima Island, Kagoshima Prefecture, Japan. From Kalgoorlie, Western Australia and Radium Hill, Olary, South Australia. In the Emperor mine, Vatukoula, Viti Levu, Fiji Islands. At Horní Kalná, Czech Republic. From the Mounana mine, Gabon.

Name: For British scientist Henry Enfield Roscoe (1833–1915), of Manchester, England, who first prepared pure vanadium.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 635.

(2) Deer, W.A., R.A. Howie, and J. Zussman (1963) Rock-forming minerals, v. 3, sheet silicates, 11–30. (3) Wells, R.C. and W.W. Brannock (1946) The composition of roscoelite. U.S. Geol. Sur. Bull. 950, 121–127. (4) Heinrich, E.W. and A.A. Levinson (1955) Studies in the mica group; X-ray data on roscoelite and barium-muscovite. Amer. J. Sci., 253, 39–43. (5) Kurtz, J.P. and P.L. Hauff (1988) Roscoelite in Colorado telluride ores. In: Modreski, P.J., Ed., Mineralogy of precious metal deposits. Friends of Mineralogy, Golden, Colorado.

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