

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Crystals are typically prismatic and striated along [001], to 15 cm; also tabular to bladed, flattened on {100}; show {010}, {110}, {100}, {310}, {112}, {001}, {102}, {011}, and a multiplicity of other forms; in radiating groups or in parallel. *Twinning:* Common as simple contact twins with composition plane {100}, or rarely {001}; as interpenetrant twins; lamellar.

**Physical Properties:** *Cleavage:* Perfect on {010}; partings on {100} and {102}. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 4–4.5, directional. D(meas.) = 7.12–7.18 D(calc.) = 7.234

**Optical Properties:** Transparent to translucent. *Color:* Yellowish brown to reddish brown, blackish brown, black, rarely red; white to gray in reflected light with deep blood-red internal reflections. *Streak:* Yellow to reddish brown, greenish gray. *Luster:* Metallic-adamantine towards resinous.

*Optical Class:* Biaxial (+). *Pleochroism:* Perceptible; X = yellow to green, red-orange; Y = yellowish brown to greenish yellow, red-orange to red; Z = green; brick-red to red. *Orientation:* X = b; Z ∧ c = 17°–21°. *Absorption:* Z > Y > X. α = 2.17–2.20 β = 2.22 γ = 2.30–2.32 2V(meas.) = Large. 2V(calc.) = 73(5)° *Anisotropism:* Distinct. R<sub>1</sub>–R<sub>2</sub>: (400) 17.1–19.8, (420) 16.3–19.3, (440) 15.5–18.8, (460) 15.1–18.3, (480) 14.6–17.5, (500) 14.4–17.2, (520) 14.2–17.0, (540) 13.9–16.7, (560) 13.8–16.5, (580) 13.7–16.3, (600) 13.6–16.2, (620) 13.5–16.1, (640) 13.5–16.0, (660) 13.4–15.9, (680) 13.4–15.8, (700) 13.3–15.7

**Cell Data:** *Space Group:* P2/c. a = 4.8238(7) b = 5.7504(10) c = 4.9901(8) β = 91.18(1)° Z = 2

**X-ray Powder Pattern:** Synthetic.

2.996 (100), 2.954 (95), 4.84 (65), 3.78 (60), 3.70 (55), 2.497 (55), 2.880 (30)

<b>Chemistry:</b>	(1)	(2)		(1)	(2)
SiO <sub>2</sub>	0.62		MnO	23.40	23.43
WO <sub>3</sub>	75.58	76.57	CaO	0.13	
(Nb, Ta) <sub>2</sub> O <sub>5</sub>	0.05		Total	100.02	100.00
FeO	0.24				

(1) Uncompahgre district, Colorado, USA. (2) MnWO<sub>4</sub>.

**Polymorphism & Series:** Forms a series with ferberite.

**Occurrence:** Typical of high-temperature hydrothermal vein deposits and pneumatolytically altered granites yielding greisen; in granite pegmatites; also in alluvial and eluvial deposits.

**Association:** Cassiterite, arsenopyrite, molybdenite, tourmaline, topaz, rhodochrosite, fluorite.

**Distribution:** May be an ore of tungsten at some localities. In the USA, from the Erie and Enterprize veins, Ellsworth (Mammoth) district, Nye Co., Nevada; at numerous deposits in Colorado, as the Adams mine, Bonita Mountain, near Silverton, and from Gladstone, San Juan Co., in the Sweet Home mine, Alma district, Park Co., and large crystals from the Quartz Creek district, Gunnison Co.; in the Blue Wing district, Lemhi Co., Idaho; large crystals from the Little Dragoon Mountains, Cochise Co., Arizona; in the Nogal and White Oaks districts, Lincoln Co., New Mexico. In Peru, superb large crystals from the Huallapón mine, Pasto Bueno, Ancash Province. From Wheal Gorland, Gwennap, and in the Hingston Down quarry, Cornwall, England. At Baia Sprie (Felsőbánya), Romania. From Horní Slavkov (Schlaggenwald), Czech Republic. In France, at Valcroze, Lozère, and Adervielle, Hautes-Pyrénées. At the Duoluoshan mine, Huaiji County, Guangdong Province, China.

**Name:** Honors Adolph Hübner, metallurgist of Freiberg, Germany.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1064–1072. (2) Weitzel, H. (1976) Kristallstrukturverfeinerung von Wolframiten und Columbiten. Zeits. Krist., 144, 238–258 (in German with English abs.). (3) (1963) NBS Mono. 25, 2, 24.

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