

Crystal Data: Monoclinic. *Point Group:* 2/m. As wedge-shaped crystals, typically flattened {100} and elongated along [010] or, less commonly, along [001], to 15 cm; faces striated || [001] or [010]; in groups of bladed crystals; massive. *Twinning:* Contact twins with composition plane {100} or {023}, or more rarely {001}; also interpenetrant or lamellar.

Physical Properties: *Cleavage:* {010}, perfect; {100} and {102}, partings. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 4–4.5 D(meas.) = 7.58 D(calc.) = 7.60 Slightly magnetic.

Optical Properties: Nearly to entirely opaque. *Color:* Black; dark brown in transmitted light. *Streak:* Brownish black to black. *Luster:* Submetallic to metallic adamantine. *Optical Class:* Biaxial (+). α = n.d. β = ~2.40 γ = n.d. 2V(meas.) = 66° *Anisotropism:* Distinct. *Birefractance:* Weak.

R₁–R₂: (400) 16.5–19.5, (420) 16.4–19.2, (440) 16.3–18.9, (460) 16.2–18.7, (480) 15.9–18.5, (500) 16.0–18.7, (520) 16.0–18.7, (540) 16.0–18.7, (560) 16.0–18.7, (580) 15.8–18.6, (600) 15.8–18.6, (620) 15.7–18.6, (640) 15.6–18.5, (660) 15.5–18.3, (680) 15.4–18.1, (700) 15.5–18.0

Cell Data: *Space Group:* P2/c. $a = 4.72$ $b = 5.70$ $c = 4.96$ $\beta = 90^\circ$ $Z = 2$

X-ray Powder Pattern: Tirpersdorf, near Oelsnitz, Saxony, Germany. 2.940 (10), 4.69 (8), 3.75 (6), 2.476 (6), 2.470 (6), 3.65 (5), 2.195 (5)

Chemistry:	(1)	(2)
WO ₃	75.21	76.34
FeO	24.37	23.66
MnO	0.19	
Total	99.77	100.00

(1) Kurasawa, Yamanashi Prefecture, Japan. (2) FeWO₄.

Polymorphism & Series: Forms a series with hübnerite.

Occurrence: In high-temperature hydrothermal veins, greisens, and granitic pegmatites; also residual in alluvial and eluvial deposits.

Association: Scheelite, topaz, fluorite, marcasite, pyrite, hematite, feldspar.

Distribution: Numerous minor localities; material approaching end-member composition is uncommon. From near Aquilas, Sierra de Almagrera, Almería Province, Spain. At Panasqueira, Portugal. From around Calstock and elsewhere in Cornwall, England. Large crystals at Pechtelsgrün and Zinnwald, Saxony, Germany. From Chanteloube, near Limoges, Haute-Vienne, France. In the USA, an ore mineral, well-crystallized, from a number of mines in the Boulder Co. tungsten district, Colorado; on Corral Creek, near Soldier Mountain, Camas Co., Idaho; in the Elizabethtown district, Colfax Co., New Mexico; at the Monarch tungsten mine, Ubehebe district, Inyo Co., California. From Mundo Nuovo and Junin, Peru. In the Quechisla district and elsewhere in Potosí, Bolivia. Large crystals from Kirwa, Kigezi, Uganda. At Gejui, Hunan Province, China. At the Tae wha mine, Chungju, North Chungchong Province, South Korea.

Name: Honors Moritz Rudolph Ferber (1805–1875), amateur mineralogist, Gera, Germany.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1064–1072. (2) Cid-Dresdner, H. and C. Escobar (1968) The crystal structure of ferberite, FeWO₄. Zeits. Krist., 127, 61–72. (3) Ülkü, D. (1967) Untersuchungen zur Kristallstruktur und magnetischen Struktur des Ferberits FeWO₄. Zeits. Krist., 124, 192–219 (in German with English abs.).