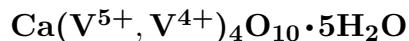


Melanovanadite



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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Prismatic crystals, to 2 mm, striated and elongated along [001], with prominent but rounded prism zone, complexly terminated; in radiating aggregates and rosettes, velvety.

Physical Properties: *Cleavage:* Perfect on {010}. *Tenacity:* Brittle. Hardness = 2.5
D(meas.) = 2.55 D(calc.) = 2.53

Optical Properties: Opaque, translucent in very thin flakes. *Color:* Black; dark reddish brown in transmitted light. *Streak:* Dark reddish brown. *Luster:* Submetallic.
Optical Class: Biaxial (-). *Pleochroism:* Distinct; X = light reddish brown; Y = Z = dark reddish brown. *Orientation:* Z = b; Y \wedge c = 15°. $\alpha = 1.73$ $\beta = 1.96$ $\gamma = 1.98$
2V(meas.) = Medium.

Cell Data: *Space Group:* $P\bar{1}$. a = 6.360(2) b = 18.090(9) c = 6.276(2) $\alpha = 110.18(4)^\circ$
 $\beta = 101.62(3)^\circ$ $\gamma = 82.86(4)^\circ$ Z = [2]

X-ray Powder Pattern: Minasragra, Peru.
8.40 (100), 4.208 (55), 2.974 (50), 2.473 (50), 3.109 (45), 4.120 (40), 3.182 (40)

Chemistry: Composition established by crystal-structure analysis; the mineral contains interlayer H₂O, easily displaced.

Occurrence: In altered black shale in a very rich vanadium deposit (Minasragra, Peru); in Colorado Plateau-type U–V deposits.

Association: Pascoite, pyrite, copper, gypsum, patrónite, sherwoodite (Minasragra, Peru); duttonite (Peanut mine, Colorado, USA).

Distribution: At Minasragra, 46 km from Cerro de Pasco, Peru. In the USA, in the Mesa No. 1, Mesa No. 5, and Kerr-McGee 4-1 mines, Lukachukai Mountains, Apache Co., Arizona; the Jackpile mine, Valencia Co., New Mexico; the Jo Dandy, Bitter Creek, and Peanut mines, Uruavan district, Montrose Co., and the Garfield mines, Garfield Co., Colorado; and the Juniper mine, Thompsons district, Grand Co., Utah.

Name: From the Greek for *black*, for the color, and VANADIUM in the composition.

Type Material: Harvard University, Cambridge, Massachusetts, 90452; American Museum of Natural History, New York City, New York, 19310; National Museum of Natural History, Washington, D.C., USA, 138067, 160076.

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