

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Rarely in platy to pyramidal crystals, to 1 mm; as globular aggregates and coatings. *Twinning:* May exhibit multiple twinning on {101}, composition plane {010}, giving reticulated groups.

**Physical Properties:** *Cleavage:* On {010}, perfect. Hardness = Very soft. D(meas.) = n.d. D(calc.) = 6.949

**Optical Properties:** Transparent in thin flakes. *Color:* Yellow, pale orange, yellow-orange, deep reddish orange. *Luster:* Earthy to subvitreous. *Optical Class:* Biaxial.  $n = [2.63]$

**Cell Data:** *Space Group:* I2/a (synthetic).  $a = 5.195$   $b = 11.701$   $c = 5.092$   $\beta = 90.38^\circ$   
Z = 4

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

3.095 (100), 3.082 (95), 3.120 (30), 4.749 (25), 4.670 (25), 2.924(25), 1.717 (18)

**Chemistry:**

	(1)	(2)	(3)
V <sub>2</sub> O <sub>5</sub>	27.63	27.0	28.07
Bi <sub>2</sub> O <sub>3</sub>	69.88	72.0	71.93
PbO	1.34		
CaO		0.9	
Total	98.85	99.9	100.00

(1) Yinnietharra Station, Western Australia. (2) White Queen mine, California, USA; by electron microprobe, corresponding to Bi<sub>1.01</sub>V<sub>0.97</sub>O<sub>4</sub>. (3) BiVO<sub>4</sub>.

**Polymorphism & Series:** Trimorphous with dreyerite and pucherite.

**Occurrence:** An accessory mineral in pegmatites, as an oxidization product of other bismuth minerals.

**Association:** Pucherite, bismite, bismutite, bismuth, vanadinite, beyerite, namibite, scheelite.

**Distribution:** In Western Australia, from five km south of Pyramid Hill, Yinnietharra Station; in the Londonderry quarry, 19 km south of Coolgardie; at Menzies; from Wodgina; on the Champion lease, Westonia; from about three km north-northwest of Corinthia; and east-southeast of Try Again Bore, Yandil Station; from South Australia, at Lively's Find gold mine, Arkaroola. From Mutala, Mozambique. At the Rubicon pegmatite, south of Karibib, and from near Khorixas, Namibia. In the USA, in the Jensen quarry, Riverside Co.; at the Lodi #4 mine, Spring Creek district, Plumas Co., and from the White Queen and Elizabeth "R" mines, Pala, San Diego Co., California; near the Comstock mine, Dos Cabezas Mountains, Cochise Co., Arizona; from the Linka mine, Spencer Hot Springs district, Lander Co., about 30 km northwest of Potts, Nevada. At the La Juana mine, Córdoba Province, Argentina. In China, from near Koktokay [Kyokfogoi], Xinjiang Uygur Autonomous Region. In an undisclosed gold deposit, Ural Mountains, Russia. At Reichenbach, near Bensheim, Hesse, Germany.

**Name:** For the mineral's *monoclinic* crystal system, and BiSmuth and VANadium in its composition.

**Type Material:** Western Australian Museum, Perth, Australia, MDC5144; National Museum of Natural History, Washington, D.C., USA, 127456.

**References:** (1) Bridge, P.J. and M.W. Pryce (1974) Clinobisvanite, monoclinic BiVO<sub>4</sub>, a new mineral from Yinnietharra, Western Australia. *Mineral. Mag.*, 39, 847–849. (2) Foord, E.E. (1995) Clinobisvanite, eulytite, and namibite from the Pala pegmatite district, San Diego Co., California, USA. *Mineral. Mag.*, 60, 387–388. (3) von Knorring, O., T.G. Sahama, M. Lehtinen, P. Rehtijärvi, and J. Siivola (1973) Natural bismuth vanadate from the Mutala pegmatite area, Mozambique. *Contr. Mineral. Petrol.*, 41, 325–331. (4) (1964) *NBS Mono.* 25, 3, 14.

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