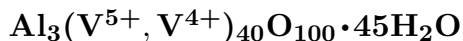


Bariandite



©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* m or $2/m$. Crystals elongated \parallel $[010]$, forming fibers, platy on $\{001\}$, to 3 mm; in sheeted aggregates of parallel fibers, such layers sometimes stacked.

Physical Properties: *Cleavage:* $\{001\}$, perfect. Hardness = n.d. $D(\text{meas.}) = \sim 2.7$
 $D(\text{calc.}) = 2.50$

Optical Properties: Nearly opaque. *Color:* Black to dark green; in reflected light shows green internal reflections.

Optical Class: Biaxial. *Pleochroism:* Greenish brown \parallel $[010]$, bottle-green \perp $[010]$ in transmitted light; strong in brownish gray under reflected light. $n = > 1.85$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* Cc or $C2/c$. $a = 11.70(3)$ $b = 3.63(1)$ $c = 20.06(5)$
 $\beta = 101^\circ 30(20)'$ $Z = 2$

X-ray Powder Pattern: Mounana mine, Gabon.

14.20 (FFF), 3.480 (F), 3.430 (F), 5.72 (mF), 2.852 (mF), 1.939 (mF), 1.827 (mF)

Chemistry:

| | |
|-------------------------|---------|
| | (1) |
| V_2O_5 | 63.26 |
| V_2O_4 | 14.19 |
| Al_2O_3 | 3.75 |
| Fe_2O_3 | 0.17 |
| H_2O | 18.11 |
| Total | [99.48] |

(1) Mounana mine, Gabon; original total given as 100.08%; corresponds to $\text{Al}_{0.68}[(\text{V}^{5+}, \text{V}^{4+})_{7.90}\text{Fe}_{0.02}^{3+}]_{\Sigma=7.92}\text{O}_{20} \cdot 9.14\text{H}_2\text{O}$.

Occurrence: In the oxidation zone of a uranium mineral deposit (Mounana mine, Gabon); in the oxidation zone of a vanadium deposit (Minasragra, Peru).

Association: Duttonite, lenoblite (Mounana mine, Gabon); roscoelite, gypsum (Minasragra, Peru).

Distribution: From the Mounana uranium mine, Franceville, Gabon. At Minasragra, 46 km from Cerro de Pasco, Peru.

Name: To honor Dr. Pierre Bariand (1933–), Curator of Mineralogy, University of Paris, Paris, France.

Type Material: National School of Mines, Paris, France; The Natural History Museum, London, England, 1970,151.

References: (1) Cesbron, F. and H. Vachey (1971) La bariandite, nouvel oxyde hydraté de vanadium (IV) et (V). *Bull. Soc. fr. Minéral.*, 94, 49–54 (in French with English abs.). (2) (1972) *Amer. Mineral.*, 57, 1555 (abs. ref. 1). (3) Evans, H.T., Jr. and J.M. Hughes (1990) Crystal chemistry of the natural vanadium bronzes. *Amer. Mineral.*, 75, 508–521, esp. 515, 517.