

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. Compact massive, columnar.

Physical Properties: *Cleavage:* $\{001\}$, perfect] (by analogy to bismoclite). *Tenacity:* [Very plastic.] *Hardness* = [2–2.5] *D*(meas.) = 6.4–6.5 *D*(calc.) = [7.70]

Optical Properties: Opaque. *Color:* Pale yellow.
Optical Class: Uniaxial (-). $\omega = 1.91(1)$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $P4/nmm$. $a = 3.85(1)$ $c = 7.40(2)$ $Z = 2$

X-ray Powder Pattern: Tazna, Bolivia.

2.66 (s), 1.672 (s), 2.72 (ms), 1.562 (ms), 7.35 (m), 1.259 (m), 3.70 (w)

| Chemistry: | (1) | (2) |
|--------------------------------|-------|--------|
| Fe ₂ O ₃ | 0.72 | |
| Bi ₂ O ₃ | 89.60 | 92.74 |
| Cl | 7.50 | 7.06 |
| H ₂ O | 3.84 | 1.79 |
| -O = Cl ₂ | 1.69 | 1.59 |
| Total | 99.97 | 100.00 |

(1) Tazna, Bolivia. (2) BiO(OH, Cl) with OH:Cl = 1:1.

Occurrence: A secondary mineral formed by alteration of bismuth or bismuthinite, intermixed with “clay” (Tazna, Bolivia).

Association: Kaolinite (?).

Distribution: From the Constancia mine, Tazna, Bolivia.

Name: For Gabriel Auguste Daubrée (1814–1896), French mineralogist and geologist.

Type Material: National Museum of Natural History, Paris, France, 94.247.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana’s system of mineralogy, (7th edition), v. II, 60–62. (2) Bannister, F.A. (1935) The crystal-structure of the bismuth oxyhalides. *Mineral. Mag.*, 24, 49–58.