

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Crystals, to 7 mm, are dominated by {100}, {111}, {011}, with {113}, {114}, {112}, {116}, and {029}.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle to sectile. Hardness = 3
D(meas.) = 6.274(8) D(calc.) = 6.26

Optical Properties: Transparent. *Color:* Colorless, becoming pale lavender on exposure to light. *Streak:* White. *Luster:* Adamantine, dull after exposure to light.
Optical Class: Isotropic. *Dispersion:* Low. $n = 2.192(15)$

Cell Data: *Space Group:* $Fd3m$. $a = 14.1273(6)$ $Z = 16$

X-ray Powder Pattern: Tiger, Arizona, USA.

2.718 (10), 3.530 (9), 2.497 (9), 4.259 (7), 4.076 (7), 3.240 (7), 1.839 (6)

Chemistry:

	(1)
Ag	15.74
Pb	62.66
F	3.26
Cl	14.74
OH	[2.78]
Total	[99.18]

(1) Tiger, Arizona, USA; average of two analyses, Ag and Pb by AA, $(\text{OH})^{1-}$ calculated from charge balance; corresponds to $\text{Pb}_{2.02}\text{Ag}_{0.97}\text{Cl}_{2.77}\text{F}_{1.14}(\text{OH})_{1.09}$.

Occurrence: Rarely enclosing and replacing boleite, with other oxidized Pb and Cl minerals, from an oxidized base-metal mineral deposit (Tiger, Arizona, USA).

Association: Boleite, diaboite, matlockite, leadhillite, anglesite, cerussite, diopside, covellite, quartz (Tiger, Arizona, USA); boleite, atacamite (Iquique, Chile).

Distribution: From the Mammoth-St. Anthony mine, Tiger, Pinal Co., Arizona, USA. In Chile, at a prospect about 20 km east of Iquique, Tarapacá.

Name: For Richard August Bideaux (1935–), of Oro Valley, Arizona, USA, American mineralogist and mineral collector.

Type Material: National Museum of Natural History, Washington, D.C., USA, 114583.

References: (1) Williams, S.A. (1970) Bideauxite, a new Arizona mineral. *Mineral. Mag.*, 37, 637–640. (2) (1971) *Amer. Mineral.*, 56, 634–635 (abs. ref. 1). (3) Cooper, M.A., F.C. Hawthorne, S. Merlino, M. Pasero, and N. Perchiazzi (1999) Stereoactive lone-pair behavior of Pb in the crystal structure of bideauxite: $\text{Pb}_2^{2+}\text{Ag}^+\text{Cl}_3\text{F}(\text{OH})$. *Can. Mineral.*, 37, 915–921.