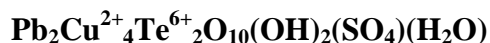


Bairdite

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals are diamond-shaped and tabular on {100} to 250 μm , in subparallel to fanlike aggregates.

Physical Properties: *Cleavage:* Perfect on {100}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = 2-3 D(meas.) = n.d. D(calc.) = 6.062

Optical Properties: Transparent. *Color:* Lime-green. *Streak:* Pale lime-green. *Luster:* Adamantine.

Optical Class: Biaxial (+). $\alpha(\text{calc.}) = 1.953$ $\beta(\text{calc.}) = 1.966$ $\gamma(\text{calc.}) = 2.039$
 $2V(\text{meas.}) = 47(2)^\circ$ *Dispersion:* strong, $r < v$. *Orientation:* $Y = b$; $Z \wedge a = 34^\circ$ (in obtuse β).
Pleochroism: strong, $Z = \text{pale green} \lll X = \text{green} < Y = \text{green}$. *Absorption:* $Z \lll X < Y$.

Cell Data: *Space Group:* $P2_1/c$. $a = 14.3126(10)$ $b = 5.2267(3)$ $c = 9.4878(5)$ $\beta = 106.815(7)^\circ$
 $Z = 2$

X-ray Powder Pattern: Bird Nest drift, Otto Mountain, San Bernardino County, California, USA. 2.614 (100), 2.999 (97), 1.509 (83), 2.701 (79), 4.522 (66), 1.727 (65), 3.48 (62)

Chemistry:	(1)	(2)
PbO	34.22	36.24
CaO	0.06	
CuO	23.80	25.83
TeO ₃	26.34	28.51
SO ₃	5.74	6.50
H ₂ O	[2.81]	2.92
Total	92.97	100.00

(1) Bird Nest drift, Otto Mountain, San Bernardino County, California, USA; average of 4 electron microprobe analyses, supplemented by Raman and IR spectroscopy, H₂O calculated from structure; corresponds to $\text{Pb}_{2.05}\text{Ca}_{0.01}\text{Cu}^{2+}_{3.99}\text{Te}^{6+}_{2.00}\text{S}_{0.96}\text{O}_{17.00}\text{H}_{4.16}$. (2) $\text{Pb}_2\text{Cu}^{2+}_4\text{Te}^{6+}_2\text{O}_{10}(\text{OH})_2(\text{SO}_4)(\text{H}_2\text{O})$.

Occurrence: A secondary mineral in vugs in quartz formed from the partial oxidation of primary sulfides and tellurides during or following the brecciation of quartz veins.

Association: Khinite, cerussite, goethite, hematite.

Distribution: From the Bird Nest drift, SW flank of Otto Mountain, near Baker, San Bernardino County, California, USA.

Name: Honors Jerry A. Baird (b. 1940) of Lake Havasu City, Arizona, USA. Baird, a mineral collector for 45 years, has collected extensively at Otto Mountain and has provided numerous samples for research.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (64000 and 64001).

References: (1) Kampf, A.R., S.J. Mills, R.M. Housley, G.R. Rossman, J. Marty, and B. Thorne (2013) Lead-tellurium oxysalts from Otto Mountain near Baker, California: X. Bairdite, $\text{Pb}_2\text{Cu}^{2+}_4\text{Te}^{6+}_2\text{O}_{10}(\text{OH})_2(\text{SO}_4)(\text{H}_2\text{O})$, a new mineral with thick HCP layers. *Amer. Mineral.*, 98, 1315-1321.