

Crystal Data: Monoclinic. *Point Group:* 2/m. As pseudotetragonal tapering to stout prisms to 0.2 mm displaying {100} and {011}, and as botryoidal intergrowths to 0.3 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Tenacity:* Brittle. *Fracture:* Irregular. Hardness = 3 D(meas.) = n.d. D(calc.) = 8.496

Optical Properties: Transparent. *Color:* Orange. *Streak:* Pale orange. *Luster:* Adamantine. *Optical Class:* Biaxial (+). $a(\text{calc.}) = 2.11$ $\beta(\text{calc.}) = 2.12$ $\gamma(\text{calc.}) = 2.29$ $2V(\text{meas.}) = 30(5)^\circ$ *Orientation:* $X = c, Y = b, Z = a$. *Pleochroism:* Slight, shades of orange. *Absorption:* $X > Y = Z$.

Cell Data: *Space Group:* P2₁/c. $a = 5.722(2)$ $b = 7.7478(2)$ $c = 7.889(2)$ $\beta = 90.833(5)^\circ$ $Z = 2$

X-ray Powder Pattern: Otto Mountain, San Bernardino County, California, USA. 3.235 (100), 2.873 (40), 2.985 (37), 2.774 (30), 3.501 (29), 2.220 (23), 1.990 (21)

Chemistry:	(1)	(2)
PbO	50.07	49.16
TeO ₃	22.64	19.34
UO ₃	25.01	31.50
Cl	0.03	
- O = Cl	0.01	
Total	97.74	100.00

(1) Otto Mountain, San Bernardino County, California, USA; average of 5 electron microprobe analyses; corresponds to Pb_{2.05}U_{0.80}Te⁶⁺_{1.18}O_{7.99}Cl_{0.01}. (2) Pb₂(UO₂)TeO₆.

Occurrence: A secondary phase on fracture surfaces and in small vugs in quartz veins. Formed from the partial oxidation of primary sulfides (e.g., galena) and tellurides (e.g., hessite) during or following brecciation of the quartz veins.

Association: Bromian chlorargyrite, iodargyrite, khinite-4O, wulfenite, housleyite, thorneite, ottoite, timroseite.

Distribution: From the Aga mine and the Bird Nest drift, southwest flank of Otto Mountain, ~2 km northwest of Baker, San Bernardino County, California, USA.

Name: Honors Mark A. Cooper (b. 1963), University of Manitoba, for his contributions to mineralogy. He has been involved in the description of many new minerals (~35), and the determination of the crystal structures of many minerals containing uranium and tellurium.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (62510, 62511, and 62512).

References: (1) Kampf, A.R., S.J. Mills, R.M. Housley, J. Marty, and B. Thorne (2010) Lead-tellurium oxysalts from Otto Mountain near Baker, California: IV. Markcooperite, Pb(UO₂)Te⁶⁺O₆, the first natural uranyl tellurate. *Amer. Mineral.*, 95, 1554-1559.