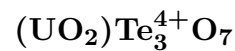


Cliffordite



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Crystal Data: Cubic. *Point Group:* $2/m\bar{3}$. As octahedra, to 0.2 mm, in crusts.

Physical Properties: Hardness = 4 $D(\text{meas.}) = 6.57$ (synthetic). $D(\text{calc.}) = 6.77$
Radioactive.

Optical Properties: Semitransparent. *Color:* Bright sulfur-yellow. *Luster:* Adamantine.
Optical Class: Isotropic. $n = 2.25(2)$ (synthetic).

Cell Data: *Space Group:* $Pa\bar{3}$. $a = 11.37\text{--}11.47$ $Z = 8$

X-ray Powder Pattern: San Miguel prospect, Mexico.
3.273 (10), 2.844 (8), 2.007 (8), 2.755 (7), 1.712 (7), 4.63 (6), 4.02 (6)

Chemistry:	(1)	(2)
U	24.	31.12
Te	54.	50.05
O		18.83
Total		100.00

(1) San Miguel prospect, Mexico; by electron microprobe. (2) $(\text{UO}_2)\text{Te}_3\text{O}_7$.

Occurrence: As rare incrustations along fractures in the oxidized zone of hydrothermal Au–Ag telluride deposits.

Association: Mackayite, barite, quartz, “limonite” (San Miguel prospect, Mexico); tellurium, paratellurite, quartz (Moctezuma mine, Mexico).

Distribution: From the San Miguel prospect, and 10 km southeast at the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico.

Name: Honors Professor Clifford Frondel (1907–2002), Harvard University, Cambridge, Massachusetts, USA, for his contributions to uranium mineralogy.

Type Material: Natural History Museum, Paris, France, 175.83, 180.61; Harvard University, Cambridge, Massachusetts, 119079; National Museum of Natural History, Washington, D.C., USA, 120246, 164341, 164342.

References: (1) Gaines, R.V. (1969) Cliffordite - a new tellurite mineral from Moctezuma, Sonora, Mexico. *Amer. Mineral.*, 54, 697–701. (2) Brandstaetter, F. (1981) Non-stoichiometric, hydrothermally synthesized cliffordite. *Tschermaks Mineral. Petrog. Mitt.*, 29, 1–8.