Mosesite $Hg_2N(Cl, SO_4, MoO_4, CO_3)\cdot H_2O$

Crystal Data: Cubic. *Point Group:* $\overline{4}3m$. Crystals pseudo-octahedra, less commonly dodecahedra, cubo-octahedra, cubes, rarely isolated, to 2 mm, several other forms have been noted; typically in nearly spherical aggregates of crystals. *Twinning:* On {111}, common, may be repeated.

Physical Properties: *Cleavage:* {111}, imperfect. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 3.5 D(meas.) = 7.72 D(calc.) = 7.53

Optical Properties: Semitransparent. *Color:* Lemon-yellow, canary-yellow, sulfur-yellow, becoming light olive-green on long exposure to light; amber-orange to nearly black, rarely zoned. *Streak:* Very pale yellow. *Luster:* Adamantine.
Optical Class: Isotropic; may be weakly anisotropic. $n = 2.065(10)$

Cell Data: *Space Group:* $F\overline{4}3m$. a = 9.524 Z = 8

X-ray Powder Pattern: Huahuaxtla, Mexico.
2.74 (10), 2.86 (8), 1.68 (7), 1.44 (7), 2.18 (6), 1.61 (6), 2.38 (5)

Chemistry:

	(1)	(2)
Hg^{2+}	79.4	85.60
Hg^{1+}	3.6	
Cl	3.3	7.57
H_2O	3.2	3.84
CO_3	0.8	
SO_4	5.4	
MoO_4	2.0	
N	2.4	2.99
Total	100.1	100.00

(1) Huahuaxtla, Mexico; H_2O by the Penfield method; corresponds to $Hg_{2.20}N_{0.93}(Cl, SO_4, MoO_4, CO_3)_{0.93}\cdot 0.95H_2O$. (2) $Hg_2NCl\cdot H_2O$.

Occurrence: A rare secondary mineral formed at low temperature in hydrothermal mercury deposits.

Association: Calcite, cinnabar, metacinnabar, mercury, eglestonite, kleinite, terlinguaite, montroydite, calomel, gypsum.

Distribution: In the USA, from Terlingua, Brewster Co., Texas; in the T.S. Clack Quicksilver mine, about 37 km northeast of Lovelock, Fitting district, Mineral Co., and the McDermitt mine, Humboldt Co., Nevada; from near the Clear Creek mercury mine, New Idria district, San Benito Co., California. In Mexico, at Huahuaxtla, Guerrero, and El Doktor, Querétaro.

Name: Honors Alfred J. Moses (1859–1920), American mineralogist, Professor of Mineralogy, Columbia University, New York City, New York, USA, who described several other mercury minerals from Terlingua.

Type Material: National Museum of Natural History, Washington, D.C., USA, C87, 93292.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 89–90. (2) Switzer, G., K.J. Murata, and J.J. Fahey (1953) Re-examination of mosesite. Amer. Mineral., 38, 1225–1234.