

Crystal Data: Hexagonal or triclinic. *Point Group:* $6/m\ 2/m\ 2/m$. Crystals short prismatic to equant, to 3 mm, showing prominent $\{10\bar{1}0\}$, $\{20\bar{2}1\}$, and $\{0001\}$.

Physical Properties: *Cleavage:* $\{0001\}$, uneven; $\{10\bar{1}0\}$, imperfect. *Tenacity:* Brittle. Hardness = 3.5–4 D(meas.) = 7.9–8.0 D(calc.) = [7.87]

Optical Properties: Transparent to translucent. *Color:* Pale yellow, canary-yellow to orange, may be zoned, yellow cores with reddish orange rims; tenebrescent, deepening in color in daylight, the original color restored in darkness; yellow to colorless in transmitted light.

Streak: Sulfur-yellow. *Luster:* Adamantine to greasy.

Optical Class: Biaxial (–); uniaxial (+) $\geq 130\text{ }^\circ\text{C}$; isotropic $\geq \sim 190\text{ }^\circ\text{C}$. *Dispersion:* $r < v$, very strong. $\omega = 2.19$ $\epsilon = 2.21$ $\alpha = 2.16$ $\beta = 2.18$ $\gamma = 2.18$ $2V(\text{meas.}) = \text{Small to } 80^\circ$.

Cell Data: *Space Group:* $C6/mmc$. $a = 13.56$ $c = 11.13$ $Z = [18]$

X-ray Powder Pattern: Terlingua, Texas, USA.

2.914 (10), 2.615 (10), 3.884 (6), 2.013 (6), 1.434 (4), 1.242 (4), 5.228 (2)

Chemistry:	(1)
	Hg 85.86
	N 2.57
	Cl 7.30
	H ₂ O 1.03
	SO ₄ 3.10
	<hr/> Total 99.86

(1) Terlingua, Texas, USA; averages of numerous partial analyses, corresponds to $\text{Hg}_{2.00}\text{N}_{0.86}[\text{Cl}_{0.96}(\text{SO}_4)_{0.15}]_{\Sigma=1.11} \cdot 0.53\text{H}_2\text{O}$.

Occurrence: In hydrothermal mercury deposits.

Association: Terlinguaite, gypsum, barite, calcite, other mercury minerals (Terlingua, Texas, USA); mosessite, calomel, montroydite (McDermitt mine, Nevada, USA).

Distribution: In the USA, from Terlingua, Brewster Co., Texas; the New Idria district, San Benito Co., California; and in the McDermitt and Cordero mercury mines, Opalite district, Humboldt Co., Nevada.

Name: To honor Carl Klein (1842–1907), Professor of Mineralogy, University of Berlin, Berlin, Germany.

Type Material: Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Washington, D.C., USA, 86639–86641, 86647.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 87–89. (2) Bird, P.H. (1932) A new occurrence and X-ray study of mosessite. *Amer. Mineral.*, 17, 541–553. (3) Heritsch, H. (1949) I. Röntgenuntersuchungen an Kleinite. *Tschermaks Mineral. Petrog. Mitt.*, 1, 300–312 (in German). (4) Foord, E.E. and B.A. Mills (1978) Biaxiality in 'isometric' and 'dimetric' crystals. *Amer. Mineral.*, 63, 316–325.