

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ ,  $m$ , or  $2$ . As sheaves of ill-formed platy crystals, with dominant  $\{100\}$ , to  $200\ \mu\text{m}$ . Also as cryptocrystalline nodular masses, which may be hollow. *Twinning:* Polysynthetic on  $\{100\}$ .

**Physical Properties:** *Fracture:* Irregular to subconchoidal. *Tenacity:* Brittle. Hardness = 4 VHN = 153–217, 192 average (100 g load).  $D(\text{meas.}) = 9.4(3)$   $D(\text{calc.}) = 9.11$ . Photosensitive, darkening on exposure to UV, IR, X-rays, and visible light.

**Optical Properties:** Translucent. *Color:* Lemon-yellow to orange-yellow when fresh; dark olive-green, through lighter yellowish green, to dark green-brown on exposed surface; in reflected light, gray to slightly lighter gray, with pale lemon-yellow internal reflections; lemon-yellow in transmitted light. *Streak:* Pale yellowish green. *Luster:* Vitreous, resinous when nodular. *Optical Class:* Biaxial. *Pleochroism:* Weak. *Absorption:* Strong.  $\alpha = [2.10]$   $\beta = \text{n.d.}$   $\gamma = [2.58]$   $2V(\text{meas.}) = \text{n.d.}$

R: (400) 16.7, (420) 17.1, (440) 17.0, (460) 16.4, (480) 15.8, (500) 15.3, (520) 14.9, (540) 14.6, (560) 14.3, (580) 14.2, (600) 14.0, (620) 14.0, (640) 13.8, (660) 13.8, (680) 13.7, (700) 13.6

**Cell Data:** *Space Group:*  $C2/m$ ,  $Cm$ , or  $C2$ .  $a = 11.755(3)$   $b = 7.678(2)$   $c = 5.991(2)$   $\beta = 111.73(3)^\circ$   $Z = 2$

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

3.160 (100), 2.715 (63), 1.872 (36), 2.952 (34), 3.027 (27), 2.321 (24), 6.28 (20)

**Chemistry:**

	(1)	(2)	(3)
$\text{SiO}_2$	8.6	7.9	8.76
$\text{Hg}_2\text{O}$	89.6	91.0	91.24
Total	98.2	[98.9]	100.00

(1) Socrates mine, California, USA; by electron microprobe, average of five analyses.

(2) Terlingua, Texas, USA; by electron microprobe, average of three analyses, originally given as Si 3.7%, Hg 87.5%, here recalculated to oxides. (3)  $\text{Hg}_6\text{Si}_2\text{O}_7$ .

**Occurrence:** A secondary mineral, probably resulting from reaction between mercury and quartz under unknown conditions.

**Association:** Mercury, cinnabar, montroydite, terlinguaite, eglestonite, calcite, quartz, barite.

**Distribution:** In the Socrates mercury mine, Sonoma Co., and near the Clear Creek mercury mine, New Idria district, San Benito Co., California; at Terlingua, Brewster Co., Texas, USA. From the San Luis mine, Huahuaxtla, Guerrero, Mexico.

**Name:** For Dr. Edgar Herbert Bailey (1914–1983), distinguished geologist and mercury specialist with the U.S. Geological Survey.

**Type Material:** Canadian Museum of Nature, Ottawa, Canada, 65531; The Natural History Museum, London, England, 1906,190.

**References:** (1) Roberts, A.C., M. Bonardi, R.C. Erd, A.J. Criddle, C.J. Stanley, G. Cressey, R.J. Angel, and J.H.G. Laflamme (1990) Edgarbaileyite, the first known silicate of mercury, from California and Texas. *Mineral. Record*, 21, 215–220. (2) (1990) *Amer. Mineral.*, 75, 1431–1432 (abs. ref. 1). (3) Angel, R.J., G. Cressey, and A. Criddle (1990) Edgarbaileyite,  $\text{Hg}_6\text{Si}_2\text{O}_7$ : the crystal structure of the first mercury silicate. *Amer. Mineral.*, 75, 1192–1196.