Miersite $(Ag, Cu)I$

Crystal Data: Cubic. *Point Group:* $\overline{4}3m$. As tetrahedra, (+) and (–) forms of which may be balanced to give pseudo-octahedra, or, with the cube, to give pseudocubo-octahedra, to 1 mm; cube faces striated ‖ tetrahedral faces. In crystalline crusts and aggregates. *Twinning:* On {111}, may be repeated.

Physical Properties: *Cleavage:* {011}, perfect. *Fracture:* Conchoidal. *Tenacity:* Somewhat brittle. Hardness = 2.5 D(meas.) = 5.64 D(calc.) = 5.67

Optical Properties: Transparent. *Color:* Canary-yellow; in transmitted light, pale yellow. *Streak:* Canary-yellow. *Luster:* Adamantine.
Optical Class: Isotropic; slight anomalous anisotropism. $n = 2.20(2)$

Cell Data: *Space Group:* $F\overline{4}3m$. a = 6.504 Z = 4

X-ray Powder Pattern: Locality not stated [Broken Hill, Australia].
3.23 (s), 2.28 (m), 1.948 (m), 3.72 (w), 1.489 (vw), 1.320 (vw), 1.290 (vw)

Chemistry:

	(1)	(2)
Ag	38.17	45.95
Cu	5.64	
I	56.58	54.05
Total	100.39	100.00

(1) Broken Hill, Australia. (2) AgI.

Occurrence: A rare mineral in the oxidized zone of some Pb–Zn–Cu–Ag deposits, especially in arid regions.

Association: Iodargyrite, chlorargyrite, malachite, cerussite, cuprite (Broken Hill, Australia); gerhardtite, likasite (Likasi, Congo).

Distribution: From Broken Hill, New South Wales, Australia. In the USA, at the Contention mine and Joe shaft, Tombstone; in the Southwest mine, Bisbee, Cochise Co.; and from the Mildren and Steppe claim, South Comobabi Mountains, Pima Co., Arizona. In the Likasi mine, Katanga Province, Congo (Shaba Province, Zaire).

Name: Honors Henry Alexander Miers (1858–1942), Professor of Mineralogy, Oxford University, Oxford, England.

Type Material: Natural History Museum, Paris, France, 112.405; The Natural History Museum, London, England, 83822.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 19–20. (2) Barclay, C.J. and J.B. Jones (1971) The Broken Hill silver halides. J. Geol. Soc. Austr., 18, 149–157. (3) Waldo, A.W. (1935) Identification of the copper ore minerals by means of X-ray powder diffraction patterns. Amer. Mineral., 20, 575–597, esp. 585.