

Crystal Data: Cubic. *Point Group:* $\bar{4}3m$. As tetrahedra, rounded and striated by {100}, {113}, and {223}, flattened, to 5 mm; in crusts. *Twinning:* On {111}, may be repeated.

Physical Properties: *Cleavage:* {011}, perfect. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 2.5 D(meas.) = 5.59–5.68 D(calc.) = 5.60 Fluoresces dark red under SW UV.

Optical Properties: Transparent. *Color:* Colorless, pale honey-yellow, turning salmon-red to brick-red on exposure to air; colorless in transmitted light. *Streak:* Bright to pale yellow. *Luster:* Adamantine.

Optical Class: Isotropic; may be anomalously anisotropic. $n = 2.346$ (Na).

Cell Data: *Space Group:* $F\bar{4}3m$ (synthetic). $a = 6.0337(3)$ $Z = 4$

X-ray Powder Pattern: Synthetic.

3.493 (100), 2.139 (55), 1.824 (30), 3.025 (12), 1.3881 (12), 1.2351 (10), 1.5127 (8)

Chemistry:

	(1)	(2)	(3)
Ag	1.19		
Cu	32.35	33.01	33.37
Cl		0.33	
I	65.85	66.67	66.63
Total	99.39	100.01	100.00

(1) Broken Hill, Australia. (2) Chuquicamata, Chile. (3) CuI.

Occurrence: A rare mineral in the oxidized zone of a metamorphosed Pb–Zn–Ag deposit (Broken Hill, Australia); in the oxidized zone of a porphyry copper deposit (Chuquicamata, Chile); in tills over a copper anomaly, introduced by brackish seawater (Löytösuo, Finland).

Association: Copper, cuprite, cerussite, malachite, Fe–Mn oxides (Broken Hill, Australia); copper, atacamite, tenorite, gypsum (Chuquicamata, Chile).

Distribution: In Australia, from Broken Hill, New South Wales, and in the Poona mine, 5 km northeast of Moonta, South Australia. At Chuquicamata, Antofagasta, Chile. In the Löytösuo area, Ylikiiminki, Finland.

Name: For Charles W. Marsh, who first noted the mineral at Broken Hill, Australia.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 20–22. (2) Barclay, C.J. and J.B. Jones (1971) The Broken Hill silver halides. *J. Geol. Soc. Austr.*, 18, 149–157. (3) Yude, Y., H. Boysen, and H. Schulz (1990) Neutron powder investigation of CuI. *Zeits. Krist.*, 191, 79–91. (4) (1955) NBS Circ. 539, 4, 38–39.