

Boothite

CuSO₄•7H₂O

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Crystal Data: Monoclinic. *Point Group:* n.d. Crystals very rare, complex, typically fibrous or crystalline massive.

Physical Properties: *Cleavage:* {001}, imperfect. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 2–2.5 D(meas.) = 1.94 D(calc.) = n.d. Soluble in H₂O; dehydrates to chalcantite.

Optical Properties: Transparent to translucent. *Color:* Blue; pale blue in transmitted light. *Luster:* Vitreous, silky or pearly if fibrous. *Optical Class:* Biaxial (–) or (+). *Orientation:* $Y = b$; $X \simeq c$. $\alpha = 1.47$ $\beta = 1.48$ $\gamma = 1.49$ 2V(meas.) = Large.

Cell Data: *Space Group:* n.d. Z = n.d.

X-ray Powder Pattern: n.d.

Chemistry:	(1)	(2)
SO ₃	28.65	28.02
FeO	0.28	
CuO	28.53	27.84
MgO	trace	
H ₂ O	43.76	44.14
Total	101.22	100.00

(1) Alma mine, California, USA. (2) CuSO₄•7H₂O.

Mineral Group: Melanterite group.

Occurrence: An alteration product of chalcopyrite (Alma mine, California, USA).

Association: Chalcantite, melanterite, pisanite (Alma mine, California, USA).

Distribution: In the USA, at the Alma pyrite mine, near Leona Heights, Alameda Co., and from the Penn (Campo Seco) mine, Calaveras Co., California; at the Colusa mine, Butte, Silver Bow Co., Montana. At Sain-Bel, near Lyon, Rhône, France. From the Galaktos district, 15 km southeast of Veria, Greece. At the Tolbachik fissure volcano, Kamchatka Peninsula, Russia.

Name: To honor Professor Edward Booth (1857–1917), American chemist, University of California, Berkeley, California, USA.

Type Material: n.d.

References: (1) Dana, E.S. and W.E. Ford (1909) Dana's system of mineralogy, (6th edition), app. II, 18. (2) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 504–505.