

**Crystal Data:** Tetragonal. *Point Group:*  $\bar{4}2m$ . Typically as inclusions in other sulfides, to 0.3 mm. *Twinning:* Polysynthetic.

**Physical Properties:** Hardness = n.d. VHN = 259–274 (25 g load). D(meas.) = n.d. D(calc.) = [4.78]

**Optical Properties:** Opaque. *Color:* In polished section, gray with a slight bluish tint.

*Luster:* Metallic. *Anisotropism:* Very weak.

$R_1$ – $R_2$ : (400) 25.8–25.0, (420) 25.3–24.8, (440) 24.5–24.5, (460) 23.8–23.9, (480) 23.2–23.4, (500) 22.7–22.9, (520) 22.3–22.6, (540) 22.1–22.4, (560) 21.9–22.3, (580) 21.8–22.2, (600) 21.8–22.2, (620) 21.8–22.2, (640) 21.7–22.2, (660) 21.8–22.2, (680) 21.9–22.3, (700) 22.1–22.5

**Cell Data:** *Space Group:*  $I\bar{4}2d$  (by analogy to chalcopyrite group).  $a = 5.51$   $c = 11.05$   
Z = 4

**X-ray Powder Pattern:** Charrier, France.

3.19 (vvs), 1.95 (vs), 1.66 (s), 2.76 (mw), 1.268 (vw), 1.127 (vww), 3.08 (f)

**Chemistry:**

	(1)	(2)	(3)
Cu	26.8	28.4	26.20
Fe		0.6	
In	47.8	45.9	47.35
S	27.3	26.2	26.45
Total	101.9	101.1	100.00

(1) Charrier, France; by electron microprobe, corresponds to Cu<sub>0.99</sub>In<sub>0.98</sub>S<sub>2.00</sub>. (2) Geevor mine, England; by electron microprobe, corresponds to Cu<sub>1.09</sub>Fe<sub>0.03</sub>In<sub>0.98</sub>S<sub>2.00</sub>. (3) CuInS<sub>2</sub>.

**Mineral Group:** Chalcopyrite group.

**Occurrence:** In association with copper sulfides in high-temperature Sn–W–Bi–Mo hydrothermal veins in highly metamorphosed rocks (Charrier, France); a late-stage mineral in a skarn Fe–W ore pipe (Ulsan mine, South Korea); in magnetite-bearing massive chalcopyrite ore (Akenobe mine, Japan).

**Association:** Chalcopyrite, bornite, cubanite, covellite, sphalerite, tetrahedrite, emplectite, wittichenite, stannoidite, pyrite, löllingite, arsenopyrite, bismuth, cassiterite, ferberite, magnetite.

**Distribution:** In France, from Charrier, Allier [TL]; in Lautaret Pass, Hautes-Alpes; at La Telhaie, Morbihan; and from Vaultry, Haute-Vienne. In the Geevor mine, St. Just, Cornwall, England. At Listulli, Telemark, and Långban, Värmland, Sweden. From the Radka deposit, Pazardzhik, Bulgaria. At Cínovec (Zinnwald), Czech Republic From Syrymbet, Kazakhstan. In the Akenobe and Ikuno mines, Hyogo Prefecture, Japan. In the Ulsan mine, Kyongsang Province, South Korea. At the Tosham tin prospect, Bhiwani district, Haryana, India. In Canada, from Mount Pleasant, New Brunswick. At the Sure Fire mine, Pyramid district, Washoe Co., Nevada, USA. Found in the Mangabeira tin deposit, Goiás, Brazil. Additional localities are now known.

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**Type Material:** National School of Mines, Paris, France; The Natural History Museum, London, England, 1965,302.

**References:** (1) Picot, P. and R. Pierrot (1963) La roquésite, premier minéral d'indium: CuInS<sub>2</sub>. Bull. Soc. fr. Minéral., 86, 7–14 (in French). (2) (1963) Amer. Mineral., 48, 1178–1179 (abs. ref. 1). (3) Imai, N. and S. Choi (1984) The first Korean occurrence of roquesite. Mineral. J. (Japan), 12, 162–172. (4) Vlasov, K.A., Ed. (1966) Mineralogy of rare elements, v. II, 585–586. (5) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 484.

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