

# Chaméanite



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**Crystal Data:** Cubic. *Point Group:* Undetermined, but with a body-centered lattice. Most commonly anhedral granular, to 30  $\mu\text{m}$ , but also intermixed with giraudite in a microscopic myrmekitic texture.

**Physical Properties:** Hardness = n.d. VHN = 247–292 (25 g load). D(meas.) = n.d. D(calc.) = 6.17

**Optical Properties:** Opaque. *Color:* Dark gray in reflected light. *Luster:* Metallic. R: (400) 27.4, (420) 27.1, (440) 26.8, (460) 26.5, (480) 26.1, (500) 26.6, (520) 26.9, (540) 27.1, (560) 27.3, (580) 27.5, (600) 27.7, (620) 27.8, (640) 28.0, (660) 28.2, (680) 28.4, (700) 28.7

**Cell Data:** *Space Group:* n.d.  $a = 11.039(4)$   $Z = 8$

**X-ray Powder Pattern:** Chaméane mine, France. 3.187 (100), 1.951 (90), 1.665 (80), 1.127 (70), 1.266 (60), 1.062 (50), 1.381 (40)

| Chemistry: | (1)   | (2)   |
|------------|-------|-------|
| Cu         | 33.93 | 36.38 |
| Fe         | 5.63  | 2.58  |
| As         | 11.05 | 11.98 |
| Sb         | 0.48  | 0.34  |
| Se         | 47.06 | 46.99 |
| S          | 1.59  | 1.56  |
| Total      | 99.74 | 99.83 |

(1) Chaméane mine, France; by electron microprobe; corresponds to  $(\text{Cu}_{3.36}\text{Fe}_{0.63})_{\Sigma=3.99}(\text{As}_{0.93}\text{Sb}_{0.02})_{\Sigma=0.95}(\text{Se}_{3.75}\text{S}_{0.31})_{\Sigma=4.06}$ . (2) Do.; by electron microprobe, corresponds to  $(\text{Cu}_{3.62}\text{Fe}_{0.29})_{\Sigma=3.91}(\text{As}_{1.01}\text{Sb}_{0.02})_{\Sigma=1.03}(\text{Se}_{3.76}\text{S}_{0.31})_{\Sigma=4.07}$ .

**Occurrence:** As late-stage deposits in veins cutting granite (Chaméane mine, France); in a telethermal selenium-rich hydrothermal polymetallic deposit, in calcite veins in amphibolites (Tuminico, Argentina).

**Association:** Giraudite, eskebornite, geffroyite, ankerite (Chaméane mine, France); hakite, bukovite, cadmoselite, umangite (Tuminico, Argentina).

**Distribution:** From the Chaméane uranium mine, near Vernet-la-Varenne, Puy-de-Dôme, France [TL]. At Tuminico, Sierra de Cacho, La Rioja Province, Argentina.

**Name:** For the occurrence at the Chaméane mine, France.

**Type Material:** National School of Mines, Paris, France.

**References:** (1) Johan, Z., P. Picot, and F. Ruhlmann (1982) Evolution paragenétique de la minéralisation uranifère de Chaméane (Puy-de-Dôme) France: chaméanite, geffroyite et giraudite, trois séléniures nouveaux de Cu, Fe, Ag, and As. *Tschermaks Mineral. Petrog. Mitt.*, 29, 151–167 (in French with English abs.). (2) (1982) *Amer. Mineral.*, 67, 1074–1075 (abs. ref. 1).