

Capgaronnite

HgS•Ag(Cl, Br, I)

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As single crystals, elongated along [001] and flattened on {010}, showing {010}, {100}, {110}, and {h0l}, to 1 mm; in tufted aggregates. *Twinning:* On {h0l}, as contact twins.

Physical Properties: *Cleavage:* {010}, perfect. *Fracture:* Irregular. *Tenacity:* Sectile. Hardness = Soft. D(meas.) = n.d. D(calc.) = 6.19

Optical Properties: Translucent to opaque. *Color:* Black. *Streak:* Gray-black. *Luster:* Subadamantine to submetallic. *Optical Class:* Biaxial (–) (probable). *Pleochroism:* X = dark brown; Z = gray to purple. *Orientation:* X = c; Y = b; Z = a. $\alpha = \sim 2.2$ $\beta = \text{n.d.}$ $\gamma = \sim 2.3$ 2V(meas.) = n.d.

Cell Data: *Space Group:* $P2_12_12$. $a = 6.803(8)$ $b = 12.87(1)$ $c = 4.528(7)$ $Z = 4$

X-ray Powder Pattern: Cap Garonne mine, France.
2.664 (100), 3.762 (60), 3.637 (60), 6.43 (40), 2.265 (40), 3.283 (30), 2.047 (20)

Chemistry:	(1)
	Ag 23.99
	Hg 53.92
	S 7.96
	Cl 10.58
	Br 5.17
	I 0.33
	Total 101.95

(1) Cap Garonne mine, France; by electron microprobe, average of five analyses; corresponds to $\text{Hg}_{0.98}\text{Ag}_{0.80}\text{S}_{0.90}(\text{Cl}_{1.08}\text{Br}_{0.23}\text{I}_{0.01})_{\Sigma=1.32}$.

Occurrence: Probably formed from oxidation of Hg–Ag-rich tennantite exposed to seawater (Cap Garonne mine, France).

Association: Olivenite, cyanotrichite, brochantite, parnaute, tennantite, strüverite, tourmaline, perroudite.

Distribution: In the Cap Garonne mine, near le Pradet, Var, France. At Chañarcillo, south of Copiapó, Atacama, Chile. From the Broken Hill Proprietary mine, New South Wales, Australia.

Name: For the occurrence in the Cap Garonne mine, France.

Type Material: n.d.

References: (1) Mason, B., W.G. Mumme, and H. Sarp (1992) Capgaronnite, $\text{HgS}\cdot\text{Ag}(\text{Cl}, \text{Br}, \text{I})$, a new sulfide-halide mineral from Var, France. *Amer. Mineral.*, 77, 197–200. (2) Mason, B. (1972) Tocornalite [capgaronnite]. *Smithsonian Contribution to Earth Science*, 9, 79–80.