Capgaronnite $HgS \cdot Ag(Cl, Br, I)$

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 {*h*0*l*}, to 1 mm; in tufted aggregates. *Twinning:* On {*h*0*l*}, 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:* $X = c$; $Y = b$; $Z = a$. $\alpha = \sim 2.2$ β = 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 $Hg_{0.98}Ag_{0.80}S_{0.90}(Cl_{1.08}Br_{0.23}I_{0.01})_{\Sigma=1.32}$.

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

Association: Olivenite, cyanotrichite, brochantite, parnauite, 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, $HgS \cdot Ag(Cl, Br, I)$, 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.