

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . As crystals, thin tabular on {010}, with {111} and  $\{\bar{1}11\}$ , and cleavages, to 5 cm; also as crusts. *Twinning:* Commonly as penetration or contact twins on {100}.

**Physical Properties:** *Cleavage:* Perfect micaceous cleavage on {010}. *Fracture:* Splintery. *Tenacity:* Very flexible; deforms plastically. Hardness = 2.5 D(meas.) = 4.14–4.15 D(calc.) = 4.186

**Optical Properties:** Transparent. *Color:* Colorless to white; colorless in transmitted light. *Luster:* Vitreous; pearly on cleavage surfaces. *Optical Class:* Biaxial (+). *Orientation:*  $Y = b$ ;  $X \wedge c \simeq 84^\circ$ ;  $Z \wedge c \simeq 6^\circ$ . *Dispersion:*  $r < v$ , strong.  $\alpha = 1.871(5)$   $\beta = 1.92(2)$   $\gamma = 2.01(1)$   $2V(\text{meas.}) = 58^\circ$

**Cell Data:** *Space Group:*  $P2_1/n$  (synthetic).  $a = 5.25(1)$   $b = 12.99(1)$   $c = 4.53(1)$   $\beta = 93^\circ 53'(20)'$   $Z = 4$

**X-ray Powder Pattern:** San Domingo mines, Portugal. 3.245 (100), 3.454 (50), 2.771 (35), 4.924 (25), 2.264 (25), 3.356 (20), 3.328 (18)

Chemistry:	(1)	(2)
As	75.99	75.74
O	[23.84]	24.26
insol.	0.17	
Total	[100.00]	100.00

(1) Smolník, Slovakia; average of two analyses, O by difference. (2) As<sub>2</sub>O<sub>3</sub>.

**Polymorphism & Series:** Dimorphous with arsenolite.

**Occurrence:** A secondary oxidation product derived from realgar, arsenopyrite, or other arsenic-bearing minerals. Also produced as a sublimate during mine fires.

**Association:** Arsenolite, realgar, orpiment, sulfur.

**Distribution:** From the San Domingo mines, Algarve, Portugal. At Calañas, Andalusia; large cleavages from Rio Tinto, Huelva, Spain. In the Lasalle mine, Decazeville, Aveyron, France. From Smolník (Szomolnok), 16 km northeast of Rožňava, Slovakia, as a sublimation product. At Trebsko, Czech Republic. In Germany, found at St. Andreasberg, Harz Mountains. At Tsumeb, Namibia. In the USA, at the United Verde mine, Jerome, Yavapai Co., Arizona, and in the Tintic Standard mine, near Dividend, East Tintic district, Utah Co., Utah, both from mine fires; and in a sulfur prospect about 10 km north of the 4 S Ranch, Imperial Co., California.

**Name:** Honors Frederick Claudet, the French chemist who first described naturally occurring material.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 545–547. (2) Pertlik, F. (1978) Verfeinerung der Kristallstruktur des Minerals Claudetit, As<sub>2</sub>O<sub>3</sub>. ("Claudetit I"). Montash. Chem., 109, 277–282 (in German with English abs.). (3) (1978) Chem. Abs., 88, 201473 (abs. ref. 2). (4) Treacy, D.J. and P.C. Taylor (1981) Nuclear quadrupole resonance in two crystalline forms of As<sub>2</sub>O<sub>3</sub>, arsenolite and claudetite I. Solid State Communications, 40(2), 135–138. (5) (1964) NBS Mono. 25, 3, 9.