

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Crystals dipyramidal on {111}, thick tabular and disphenoidal, to 20 cm; also massive, reniform, and forming stalactites; as a powder. *Twinning:* On {101}, {011}, {110}, rare.

Physical Properties: *Cleavage:* Imperfect on {001}, {110}, {111}; parting on {111}. *Fracture:* Conchoidal to uneven. *Tenacity:* Rather brittle to somewhat sectile. Hardness = 1.5–2.5 VHN = n.d. $D(\text{meas.}) = 2.07$ $D(\text{calc.}) = 2.076$

Optical Properties: Transparent to translucent. *Color:* Sulfur-yellow to honey-yellow, yellowish brown, greenish, reddish or yellowish gray; may be black from included organic matter. *Streak:* White. *Luster:* Resinous to greasy.

Optical Class: Biaxial positive (+). *Pleochroism:* Distinct. *Orientation:* $X = a$; $Y = b$; $Z = c$. *Dispersion:* $r < v$. $\alpha = 1.9579$ (Na). $\beta = 2.0377$ (Na). $\gamma = 2.2452$ (Na). $2V(\text{meas.}) = 68^\circ 58'$ $2V(\text{calc.}) = \text{n.d.}$

R_1 – R_2 : n.d.

Cell Data: *Space Group:* $Fddd$. $a = 10.468$ $b = 12.870$ $c = 24.49$ $Z = 128$

X-ray Powder Pattern: Synthetic.

3.90 (100), 3.24 (60), 5.75 (50), 7.76 (40), 3.48 (40), 3.12 (40), 2.12 (40)

Chemistry: Sulfur, sometimes with Se and Te.

Polymorphism & Series: Dimorphous with rosickýite.

Occurrence: A sublimation product at volcanic fumaroles; a product of the activity of biological micro-organisms; as a result of low oxidation potential and highly acidic chemical reactions in mineral deposits; formed by the decomposition of sulfides, especially pyrite, during mine fires; found in sedimentary rocks.

Association: Gypsum, anhydrite, halite, aragonite, calcite, celestine.

Distribution: In the USA, large deposits occur in salt domes, as in Louisiana, especially in the area of Lake Charles, Chalcasieu Parish, and in Texas near Freeport, Brazoria Co. At Sulfur Mountain, in Yellowstone Park, Wyoming. In California, at the Sulfur Bank mercury mine, on Clear Creek, Lake Co. Crystals from quarries at Maybee and Scofield, Monroe Co., Michigan. On Sicily, at Cianciana, Agrigento, and Racalmuto, the source of exceptionally large and fine crystals; from many other places in Italy, notably at Solfatara di Pozzuoli, near Naples; at Perticara, near Rimini, Marche; and at Carrara, Tuscany. Large crystals from Spain, at Conil, near Cádiz, Cádiz Province. In Baja California, Mexico, at San Felipe. Numerous other localities are known, the occurrence often inconspicuous.

Name: From the Latin *sulfur*.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 140–144. (2) (1960) NBS Circ. 539, 9, 54.