Sénarmontite Sb_2O_3

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. Commonly as octahedra, to 3 cm, which may be modified by the cube or dodecahedron; in crusts, granular massive.

Physical Properties: *Cleavage:* {111}, interrupted. *Fracture:* Uneven. *Tenacity:* Brittle. Hardness = 2–2.5 D(meas.) = 5.50 D(calc.) = 5.584

Optical Properties: Transparent to translucent. *Color:* Colorless, grayish white; colorless in transmitted light. *Streak:* White. *Luster:* Resinous to subadamantine.
Optical Class: Isotropic; strong anomalous anisotropism, zoned or sectored. $n = 2.087$

Cell Data: *Space Group:* $Fd3m$ (synthetic). $a = 11.1519(2)$ $Z = 16$

X-ray Powder Pattern: Synthetic.
3.218 (100), 1.972 (42), 2.788 (40), 1.681 (35), 6.44 (12), 1.279 (12), 2.559 (11)

Chemistry: Modern analyses are unavailable.

Polymorphism & Series: Dimorphous with valentinite.

Occurrence: Formed by oxidation of antimony, stibnite, and other antimony minerals in hydrothermal antimony-bearing deposits.

Association: Valentinite, kermesite, stibiconite, cetineite, mopungite, sulfur.

Distribution: In large crystals at Sensa (Haminate mine), Aïn-el-Bebbouch, Qacentina (Constantine), Algeria. From the Globe and Phoenix mine, Kwekwe (Que Que), Zimbabwe. At Pernek, near Pezinok, and Dubrava, Slovakia. From Arnsberg, Westphalia, and St. Ulrich, Black Forest, Germany. At Anzat-le-Luguet, Puy-de-Dôme, France. In several mines around St. Endellion and elsewhere in Cornwall, England. From the Cetine mine, 20 km southwest of Siena, Tuscany, Italy. In Canada, from the Lac Nicolet mine, South Ham, Quebec; at Red Lake, Ontario; and in Lake George antimony deposit, 40 km west of Fredricton, New Brunswick. In the Green prospect, Mopung Hills, Churchill Co., Nevada, USA. A few other localities are known.

Name: To honor Henri Hureau de Sénarmont (1808–1862), French physicist and mineralogist, School of Mines, Paris, France, who first noted the species.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 544–545. (2) Svensson, C. (1975) Refinement of the crystal structure of cubic antimony trioxide, Sb_2O_3. Acta Cryst., 31, 2016–2018. (3) (1954) NBS Circ. 539, 3, 31.