## Stibarsen SbAs



**Crystal Data:** Hexagonal. *Point Group:* $\overline{3}\,2/m$. As indistinct crystals; more commonly reniform or mammillary, to 3 cm; also curved lamellar, fine granular. Typically graphically intergrown with arsenic or antimony in exsolution texture.

**Physical Properties:** *Cleavage:* Perfect in one direction. Hardness = 3–4 VHN = n.d. D(meas.) = 5.8–6.2 D(calc.) = 6.44

**Optical Properties:** Opaque. *Color:* Tin-white or reddish gray, tarnishes gray. *Streak:* Gray. *Luster:* Metallic, may be splendent, but not uncommonly dull.
$R_1$–$R_2$: (400) 64.8–67.8, (420) 65.0–68.0, (440) 65.2–68.2, (460) 64.8–67.9, (480) 64.0–67.2, (500) 63.0–66.8, (520) 62.3–66.6, (540) 61.6–66.3, (560) 61.2–66.0, (580) 60.8–65.9, (600) 60.5–65.8, (620) 60.3–65.7, (640) 60.1–65.8, (660) 60.0–66.2, (680) 59.8–66.3, (700) 59.6–66.4

**Cell Data:** *Space Group:* $R\overline{3}m$. $a = 4.0255(11)$ $c = 10.837(9)$ $Z = 3$

**X-ray Powder Pattern:** Varuträsk, Sweden. (ICDD 31-80).
2.92 (100), 2.01 (70), 2.13 (60), 1.661 (40), 1.282 (40), 3.60 (30), 1.467 (20)

**Chemistry:**

| | (1) | (2) |
|---|---|---|
| Sb | 61.5 | 61.90 |
| As | 35.0 | 38.10 |
| Bi | 0.02 | |
| Fe | 0.85 | |
| S | 0.20 | |
| insol. | 2.20 | |
| Total | 99.77 | 100.00 |

(1) Varuträsk, Sweden. (2) SbAs.

**Mineral Group:** Arsenic group.

**Occurrence:** Most commonly in hydrothermal veins, but also in pegmatites.

**Association:** Arsenic, arsenolite, antimony, kermesite, stibnite, stibiconite, cervantite, sphalerite, siderite, calcite, quartz.

**Distribution:** From the Varuträsk pegmatite, 15 km northwest of Skellefteå, Västerbotten, Sweden [TL]. At Marienberg, Saxony, and from St. Andreasberg, Harz Mountains, Germany. In France, in the Chalanches mine, near Allemont, Isère. At Cavnic (Kapnikbánya) and Baia Mare (Nagybánya), Romania. In the Czech Republic, from Příbram. At Hüttenberg, Carinthia, Austria. From Valtellina, Italy. In the USA, in the Ophir mine, Comstock Lode, Virginia City, Storey Co., Nevada. In Canada, at Atlin, Alder Island, and in the Engineer mine, Tagish Lake, British Columbia; from Bernic Lake, Manitoba. At the Moctezuma (Bambolla) mine, 12 km south of Moctezuma, Sonora, Mexico. From Broken Hill, New South Wales, Australia. A few additional localities are known.

**Name:** For the composition, intermediate between antimony, STIBium, and ARSENic.

**References:** (1) Wretblad, P.E. (1941) Minerals of the Varuträsk pegmatite, XX. Die allemontite und das system As–Sb. Geol. Fören. Förhandl. Stockholm, 63, 19–48 (in German). (2) (1941) Amer. Mineral., 26, 456 (abs. ref. 1). (3) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 130–132 ("allemontite", part). (4) Bayliss, P. (1991) Crystal chemistry and crystallography of some minerals in the tetradymite group, Amer. Mineral., 76, 257–265.