

# Svabite

# Ca<sub>5</sub>(AsO<sub>4</sub>)<sub>3</sub>(F, OH)

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**Crystal Data:** Hexagonal. *Point Group:* 6/*m*. As stout prismatic hexagonal crystals, typically modified by several bipyramids, to 5 mm; massive.

**Physical Properties:** *Cleavage:* Indistinct on {10 $\bar{1}$ 0}. *Tenacity:* Brittle. Hardness = 4–5 D(meas.) = 3.5–3.8 D(calc.) = 3.67 Fluoresces reddish orange under LW UV and yellow under SW UV.

**Optical Properties:** Transparent to translucent. *Color:* Colorless, yellowish white, gray, grayish green; colorless to pale lilac in transmitted light. *Luster:* Vitreous to subresinous.

*Optical Class:* Uniaxial (-).  $\omega = 1.706$   $\epsilon = 1.698$

**Cell Data:** *Space Group:* P6<sub>3</sub>/*m*.  $a = 9.75$   $c = 6.92$   $Z = 2$

**X-ray Powder Pattern:** Långban, Sweden.

2.87 (10), 2.79 (9), 1.860 (6), 3.44 (5), 3.94 (4), 2.65 (4), 1.981 (4)

<b>Chemistry:</b>	(1)	(2)		(1)	(2)
SO <sub>3</sub>	0.69		CaO	42.07	44.14
P <sub>2</sub> O <sub>5</sub>	0.38		Na <sub>2</sub> O	0.56	
As <sub>2</sub> O <sub>5</sub>	51.05	54.28	K <sub>2</sub> O	0.30	
FeO	0.08		F	1.99	1.50
MnO	0.26		Cl	0.12	
PbO	3.02		H <sub>2</sub> O	0.25	0.71
MgO	0.52		-O = (F, Cl) <sub>2</sub>	0.87	0.63
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			Total	100.42	100.00

(1) Jakobsberg, Sweden. (2) Ca<sub>5</sub>(AsO<sub>4</sub>)<sub>3</sub>(F, OH) with F:OH = 1:1.

**Mineral Group:** Apatite group.

**Occurrence:** A rare accessory mineral in calcsilicate skarns.

**Association:** Manganoan diopside, brandtite, sarkinite, garnet (Harstigen mine, Sweden); hausmannite (Jakobsberg, Sweden); manganoan diopside, tilasite, manganberzeliite, bergslagite, hematite, calcite, barite (Långban, Sweden).

**Distribution:** In Sweden, found in the Harstigen mine, near Persberg, at Jakobsberg, and at Långban, Värmland; from Kesebol, Dalsland; in the Ultevis district, Jokkmokk, Swedish Lappland. In the Clara Mine, near Oberwolfach, Black Forest, Germany.

**Name:** Honors Anton Svab (1703–1768), Swedish mining official.

**Type Material:** Harvard University, Cambridge, Massachusetts, USA, 113494.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 899–900. (2) Welin, E. (1968) X-ray powder data for minerals from Långban and the related mineral deposits of Central Sweden. Arkiv Mineral. Geol., 4(30), 499–541, esp. 536.