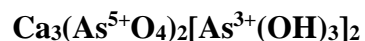


**Segerstromite**

**Crystal Data:** Cubic. *Point Group:* 23. As tetrahedra, dodecahedra to 0.50 mm, or in blocky aggregates.

**Physical Properties:** *Cleavage:* None. *Fracture:* n.d. *Tenacity:* Brittle.  
Hardness = ~4.5 D(meas.) = 3.44(3) D(calc.) = 3.46

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous.  
*Optical Class:* Isotropic.  $n = 1.731(5)$

**Cell Data:** Space Group:  $I 2_13$ .  $a = 10.7627(2)$   $Z = 4$

**X-ray Powder Pattern:** Cobriza mine, Sacramento district, Copiapó Province, Chile.  
2.875 (100), 3.389 (82), 2.111 (45), 4.351 (34), 1.748 (34), 3.104 (33), 1.905 (27)

<b>Chemistry:</b>	(1)	(2)
CaO	25.57	25.88
As <sub>2</sub> O <sub>3</sub>	[30.38]	30.44
As <sub>2</sub> O <sub>5</sub>	[35.20]	35.36
H <sub>2</sub> O	[8.29]	8.32
Total	99.53	100.00

(1) Cobriza mine, Sacramento district, Copiapó Province, Chile; average of 16 electron microprobe analyses supplemented by Raman spectroscopy, H<sub>2</sub>O calculated from structure and As<sup>3+</sup>/As<sup>5+</sup> apportioned from structure and total As<sub>2</sub>O<sub>3</sub> = 60.75; corresponds to Ca<sub>2.98</sub>(AsO<sub>4</sub>)<sub>2.00</sub>[As(OH)<sub>3</sub>]<sub>2.00</sub>.

(2) Ca<sub>3</sub>(As<sup>5+</sup>O<sub>4</sub>)<sub>2</sub>[As<sup>3+</sup>(OH)<sub>3</sub>]<sub>2</sub>.

**Occurrence:** A secondary mineral in a Pb-Ag-As-Cu-Zn deposit hosted in sedimentary and volcanic rocks.

**Association:** Talmessite, vladimirite, Sr-bearing hydroxylapatite.

**Distribution:** From the Cobriza mine, Sacramento district, Copiapó Province, Atacama Region, Chile.

**Name:** Honors Kenneth Segerstrom (1909-1992), geologist for the U.S. Geological Survey in the U.S., Mexico, and Chile, conducting field-based regional geologic studies. Segerstrom worked in Chile in conjunction with the "Instituto de Investigaciones Geológicas" (now Sernageomin), from 1957-1963, mainly in the Atacama Region, including the Sacramento district and the Cobriza mine.

**Type Material:** University of Arizona Mineral Museum (19800) and the RRUFF Project (R130753), Tucson, Arizona, USA.

**References:** (1) Yang, H., R.T. Downs, R.A. Jenkins, and S.H. Evans (2018) Segerstromite, Ca<sub>3</sub>(As<sup>5+</sup>O<sub>4</sub>)<sub>2</sub>[As<sup>3+</sup>(OH)<sub>3</sub>]<sub>2</sub>, the first mineral containing As<sup>3+</sup>(OH)<sub>3</sub>, the arsenite molecule, from the Cobriza mine in the Atacama Region, Chile. *Amer. Mineral.*, 103(9), 1497-1501.