

**Crystal Data:** Orthorhombic. *Point Group:* n.d. In skeletal pseudododecahedral crystals, commonly elongated in the direction of a pseudocubic or pseudo-octahedral edge, to 3 cm; also massive and in intergrowths with acanthite or naumannite.

**Physical Properties:** *Fracture:* Hackly. *Tenacity:* Sectile. Hardness = 2.5  
VHN = 20.5–23.8, 22.7 average (25 g load). D(meas.) = 7.40–7.53 D(calc.) = [7.65]

**Optical Properties:** Opaque. *Color:* Bright lead-gray on fresh surfaces; dull iron-black on exposed surfaces. *Luster:* Metallic. *Anisotropism:* Very weak or isotropic.

R<sub>1</sub>–R<sub>2</sub>: (400) 34.8–35.1, (420) 34.7–35.2, (440) 34.6–35.2, (460) 34.7–35.3, (480) 34.8–35.3, (500) 34.8–35.4, (520) 34.6–35.6, (540) 34.1–35.5, (560) 33.5–35.2, (580) 32.8–34.6, (600) 32.1–33.8, (620) 31.5–33.9, (640) 31.0–32.4, (660) 30.6–31.8, (680) 30.2–31.4, (700) 30.0–31.0

**Cell Data:** *Space Group:* n.d.  $a = 4.33$   $b = 7.09$   $c = 7.76$   $Z = 2$

**X-ray Powder Pattern:** Guanajuato, Mexico.

2.43 (100), 2.88 (50), 1.48 (40), 2.23 (30), 1.73 (30), 2.67 (20), 2.59 (20)

<b>Chemistry:</b>	(1)	(2)	(3)	(4)
Ag	79.6	79.41	78.9	79.50
Cu		0.50		
Se	15.2	13.96	15.6	14.59
S	6.4	5.93	5.5	5.91
Total	101.2	99.80	100.0	100.00

(1) Silver City, Idaho, USA. (2) Guanajuato, Mexico. (3) San Carlos mine, Guanajuato, Mexico; by electron microprobe. (4) Ag<sub>4</sub>SeS.

**Polymorphism & Series:** Inverted from a higher temperature cubic form.

**Occurrence:** An uncommon, relatively low-temperature, mineral in hydrothermal deposits rich in silver and selenium, but manifestly deficient in sulfur.

**Association:** Acanthite, naumannite, silver, stephanite, proustite, pearceite, calcite, quartz.

**Distribution:** In Mexico, from Guanajuato, in the San Carlos mine [TL] and others; at the Chontalpan mine, Taxco, Guerrero. In the USA, in Idaho, from Silver City, Owyhee Co., and at the 4th of July mine, Yankee Fork, Custer Co.; from the Comstock Lode, Virginia City, Storey Co., Nevada; in Washington, at the L-D mine, Wenatchee, Chelan Co. and the Knob Hill mine, Republic, Ferry Co.; and from Cuchillo, Winston district, Sierra Co., New Mexico. At the Maritoto mine, northeast of Paeroa, New Zealand. From the Woluma goldfield, New South Wales, Australia. In the Sanru mine, Hokkaido, Japan.

**Name:** After Ponciano Aguilar (1853–1935), Superintendent of the San Carlos mine, Guanajuato, Mexico, where the material was originally found.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 178. (2) Earley, J.W. (1950) Description and synthesis of the selenide minerals. *Amer. Mineral.*, 35, 337–364. (3) Petruk, W., D.R. Owens, J.M. Stewart, and E.J. Murray (1974) Observations on acanthite, aguilarite and naumannite. *Can. Mineral.*, 12, 365–369. (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 2.