

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As small laths.  
*Twining:* Commonly twinned.

**Physical Properties:** Hardness =  $\sim 2$  VHN = n.d. D(meas.) = 4.87 (synthetic).  
D(calc.) = 4.806

**Optical Properties:** Opaque. *Color:* In polished section, gray with orange-brown internal reflections. *Luster:* Metallic. *Pleochroism:* Weak. *Anisotropism:* Strong.  
R<sub>1</sub>–R<sub>2</sub>: n.d.

**Cell Data:** *Space Group:*  $Pnam$ .  $a = 8.79(3)$   $b = 14.02(5)$   $c = 3.74(1)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.  
4.131 (100), 5.495 (75), 2.670 (45), 7.003 (40), 2.747 (35), 3.740 (35), 3.257 (30)

**Chemistry:** Composition determined by identity of X-ray powder pattern with synthetic material.

**Occurrence:** In zones of oxidation or secondary enrichment in hydrothermal tin deposits.

**Association:** Stannite, cassiterite, herzenbergite, berndtite.

**Distribution:** In Bolivia, from Cerro Rico, Potosí [TL] and at the Maria-Teresa mine, near Huari, between Oruro and Uyuni. From the Stiepelmann mine, near Arandis, Namibia.

**Name:** To honor Joachim Ottemann (1914– ), German mineralogist, Heidelberg, Germany.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 114486, C5354.

**References:** (1) Moh, G.H. and F. Berndt (1964) Two new natural tin sulfides, Sn<sub>2</sub>S<sub>3</sub> and SnS<sub>2</sub>. *Neues Jahrb. Mineral., Monatsh.*, 94–95. (2) (1965) *Amer. Mineral.*, 50, 2107 (abs. ref. 1). (3) Moh, G.H. (1966) Das binäre System Zinn–Schwefel und seine Minerale (abs.). *Fortschr. Mineral.*, 42, 211. (4) (1966) *Amer. Mineral.*, 51, 1551 (abs. ref. 3). (5) Mosburg, S., D.R. Ross, P.M. Bethke, and P. Toulmin (1961) X-ray powder data for herzenbergite, teallite, and tin trisulfide. *U.S. Geol. Sur. Prof. Paper* 424-C, C347–C348. (6) Kniep, R., D. Mootz, U. Severin, and H. Wunderlich (1982) Structure of tin(II)tin(IV) trisulfide, a redetermination. *Acta Cryst.*, 38, 2022–2023.