

**Crystal Data:** Triclinic. *Point Group:*  $\bar{1}$ . Crystals are short prismatic along [001], to 1 mm, typically with dull or rounded and striated faces; as granular aggregates.

**Physical Properties:** *Cleavage:* {010}, perfect; {110} and {1 $\bar{1}$ 0}, less perfect (referred to morphological axes; relation to X-ray axes uncertain). *Hardness* = 3 *D*(meas.) = 2.255 *D*(calc.) = 2.250 Decomposes in hot  $\text{H}_2\text{O}$ ; rapidly dehydrates to metahohmannite on exposure to air.

**Optical Properties:** Transparent to translucent. *Color:* Chestnut-brown to burnt orange, pale amaranth-red. *Streak:* Yellow-orange. *Luster:* Vitreous, brilliant. *Optical Class:* Biaxial (-). *Pleochroism:* *X* = pale yellow; *Y* = pale greenish yellow; *Z* = dark greenish yellow. *Orientation:*  $Y \wedge c = 23^\circ$ . *Dispersion:*  $r > v$ , extreme.  $\alpha = 1.553\text{--}1.559$   $\beta = 1.643$   $\gamma = 1.655\text{--}1.657$   $2V(\text{meas.}) = 40^\circ$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 9.148(1)$   $b = 10.922(1)$   $c = 7.183(3)$   $\alpha = 90.29(6)^\circ$   $\beta = 90.79(4)^\circ$   $\gamma = 107.36(2)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Sierra Gorda district, Chile.

7.92 (FFF), 8.69 (FF), 10.36 (F), 3.46 (F), 5.31 (mF), 3.12 (mF), 3.95 (mf)

**Chemistry:**

	(1)	(2)
$\text{SO}_3$	33.80	34.52
$\text{Fe}_2\text{O}_3$	33.92	34.42
$\text{H}_2\text{O}$	30.76	31.06
insol.	1.15	
Total	99.63	100.00

(1) Sierra Gorda district, Chile. (2)  $\text{Fe}_2\text{O}(\text{SO}_4)_2 \cdot 8\text{H}_2\text{O}$ .

**Occurrence:** An uncommon low-temperature precipitate in oxidized iron sulfide deposits.

**Association:** Metahohmannite, copiapite, amarantite, sideronatrite (Sierra Gorda district, Chile); chalcantite, picromerite, amarantite, fibroferite, copiapite (Chuquicamata, Chile); metahohmannite, sulfur, cinnabar (Redington mine, California, USA).

**Distribution:** In Chile, in Antofagasta, from near Caracoles, Sierra Gorda district, and at Alcaparrosa, near Cerritos Bayos, both southwest of Calama; at Quetena, west of Calama; and from Chuquicamata. At the Redington mine, Knoxville, Napa Co., California, USA. From Saghand, Yazd, Iran. In the Plaka mine, near Laurium, Greece.

**Name:** Honors Thomas Hohmann (1843–1897), mining engineer of Valparaiso, Chile who discovered the first specimens.

**Type Material:** Mining Academy, Freiberg, Germany, 18623.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 613–614. (2) Scordari, F. (1978) The crystal structure of hohmannite,  $\text{Fe}_2(\text{H}_2\text{O})_4[(\text{SO}_4)_2\text{O}] \cdot 4\text{H}_2\text{O}$  and its relationship to amarantite,  $\text{Fe}_2(\text{H}_2\text{O})_4[(\text{SO}_4)_2\text{O}] \cdot 3\text{H}_2\text{O}$ . Mineral. Mag., 42, 144–146 and M9–M11. (3) Cesbron, F. (1964) Contribution à la minéralogie des sulfates de fer hydratés. Bull. Minéral., 87, 125–143, esp. 134–135 (in French).