

## Schlossmacherite



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**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3} 2/m$ . As polycrystalline aggregates and crusts.

**Physical Properties:** Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.00

**Optical Properties:** Semitransparent. *Color:* Pale green to gray-green; colorless in thin section. *Luster:* Waxy.

*Optical Class:* Uniaxial.  $n = 1.597$   $\omega = \text{n.d.}$   $\epsilon = \text{n.d.}$

**Cell Data:** *Space Group:*  $R\bar{3}m$ .  $a = 6.998(2)$   $c = 16.67(1)$   $Z = [3]$

**X-ray Powder Pattern:** Emma Luisa mine, Chile.

2.962 (100), 4.918 (70), 2.979 (50), 3.510 (35), 1.900 (35), 2.218 (30), 1.752 (25)

### Chemistry:

|                                |          |
|--------------------------------|----------|
|                                | (1)      |
| SO <sub>3</sub>                | 29.32    |
| As <sub>2</sub> O <sub>5</sub> | 13.44    |
| Al <sub>2</sub> O <sub>3</sub> | 36.33    |
| Fe <sub>2</sub> O <sub>3</sub> | 0.55     |
| CuO                            | 1.19     |
| CaO                            | 3.51     |
| SrO                            | 0.26     |
| BaO                            | 0.33     |
| Na <sub>2</sub> O              | 0.47     |
| K <sub>2</sub> O               | 0.54     |
| H <sub>2</sub> O               | [14.06]  |
| Total                          | [100.00] |

(1) Emma Luisa mine, Chile; by electron microprobe, H<sub>2</sub>O by difference, (OH)<sup>1-</sup> calculated for charge balance; corresponds to  $[(\text{H}_3\text{O})_{0.54}\text{Ca}_{0.26}\text{Na}_{0.07}\text{Cu}_{0.06}\text{K}_{0.05}\text{Sr}_{0.01}\text{Ba}_{0.01}]_{\Sigma=1.00}(\text{Al}_{2.97}\text{Fe}_{0.03})_{\Sigma=3.00}[(\text{SO}_4)_{1.53}(\text{AsO}_4)_{0.49}]_{\Sigma=2.02}(\text{OH})_{6.19}$ .

**Mineral Group:** Beudantite group.

**Occurrence:** A rare secondary mineral in the oxidized zone of a copper-bearing gold deposit.

**Association:** Ceruleite, chenevixite, olivenite, alumopharmacosiderite, mansfieldite, barite, quartz, goethite.

**Distribution:** From the Emma Luisa gold mine, Guanaco district, about 100 km east-northeast of Taltal, Antofagasta, Chile.

**Name:** To honor Professor Emeritus Karl Schlossmacher (1887–1980), Institute for Mineralogy and Petrography, Johannes Gutenberg University, Mainz, Germany, Honorary President of the German Gemmological Society.

**Type Material:** University of Heidelberg, Heidelberg, Germany, 10'11'13.

**References:** (1) Schmetzer, K. and H. Bank (1979) Schlossmacherit, ein neues Mineral, benannt nach Prof. Dr. Karl Schlossmacher, dem Ehrenvorsitzenden der Deutschen Gemmologischen Gesellschaft. Z. deutsch gemm. Ges., 28, 131–133 (in German). (2) (1980) Amer. Mineral., 65, 1069 (abs. ref. 1). (3) Schmetzer, K., J. Ottemann, and H. Bank (1980) Schlossmacherit,  $(\text{H}_3\text{O}, \text{Ca})\text{Al}_3[(\text{OH})_6(\text{S}, \text{As})\text{O}_4]_2$ , ein neues Mineral der Alunit-Jarosit-Reihe. Neues Jahrb. Mineral., Monatsh., 215–220 (in German with English abs.).