

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As elongate inclusions to ~200 μm.

**Physical Properties:** *Cleavage:* Observed, rare. *Fracture:* n.d. *Tenacity:* Brittle.  
Hardness = n.d. VHN = 309-450 (100 g load). D(meas.) = n.d. D(calc.) = 4.66(1)

**Optical Properties:** Opaque. *Color:* Black, gray in reflected light. *Streak:* Sepia.

*Luster:* Submetallic.

*Optical Class:* n.d. *Pleochroism:* Strong gray-white (oil). *Anisotropism:* Moderate, gray-blue to white.

R<sub>1</sub>-R<sub>2</sub>: (470) 26.0-34.2, (543) 24.4-31.7, (587) 23.4-30.6, (657) 22.3-29.7

**Cell Data:** *Space Group:* P2<sub>1</sub>/n (probable). *a* = 10.00(1) *b* = 5.758(7) *c* = 9.88(1)  
*β* = 90.64(6)° *Z* = 2

**X-ray Powder Pattern:** Praborna Mn deposit, Aosta Valley, Italy.

3.15 (100), 3.13 (80), 2.409 (80), 2.170 (60), 1.556 (50), 2.229 (40), 4.96 (30)

<b>Chemistry:</b>	(1)
MnO <sub>2</sub>	58.71
Mn <sub>2</sub> O <sub>3</sub>	16.51
Fe <sub>2</sub> O <sub>3</sub>	6.27
TiO <sub>2</sub>	0.70
SiO <sub>2</sub>	0.45
K <sub>2</sub> O	0.83
Na <sub>2</sub> O	0.17
BaO	1.39
<u>SrO</u>	<u>12.77</u>
Total	97.80

(1) Praborna Mn deposit, Aosta Valley, Italy; electron microprobe analysis; corresponding to (Sr<sub>1.01</sub>K<sub>0.14</sub>Ba<sub>0.07</sub>Na<sub>0.04</sub>)<sub>Σ=1.26</sub>(Mn<sup>4+</sup><sub>5.52</sub>Mn<sup>3+</sup><sub>1.71</sub>Fe<sup>3+</sup><sub>0.64</sub>Ti<sub>0.07</sub>Si<sub>0.06</sub>)<sub>Σ=8.00</sub>O<sub>16</sub>.

**Polymorphism & Series:** Forms a series with cryptomelane and hollandite.

**Mineral Group:** Hollandite supergroup, coronadite group.

**Occurrence:** A primary mineral in meta-ophiolite rocks (amphibolite-eclogite facies), the Mn deposit originally of seafloor hydrothermal origin.

**Association:** Braunite, hollandite, cryptomelane, fluorapatite, titanite, jadeite, strontio Piemontite.

**Distribution:** From the Praborna Mn deposit, 5 km south of Saint-Marcel, Aosta Valley, Italy.

**Name:** The strontium analog of cryptomelane. The name alludes to the composition, *strontio*, and the Greek *melas*, *-anos*, for black.

**Type Material:** The Geological Museum of Lausanne, Switzerland (MGL 58770), and in the Laboratoire et Galerie de Minéralogie, Muséum National d'Histoire Naturelle, Paris, France (SM 7090.96).

**References:** (1) Meisser, N., E.-A. Perseil, J. Brugger, and P.-J. Chiappero (1999) Strontiomelane, SrMn<sub>6</sub><sup>4+</sup>Mn<sub>2</sub><sup>3+</sup>O<sub>16</sub>, a new mineral species of the cryptomelane group from St. Marcel-Praborna, Aosta Valley, Italy. *Can. Mineral.*, 37, 673-678. (2) (2000) *Amer. Mineral.*, 85, 628 (abs. ref. 1). (3) Biagioni C., C. Capalbo and M. Pasero (2013) Nomenclature tunings in the hollandite supergroup. *Eur. J. Mineral.*, 25, 85-90.