

# **Ba<sub>4</sub>Mn<sub>2</sub>Ag<sub>2</sub>O(AsO<sub>4</sub>)<sub>4</sub>, ein Barium-Mangan-Oxid-Arsenat mit nichtlinearen O-Ag-O-Hanteln.**

Ba<sub>4</sub>Mn<sub>2</sub>Ag<sub>2</sub>O(AsO<sub>4</sub>)<sub>4</sub>, a Barium Manganese Oxide-Arsenate Showing Nonlinear O-Ag-O Dumbbells

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Barium, Manganese, Silver, Oxide-Arsenate, Crystal Structure

Single crystals of Ba<sub>4</sub>Mn<sub>2</sub>Ag<sub>2</sub>O(AsO<sub>4</sub>)<sub>4</sub> have been prepared by solid state reactions using metallic silver as reactant. X-ray techniques led to monoclinic symmetry, space group  $D_{2h}^2$ -P2<sub>1</sub>/m,  $a = 8.739(2)$ ,  $b = 5.912(1)$ ,  $c = 9.440(2)$  Å,  $\beta = 115.21(1)^\circ$ ,  $Z = 1$ . The crystal structure is characterized by O-Ag-O dumbbells, bond angle =  $165,3^\circ$ , containing one oxygen atom not associated with the arsenate groups. Considering these facts Ba<sub>4</sub>Mn<sub>2</sub>Ag<sub>2</sub>O(AsO<sub>4</sub>)<sub>4</sub> may be seen as an oxide-arsenate or an oxoargentate(I)-arsenate. Assuming the oxidation state +II for manganese, as confirmed by magnetic measurements, the compound has an oxygen deficit which was accounted for by a split position model.

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