



**>>Entry Name: Manganese(II) oxalate**

**Synonym(s):** [Ethanedioato(2-)-O,O']manganese, 11Cl

**CAS Registry Number:** 640-67-5

**Related CAS Registry Numbers(s):** 55703-32-7 88682-90-0

Mn(O<sub>2</sub>CCO<sub>2</sub>)

**Molecular Formula:** C<sub>2</sub>MnO<sub>4</sub>

**Molecular Weight:** 142.958

**Accurate Mass:** 142.917707

**Percentage Composition:** C 16.80%; Mn 38.43%; O 44.77%

**Physical Description:** Pink cryst.

**Other Data:** Synth. by heating dihydrate in N<sub>2</sub> for 2hr at 200°.  $\Delta H_{298}^{\circ} -1087.3 \text{ kJ mol}^{-1}$

**>>Variant: Manganese(II) oxalate dihydrate**

**Synonym(s):** Diaqua[ethanedioato(2-)-O,O']manganese, 11Cl

**CAS Registry Number:** 6556-16-7

**Molecular Formula:** C<sub>2</sub>H<sub>4</sub>MnO<sub>6</sub>

**Molecular Weight:** 178.988

**Accurate Mass:** 178.938837

**Percentage Composition:** C 13.42%; H 2.25%; Mn 30.69%; O 53.63%

**Other Data:**  $\Delta H_{298}^{\circ} -1624.5 \text{ kJ mol}^{-1}$

**>>Derivative:  $\alpha$ -form**

**Source/Synthesis:** Formed from damp trihydrate at r.t., or from aq. solns. of Mn<sup>2(+)</sup> and C<sub>2</sub>O<sub>4</sub><sup>2(-)</sup> above 30° at pH 1.5

**Physical Description:** Monoclinic colourless cryst.

**>>Derivative:  $\gamma$ -form**

**Source/Synthesis:** Formed from aq. solns. of Mn<sup>2(+)</sup> and C<sub>2</sub>O<sub>4</sub><sup>2(-)</sup> above 30° at pH 3-6

**Physical Description:** Orthorhombic pink cryst.

**Other Data:** More thermally stable than  $\alpha$ -form

**>>Variant: Manganese(II) oxalate trihydrate**

**Synonym(s):** [Ethanedioato(2-)-O,O']manganese trihydrate

**CAS Registry Number:** 74174-53-1

**Molecular Formula:** C<sub>2</sub>H<sub>6</sub>MnO<sub>7</sub>

**Molecular Weight:** 197.003

**Accurate Mass:** 196.949402

**Percentage Composition:** C 12.19%; H 3.07%; Mn 27.89%; O 56.85%

**Source/Synthesis:** Synth. by mixing aq. solns. of Mn<sup>2(+)</sup> and C<sub>2</sub>O<sub>4</sub><sup>2(-)</sup> below 30° at pH 1.5-6

**Physical Description:** Orthorhombic pink prisms

**References:**

Dollimore, D. *et al.*, *J.C.S. Dalton*, 1969, 2946, (*synth, thermal dec, struct*)

Deyrieux, R. *et al.*, *Bull. Soc. Chim. Fr.*, 1973, 25, (*cryst struct*)

Nagase, K. *et al.*, *Bull. Chem. Soc. Jpn.*, 1975, **48**, 439, (*thermal dec, ir*)

Deyrieux, R. *et al.*, *J. Chem. Phys.*, 1975, **72**, 793, (*thermodyn props*)

Huizing, A. *et al.*, *Mater. Res. Bull.*, 1977, **12**, 605, (*synth, struct, props*)

*Gmelin Handbook Inorg. Chem., Syst. No. 56*, 1982, **D2**, 89, (*rev, bibl*)