



>>Entry Name: Manganese(II) formate

CAS Registry Number: 3251-96-5

Mn(OOCH)<sub>2</sub>

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

Molecular Weight: 144.973

Accurate Mass: 144.933357

Percentage Composition: C 16.57%; H 1.39%; Mn 37.90%; O 44.14%

Source/Synthesis: Synth. from the dihydrate at 100-120°

Physical Description: Forms [Mn(OOCH)<sub>4</sub>]<sup>2(-)</sup> with formate

Solubility: Sol. H<sub>2</sub>O

Other Data: μ<sub>eff</sub> = 5.71μ<sub>B</sub>. Rehydrates in moist air, struct. contains octahedral Mn(II)

>>Derivative: Dihydrate

Synonym(s): Diaquabis(formato-*O*)manganese(II)

CAS Registry Number: 4247-36-3

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

Molecular Weight: 181.004

Accurate Mass: 180.954487

Percentage Composition: C 13.27%; H 3.34%; Mn 30.35%; O 53.04%

Source/Synthesis: Synth. from MnCO<sub>3</sub> and formic acid

Physical Description: Red cryst. (HCOOH aq.)

Other Data: Struct. contains MnO<sub>6</sub> and *trans*-MnO<sub>2</sub>(OH<sub>2</sub>)<sub>4</sub> octahedra. Canted antiferromagnetic arrangement below *T*<sub>N</sub>. *T*<sub>N</sub> -3.7K

References:

- Osaki, K. *et al.*, *J. Phys. Soc. Jpn.*, 1964, **19**, 717, (*cryst struct*)  
Eckhardt, R.C. *et al.*, *Trans. Faraday Soc.*, 1964, **60**, 1289, (*synth*)  
Dollimore, D. *et al.*, *J. Inorg. Nucl. Chem.*, 1967, **29**, 621, (*synth*)  
Kay, M.I. *et al.*, *Acta Cryst. B*, 1968, **24**, 1312, (*cryst struct, dihydrate*)  
Thomas, J.M. *et al.*, *J.C.S.(A)*, 1970, 2938, (*struct*)  
Burlet, P. *et al.*, *Phys. Status Solidi B*, 1975, **71**, 675, (*magnetism*)  
Ogata, T. *et al.*, *Bull. Chem. Soc. Jpn.*, 1977, **50**, 1674, (*ir*)  
Arkhangel'skii, I.V. *et al.*, *Sov. J. Coord. Chem. (Engl. Transl.)*, 1977, **3**, 292, (*struct*)  
Rao, J.L., *Solid State Commun.*, 1978, **28**, 243, (*uv*)  
*Gmelin Handbook Inorg. Chem., Syst. No. 56*, 1980, **D2**, 1, (*rev, bibl*)  
Weber, G., *Z. Kristallogr.*, 1982, **158**, 315, (*cryst struct, dihydrate*)