>>**Entry Name: Manganese oxide (MnO),** 11Cl
ENTRY UNDER REVIEW
Synonym(s): Cassel green. C.I. 77726. Manganese green

CAS Registry Number: 1344-43-0

MnO

Molecular Formula: MnO
Molecular Weight: 70.937
Accurate Mass: 70.932962
Percentage Composition: Mn 77.45%; O 22.55%

Source/Synthesis: Synth. by H_2 reduction of Mn_2O_3 or MnO_2 at high temp. or by thermal dec. of $MnCO_3$ or MnC_2O_4. The sample is cooled in absence of O_2 to prevent oxidn.
Use/Importance: Miscible with many metal oxides and plays a role in iron metallurgical processes. High purity MnO used in production of ferrites. Technical grade used as fertiliser and food additive
Physical Description: Bright green powder; mod. stable in air. Thermal dec. of $MnCO_3$ at 420-250° produces pyrophoric MnO which rapidly becomes brown. Basic oxide: insol. H_2O. Relatively easily reduced to Mn by metals but not by H_2 or CO
Melting Point: Mp 1850°
Other Data: Will take up oxygen if left to stand in air, becoming brown. Paramagnetic at r.t., becomes antiferromagnetic at *ca.* 120°. Below Néel temp. lattice becomes rhombohedral. Tetragonal high press. modification also known

Aldrich: 37720-1
Fluka: 63561

>>**Variant:** Mineral-form
Synonym(s): Manganosite

CAS Registry Number: 1313-12-8
Molecular Formula: MnO
Molecular Weight: 70.937
Accurate Mass: 70.932962
Percentage Composition: Mn 77.45%; O 22.55%

Source/Synthesis: Occurs in New Jersey, USA and in Sweden
Solubility: Emerald green cryst., becoming black on exp.

References:

Moore, T.E. *et al.*, *J.A.C.S.*, 1950, **72**, 856, *(synth, magnetism, cryst struct)*
Glasser, F.P.*, Am. J. Sci.*, 1958, **256**, 398, *(mp)*
Howe, A.T. *et al.*, *Q. Rev., Chem. Soc.*, 1967, **21**, 507, *(magnetism)*
Hush, N.S. *et al.*, *Prog. Inorg. Chem.*, 1968, **10**, 259, *(uv-vis)*
Finsley, D.M. *et al.*, *J. Therm. Anal.*, 1971, **3**, 43, *(synth)*
Goodenough, J.B.*, Prog. Solid State Chem.*, 1971, **5**, 145, *(magnetism)*
Gmelin Handbook Inorg. Chem., *Syst. No.* 56, 1973, **C1**, 14, *(rev, bibl)*
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **14**, 844, *(uses, props)*
Lewis, R.J.*, Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MAT250

https://www.baizuoyan.com - CopyRight ©baizuoyan