>>**Entry Name: Cobalt(*II*) oxide (CoO),** 8Cl
Synonym(s): Cobaltous oxide. Cobalt monoxide. C.I. 77322. C.I. Pigment black 13

CAS Registry Number: 1307-96-6
Related CAS Registry Numbers(s): 11104-61-3 23396-76-1 57627-73-3 72255-44-8 81326-12-7

CoO

Molecular Formula: CoO
Molecular Weight: 74.933
Accurate Mass: 74.928113
Percentage Composition: Co 78.65%; O 21.35%
General Statement: NaCl struct.
Source/Synthesis: Synth. by heating Co in air or steam or by heating the hydroxide, carbonate or nitrate in the absence of air
Use/Importance: Commercially available. Pigment for ceramics and glasses; catalyst; potential use in dynamic, electrically controlled optical device
Physical Description: Olive green solid; the colour of anhydrous CoO depends upon the degree of dispersion. It may be yellow, grey, brown, reddish, bluish or black
Melting Point: Mp 1935°
Solubility: Insol. H_2O, EtOH; sol. acid, $[NH_4]OH$
Other Data: Readily absorbs O_2 even at r.t., converts to Co_3O_4 at 600-700°. Non-stoichiometric

Aldrich: 34315-3

>>**Derivative:** Hydrate

CAS Registry Number: 12262-94-1

References:

Remy, H.*, Treatise Inorg. Chem.*, Elsevier, 1956, **2**, 293, *(synth, props, struct)*
Ok, H.N. *et al.*, *Phys. Rev.*, 1968, 550, *(struct)*
Brauer, G.*, Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, **3**, 1664, *(synth)*
Okada, K. *et al.*, *J. Phys. Soc. Jpn.*, 1977, **43**, 34, *(Co-59 nmr)*
DeVore, T.C. *et al.*, *J. Chem. Phys.*, 1979, **71**, 474, *(ir)*
Green, D.W. *et al.*, *J. Mol. Spectrosc.*, 1979, **78**, 257, *(ir)*
Jugnet, Y.*, J. Phys. Chem. Solids*, 1979, **40**, 29, *(uv)*
Seehra, M.S. *et al.*, *Solid State Commun.*, 1979, **31**, 183, *(non-stoichiometry, magnetism)*
Burke, L.D. *et al.*, *J. Electroanal. Chem.*, 1980, **109**, 373, *(electrochem, electrochromism)*
Dautremont-Smith, W.C.*, Displays*, 1982, **3**, 67, *(electrochromism)*
Kriger, V.G.*, Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1982, **18**, 979, *(elect props)*
Solomon, A.A. *et al.*, *Am. Ceram. Soc. Bull.*, 1984, **63**, 1021, *(high purity synth)*
Wells, A.F.*, Structural Inorg. Chem.*, 5th Ed., OUP, 1984, 538, *(struct)*
Ahmed, A.I. *et al.*, *Surf. Technol.*, 1985, **26**, 225, *(struct changes, surface props)*
Merck Index, 11th edn., 1989, No. 2440
Polo da Fonseca, C.N. *et al.*, *Adv. Mater.*, 1991, **3**, 553, *(electrochem, electrochromism, use)*
Seike, T. *et al.*, *Sol. Energy Mater.*, 1991, **22**, 107, *(electrochem, electrochromism, optical props)*
Lewis, R.J.*, Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CND125