



>>Entry Name: Chromium(VI) oxide (CrO₃)

Synonym(s): Chromium trioxide. Chromic acid (incorr.). Chromic anhydride

CAS Registry Number: 1333-82-0

Related CAS Registry Numbers(s): 11118-57-3

CrO₃

Molecular Formula: CrO₃

Molecular Weight: 99.994

Accurate Mass: 99.925254

Percentage Composition: Cr 52.00%; O 48.00%

General Statement: Polymeric; corner sharing tetrahedral CrO₄ units form infinite chains

Source/Synthesis: Synth. from Na₂Cr₂O₇ and conc. H₂SO₄

Use/Importance: Commercially available. Used in chromium plating, as corrosion inhibitor, as powerful oxidising agent

Physical Description: Dark orange-red deliquescent cryst.

Melting Point: Mp 190°. Mp 197°

Solubility: V. sol. H₂O; sol. H₂SO₄, org. solvs.

Other Data: Loses O₂ above Mp. Forms many adducts

Hazard & Toxicity: Toxic: can cause eczema, ulceration, pulmonary irritation

Aldrich: 20782-9

Fluka: 27084

Sigma: C6051

References:

Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 144; 1969, **2**, 72; 1972, **3**, 54; 1974, **4**, 96; 1975, **5**, 140; 1979, **7**, 70; 1981, **9**, 115; 1982, **10**, 99; 1986, **12**, 131, (uses)

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Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **4**, 496; **6**, 91; **8**, 841; **9**, 342, (rev)

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