



>>Entry Name: Potassium chromate(VI) (K₂CrO₄)

Synonym(s): Dipotassium chromate

CAS Registry Number: 7789-00-6

K₂CrO₄

Molecular Formula: CrK₂O₄

Molecular Weight: 194.19

Accurate Mass: 193.847583

Percentage Composition: Cr 26.78%; K 40.27%; O 32.96%

Use/Importance: Commercially available oxidant. Used in corrosion inhibition

Solubility: Sol. H₂O; insol. EtOH, Me₂CO, PhCN

Other Data: Weakly paramagnetic. ΔH_f (per K₂CrO₄) –1403 kJ mol^{–1}

Hazard & Toxicity: Toxic, corrosive, cancer suspect agent

Aldrich: 21661-5

Fluka: 60141

Sigma: P0454

>>Variant: α -form

Molecular Formula: CrK₂O₄

Molecular Weight: 194.19

Accurate Mass: 193.847583

Percentage Composition: Cr 26.78%; K 40.27%; O 32.96%

Source/Synthesis: Formed on heating β -form above 666°

Physical Description: Red cryst.

Melting Point: Mp 971° (940-984°)

>>Variant: β -form

Molecular Formula: CrK₂O₄

Molecular Weight: 194.19

Accurate Mass: 193.847583

Percentage Composition: Cr 26.78%; K 40.27%; O 32.96%

Physical Description: Air-stable lemon-yellow orthorhombic cryst.

Other Data: Isomorphous with corresp. sulfate, selenate and manganate

>>Variant: Mineral-form

Synonym(s): Tarapacaite

Molecular Formula: CrK₂O₄

Molecular Weight: 194.19

Accurate Mass: 193.847583

Percentage Composition: Cr 26.78%; K 40.27%; O 32.96%

Source/Synthesis: Mineral occurs associated with Dietzeite and Lopezite in Chile

Physical Description: Transparent bright yellow cryst.

Solubility: Sol. H₂O

Other Data: Props. similar to β -form

References:

Mellor *Compr. Treat. Inorg. Theor. Chem.*, 1931, **11**, 249, (bibl)

Zachariasen, W.H. *et al.*, *Z. Kristallogr.*, 1931, **80**, 164, (cryst struct)

Udy, M.J., *Chromium*, ACS Monograph Series No. 132, Reinhold, 1956, **1**, 141, (rev, props)

Pascal, P. Ed., *Nouveau Traite de Chimie Minerale*, Masson et Cie, Paris, 1959, **14**, 227, (rev, bibl)

Gmelin *Handbook Inorg. Chem., Syst. No. 52*, 1962, 511, (rev, bibl)

McGinnety, J.A., *Acta Cryst. B*, 1972, **28**, 2845, (β -form, struct)

Fieser and Fieser's *Reagents for Organic Synthesis*, Wiley, 1979, **7**, 298, (use)

Gosselin, R.E. *et al.*, *Clinical Toxicology of Commercial Products*, Williams and Wilkins, Baltimore, 1984, 109, (tox)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, PLB250