



>>Entry Name: Chromium(III) chloride (CrCl₃), 9CI

Synonym(s): Chromium trichloride. Chromic chloride, USAN. Chrometrace

CAS Registry Number: 10025-73-7

Related CAS Registry Numbers(s): 16284-59-6 39345-92-1

CrCl₃

Molecular Formula: Cl₃Cr

Molecular Weight: 158.354

Accurate Mass: 156.847065

Percentage Composition: Cl 67.16%; Cr 32.84%

General Statement: Low temp. form (= 240K) has rhombohedral hcp layer struct.; high temp. form (r.t.) is a structural prototype with monoclinic ccp layer struct.

Use/Importance: Supplement (trace mineral). ⁵¹CrCl₃ used as radioactive agent for labelling of erythrocytes. (*Chromic chloride Cr 51*, USAN) Useful starting material for organometallics. Catalyst. Used in manuf. of magnetic recording media

Physical Description: Red-violet flaky cryst.

Melting Point: Mp 1152°

Solubility: Insol. cold H₂O; spar. sol. hot H₂O

Other Data: $\mu_{\text{eff}} = 3.69\mu_{\text{B}}$ ($\theta - 131$, 298K). Forms many compds. with org. adducts

Hazard & Toxicity: LD₅₀ (rat, orl) 1870 mg/kg. Exp. reprod. and teratogenic effects. OES: long-term 0.5 mg m⁻³ (as Cr)

Aldrich: 24146-6

Fluka: 27094

Sigma: C9279

>>Variant: Chromium(III) chloride hexahydrate

CAS Registry Number: 10060-12-5

Molecular Formula: Cl₃CrH₁₂O₆

Molecular Weight: 266.445

Accurate Mass: 264.910455

Percentage Composition: Cl 39.92%; Cr 19.51%; H 4.54%; O 36.03%

Hazard & Toxicity: LD₅₀ (rat, orl) 1790 mg/kg. Exp. teratogenic effects. OES: long-term 0.5 mg m⁻³ (as Cr)

Aldrich: 23072-3

Fluka: 27096

Sigma: C1896

>>Derivative: Dark green form

Synonym(s): Tetraaquadichlorochromium(1+) dihydrate

CAS Registry Number: 29563-34-6

Use/Importance: Commercially available, normal isomer

Physical Description: Dark green cryst.

Other Data: Formulated as [CrCl₂(OH₂)₄]Cl.2H₂O

>>Derivative: Pale green form

Synonym(s): Pentaquachlorochromium(2+) dichloride monohydrate

CAS Registry Number: 36179-36-9

Physical Description: Pale green cryst.

Other Data: Formulated as [CrCl(OH₂)₅]Cl₂.H₂O

>>Derivative: Violet form

Synonym(s): Hexaaquachromium(3+) trichloride

CAS Registry Number: 13820-88-7

Physical Description: Violet cryst.

Other Data: Formulated as [Cr(OH₂)₆]Cl₃

References: