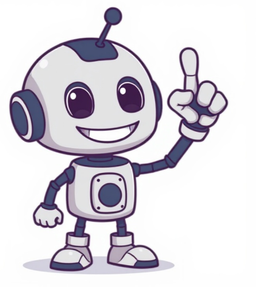
I'm not a bot



Hazard composition and occupational exposure limits Does not contain substances with occupational exposure limits. Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Personal protective equipment Eye/face protection Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Body Protection Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Respiratory protection Where risk assessment shows air-purifying respirators are appropriate use a full- face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Cobalt compound Pentaamminechlorocobalt(III) chloride Names IUPAC name Pentaamminechloridocobalt(III) chloride Other names Pentaamminechlorocobalt(III) chloride Identifiers CAS Number 13859-51-3 3D model (JSmol) Interactive image ChemSpider 140421 ECHA InfoCard 100.034.163 EC Number 237-594-8 PubChem CID 15771825 CompTox Dashboard (EPA) DTXSID701030463 InChI InChI=1S/3ClH.Co.5H3N/h3*1H;;5*1H3/q;;;+3;;;;;/p-3Key: NSYALVBBDKTCLE-UHFFFAOYSA-K SMILES [Cl-].Cl[Co-3]([NH3+])([NH3+])([NH3+])([NH3+])[NH3+].[Cl-] Properties Chemical formula [Co(NH3)5Cl]Cl2 Molar mass 250.4 g/mol Appearance red-violet rhomb-shaped crystal Density 1.783 g/mL Boiling point N/A Solubility in water 0.4 g/100 mL Vapor pressure 5990 mm Hg Thermochemistry Std enthalpy offormation (ΔfH298) -1037.6 kJ/mol Gibbs free energy (ΔfG) −606.48 kJ/mol Except where otherwise noted, data are given for materials in their standard state (at 25 °C [77 °F], 100 kPa). Infobox references Chemical compound Chloropentamminecobalt chloride is the dichloride salt of the coordination complex [Co(NH3)5Cl]2+. It is a red-violet, diamagnetic, water-soluble salt. The compound has been of academic and historical interest. The salt is prepared with a two-step process starting with oxidizing a solution of cobalt chloride and ammonia.[1][2] 2 CoCl2·6H2O + 10 NH3 + 2 HCl + H2O2 → 2 [Co(NH3)5(OH2)]Cl3 + 12 H2O This intermediate is then heated to induce coordination of one of the outer sphere chloride ligands: [Co(NH3)5(OH2)]Cl3 → [Co(NH3)5Cl]Cl2 + H2O The dication [Co(NH3)5Cl]2+ has idealized C4v symmetry.[3][4] In an aqueous solution, chloropentaamminecobalt(III) chloride reforms aquopentammine complex. With concentrated sulfuric acid, chloropentamminecobalt(III) chloride forms the hydrogen sulfate complex [Co(NH3)5OSO3H]2+. Cobalt complexes have been of long-standing interest in inorganic chemistry because they are numerous, easily prepared, and colorful. It was partly on the basis of his study of cobalt coordination chemistry that Alfred Werner was awarded the Nobel Prize in Chemistry. Prior to Werner, the models of amine complexes postulated chains of pentavalent nitrogen centers. This Jørgensen–Bloomstrand model was overthrown by Werner who introduced the idea that coordination complexes feature metal atoms of octahedral and tetrahedral shapes, with ammonia and other ligands attached individually to the metal. Werner's model accounted for the inner sphere ligands being less reactive.[5] In [Co(NH3)5Cl]Cl2, two chloride ions are outer sphere (counter ions) and one is bound to the Co(III) center: reaction with excess silver nitrate would immediately precipitate the two chloride counter ions, but the bound chloride ion would not be precipitated. Also known as CPACC the molecule is investigated in relation with limiting the magnesium available for mitochondria and subsequent metabolic health benefits.[6][7][8] Pentaamminechlororhodium dichloride ^ Gert G. Schlessinger (1967). "Chloropentaamminecobalt(III) Chloride". Inorganic Syntheses. Vol. 9. p. 160. doi:10.1002/9780470132401.ch43. ISBN 978-0-470-13240-1. ^ Williams, Gregory M; Olmsted, John, III; Preksa, Andrew P., III (1989). "Coordination complexes of cobalt: inorganic synthesis in the general chemistry laboratory". Journal of Chemical Education. 66 (12): 1043–5. Bibcode:1989JChEd..66.1043W. doi:10.1021/ed066p1043.{{cite journal}}: CS1 maint: multiple names: authors list (link) ^ G. G. Messmer; E. L. Amma (1968). "Redetermination of the crystal structure of chloropentaamminecobalt(III) dichloride". Acta Crystallogr. B. 24 (3): 417–422. Bibcode:1968AcCrB..24..417M. doi:10.1107/S0567740868002475. ^ Hambley, Trevor W.; Lay, Peter A. (1986). "Comparisons of π-bonding and hydrogen bonding in isomorphous compounds: [M(NH3)5Cl]Cl2 (M = Cr, Co, Rh, Ir, Ru, Os)". Inorganic Chemistry. 25 (25): 4553–8. doi:10.1021/ic00245a020. ^ Schwab, E. (8 September 2003). "Cobalt". Chemical & Engineering News. 81 (36): 80. doi:10.1021/cen-v081n036.p080. ^ Antonio, University of Texas Health Science Center at San (2023-04-09). "Magnesium Magic: New Drug Delivers Weight Loss Even on Sugary, Fatty Diet". SciTechDaily. Retrieved 2023-04-10. ^ Madaris, Travis R.; Venkatesan, Manigandan; Maity, Soumya; Stein, Miriam C.; Vishnu, Neelanjan; Venkateswaran, Mridula K.; Davis, James G.; Ramachandran, Karthik; Uthayabalan, Sukanthathulse; Allen, Cristel; Osidele, Ayodeji; Stanley, Kristen; Bigham, Nicholas P.; Bakewell, Terry M.; Narkunan, Melanie (2023-03-28). "Limiting Mrs2-dependent mitochondrial Mg2+ uptake induces metabolic programming in prolonged dietary stress". Cell Reports. 42 (3) 112155. doi:10.1016/j.celrep.2023.112155. ISSN 2211-1247. PMC 10134742. PMID 36857182. ^ Sansom, Will (2023-03-21). "Novel drug makes mice slim even on sugary, fatty diet". UT Health San Antonio. Retrieved 2023-04-10. Retrieved from " Your input is important to us. Please complete this form to provide feedback related to the content on this product. Your feedback has been submitted: Thank you for helping us improve our website. ChemicalBook >> CAS DataBase List >>PENTAAMMINECHLOROCOBALT(III) CHLORIDE PENTAAMMINECHLOROCOBALT(III) CHLORIDE structure CAS No. 13859-51-3 Chemical Name: PENTAAMMINECHLOROCOBALT(III) CHLORIDE Synonyms CHLOROPENTAMMINO COBALTICHLORIDE;CHLOROPENTAMINO COBALTIC CHLORIDE;pentaaminechlorocobalt dichloride;PENTAAMINECHLOROCOBALT(III)CHLORIDE;Pentaamminechiororhodium(Ⅲ)Chloride;Cobalt(3) chloropentammine chloride;Cobalt(III) chloropentammine chloride;PENTAAMMINECHLOROCOBALT(III) CHLORIDE;CHLOROPENTAAMMINECOBALT (III) CHLORIDE;pentaaminechlorocobalt(III) dichloride CBNumber: CB8757432 Molecular Formula: Cl3CoH15N5 Molecular Weight: 250.44 MDL Number: MFCD00064728 MOL File: 13859-51-3.mol MSDS File: SDS Last updated:2025-01-27 09:38:02 Product description Number Pack Size Price Pentaamminechlorocobalt(III) chloride 98% 298301 10g $101 PENTAAMMINECHLOROCOBALT(III) CHLORIDE 95.00% ING0016037 10G $1167.03 Cobalt(III)chloropentamminechloride,98%AT 98%AT 35505 25G $156.8 Cobalt(III)chloropentamminechloride,≥98%AT ≥98%AT 35505 5G $34.94 More product size PENTAAMMINECHLOROCOBALT(III) CHLORIDE price More Price(7) Manufacturer Product number Product description CAS number Packaging Price Updated Buy Sigma-Aldrich 298301 Pentaamminechlorocobalt(III) chloride 98% 13859-51-3 10g $101 2025-07-31 Buy American Custom Chemicals Corporation ING0016037 PENTAAMMINECHLOROCOBALT(III) CHLORIDE 95.00% 13859-51-3 10G $1167.03 2021-12-16 Buy Chem-Impex 35505 Cobalt(III)chloropentamminechloride,98%AT 98%AT 13859-51-3 25G $156.8 2021-12-16 Buy Chem-Impex 35505 Cobalt(III)chloropentamminechloride,≥98%AT ≥98%AT 13859-51-3 5G $34.94 2021-12-16 Buy Product number Packaging Price Buy 298301 10g $101 Buy ING0016037 10G $1167.03 Buy 35505 25G $156.8 Buy 35505 5G $34.94 Buy PENTAAMMINECHLOROCOBALT(III) CHLORIDE Chemical Properties,Uses,Production brick red crystal(s) [KIR79] [ALD94] A nanocomposite of nanophotoadduct of pentaamminechlorocobalt(III) chloride with hexamine and polythiophene (PTh)may be used in high temperatures electrical appliances. It may be used along with potassium tris(oxalato)chromate(III) to synthesize heterometallic compound, [CoCl(NH3)5] [KCr(C2 O4)3]?0.5H2O.This heterometallic compound has several potential applications such as microporous hybrid material with organic π-donors. Chloropentaamminecobalt (III) Chloride is obtained by oxidation of an ammoniacal CoCl3 solution, and purified via [Co(NH3)sH2O]2(C2O4)3 ? 4H3O.A solution of 20 g. of precipitated cobalt carbonate in some 1:1 HCl is prepared, filtered and cooled; a mixture of 250 ml. of cone, ammonia and 50 g. of (NH4)3CO3 dissolved in 250 ml. of H3O is then added. The mixture is oxidized for three hours by bubbling in a stream of air. After addition of 150 g. of NH4Cl the solution is evaporated to sirup consistency on the steam bath. Dilute HCl is added to drive off the CO 2 and produce a weakly acid reaction; then ammonia is added to give a weakly basic solution, followed by 10 ml. of additional cone, ammonia. The liquid, whose volume at this point is 400-500 ml., is heated on the steam bath until all the tetraammine salt disappears; it is then treated with 300 ml. of cone. HCl and heated for 30-45 minutes on the steam bath. The [Co(NH3)5- Cl]Cl2 precipitates on cooling. It is filtered off and washed with 1:1 HCl until free of NH4Cl, then with alcohol until free of acid. The salt still contains some [Co(NH3) 5]Cl3. Yield: 34.5 g. PENTAAMMINECHLOROCOBALT(III) CHLORIDE Preparation Products And Raw materials PENTAAMMINECHLOROCOBALT(III) CHLORIDE Suppliers Global(38)Suppliers China 25 Germany 2 India 1 Switzerland 1 United Kingdom 2 United States 7 Global 38 Cobalt(2+), pentaamminechloro-, dichloride Cobalt(2+), pentamminechloro-, dichloride Cobalt(3) chloropentammine chloride Pentaamminechiororhodium(Ⅲ)Chloride Cobalt(III) chloropentammine chloride Pentaaminechlorocobalt(III) chloride 98% pentaamminechloro-,dichloride,(oc-6-22)-cobalt(2++ CHLOROPENTAMINO COBALTIC CHLORIDE CHLOROPENTAMMINO COBALTICHLORIDE CHLOROPENTAAMMINECOBALT (III) CHLORIDE PENTAAMINECHLOROCOBALT(III)CHLORIDE PENTAAMMINECHLOROCOBALT(III) CHLORIDE pentaaminechlorocobalt dichloride PENTAAMMINECHLOROCOBALT(III) CHLORIDE, 9 8% PENTAAMMINECHLOROCOBALT(III) CHLORIDE, 99,99+% pentaaminechlorocobalt(III) dichloride PENTAAMMINECHLOROCOBALT(III) CHLORIDE ISO 9001 : 2015 REACH Chloropentaamminecobalt(III) chloride,98.00% 13859-51-3 CoNH35ClCl2 CoClNH35Cl2 Cl3CoH15N5 H15Cl3CoN5 ClCoH15N52Cl Cobalt Salts Metal and Ceramic Science Salts This site uses cookies This website uses cookies and similar technologies to store and retrieve information about your use of this website. 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