



Material Safety Data Sheet

| HAZARD WARNINGS | RISK PHRASES | PROTECTIVE CLOTHING |
|---|--------------------------------------|---|
|  | Harmful compound, minimize exposure. |  |

Section I. Chemical Product and Company Identification

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| Chemical Name | Hexaamminecobalt (III) Chloride | | |
| Catalog Number | H0051 | Supplier | TCI America 9211 N. Harborside St. Portland OR 1-800-423-8616 |
| Synonym | Luteo-cobaltic chloride | | |
| Chemical Formula | [Co(NH ₃) ₆]Cl ₃ | | |
| CAS Number | 10534-89-1 | In case of Emergency Call | Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International) |

Section II. Composition and Information on Ingredients

| Chemical Name | CAS Number | Percent (%) | TLV/PEL | Toxicology Data |
|---------------------------------|------------|-------------|---|-----------------|
| Hexaamminecobalt (III) Chloride | 10534-89-1 | ----- | TWA: 0.05 (mg/m ³) from OSHA/NIOSH TWA: 0.05 STEL: 0.1 (mg/m ³) from ACGIH Consult local authorities for acceptable exposure limits. | Not available. |

Section III. Hazards Identification

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| Acute Health Effects | Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |
| Chronic Health Effects | CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions. |

Section IV. First Aid Measures

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| Eye Contact | Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively. |
| Skin Contact | After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing. |
| Inhalation | If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively. |
| Ingestion | INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively. |

Section V. Fire and Explosion Data

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| Flammability | May be combustible at high temperature. | Auto-Ignition | Not available. |
| Flash Points | Not available. | Flammable Limits | Not available. |
| Combustion Products | These products include toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), halogenated compounds, ammonia. WARNING: Highly toxic HCl gas is produced during combustion. | | |
| Fire Hazards | No specific information is available regarding the flammability of this compound in the presence of various materials. | | |

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Emergency phone number (800) 424-9300

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| Explosion Hazards | Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations. |


Section VI. Accidental Release Measures

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| Spill Cleanup Instructions | Harmful material. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Use a shovel to put the material into a convenient waste disposal container. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. Consult federal, state, and/or local authorities for assistance on disposal. |
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Section VII. Handling and Storage

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| Handling and Storage Information | HARMFUL. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents. |
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Section VIII. Exposure Controls/Personal Protection

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| Engineering Controls | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. |
| Personal Protection | Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.  |
| Exposure Limits | TWA: 0.05 (mg/m ³) from OSHA/NIOSH TWA: 0.05 STEL: 0.1 (mg/m ³) from ACGIH Consult local authorities for acceptable exposure limits. |

Section IX. Physical and Chemical Properties

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| Physical state @ 20°C | Orange-brown crystalline powder. | Solubility | Soluble in cold water, hot water. |
| Specific Gravity | 1.17 | | |
| Molecular Weight | 267.47 | Partition Coefficient | Not available. |
| Boiling Point | Not available. | Vapor Pressure | Not available. |
| Melting Point | Not available. | Vapor Density | Not available. |
| Refractive Index | Not available. | Volatility | Not available. |
| Critical Temperature | Not available. | Odor | Not available. |
| Viscosity | Not available. | Taste | Not available. |

Section X. Stability and Reactivity Data

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| Stability | This material is stable if stored under proper conditions. (See Section VII for instructions) |
| Conditions of Instability | Avoid excessive heat and light. |
| Incompatibilities | Reactive with strong oxidizing agents. |

Section XI. Toxicological Information

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| RTECS Number | Not available. |
| Routes of Exposure | Eye contact. Ingestion. Inhalation. Skin contact. |
| Toxicity Data | Not available. |
| Chronic Toxic Effects | CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions. |
| Acute Toxic Effects | Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |

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Emergency phone number (800) 424-9300

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate Not available.

Section XIII. Disposal Considerations

Waste Disposal Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.

Section XIV. Transport Information

DOT Classification Not a DOT controlled material (United States).

PIN Number Not applicable.

Proper Shipping Name Not applicable.

Packing Group (PG) Not applicable.

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA) This product is **ON** the EPA Toxic Substances Control Act (TSCA) inventory.

WHMIS Classification (Canada) Not available.

EINECS Number (EEC) 234-103-9

EEC Risk Statements R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.

Japanese Regulatory Data Not available.

Section XVI. Other Information**Version 1.0****Validated on 3/30/1998.****Printed 2/24/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.