MSDS Number: **C4312** * * * * * *Effective Date:* ***09/03/09*** * * * * * *Supercedes:* ***04/02/07***

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

CHROMIUM CHLORIDE

1. Product Identification

Synonyms: Chromium (III) chloride, hexahydrate (1:3:6); Chromic chloride hexahydrate; Chromium trichloride hexahydrate; Chromium Chloride, 6-Hydrate
CAS No.: 10025-73-7 Anhydrous (10060-12-5 Hexahydrate)
Molecular Weight: 266.48
Chemical Formula: CrCl3.6H2O
Product Codes:
J.T. Baker: 1588
Mallinckrodt: 0821

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Chromic Chloride	10025-73-7	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. May cause headache, dyspnea, and fever. May also cause tracheobronchial irritation and pulmonary edema.
Ingestion:
Causes irritation to the gastrointestinal tract. Large oral doses may cause dizziness intense thirst, abdominal pain, vomiting, and shock. Death may occur from renal failure. Chromium compounds in the 3+ state have a much lower toxicity than those in the 6+ state.
Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain. Prolonged contact may cause skin ulcerations.
Eye Contact:
Causes irritation, redness, and pain. Prolonged contact may cause eye damage.
Chronic Exposure:
Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated inhalation of dust may cause perforation of the nasal septum.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin conditions or impaired respiratory function may be more susceptible to the effects of this substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
for Cr(III) compounds = 0.5mg/m3 (TWA)

-ACGIH Threshold Limit Value (TLV):
for Cr(III) compounds = 0.5 mg/m3 (TWA), A4 - Not classifiable as a human carcinogen
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:
Greenish-black or violet crystals.
Odor:
Odorless.
Solubility:
Soluble in water.
Specific Gravity:
1.85
pH:

No information found.
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
> 1300C (> 2372F) Dissociates
Melting Point:
1152C (2106F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Emits toxic fumes of chlorine when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizing agents, lithium and nitrogen.
Conditions to Avoid:
Incompatibles.

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11. Toxicological Information

Toxicological Data:
Oral rat LD50: 1790 mg/kg (hydrated form).
Oral rat LD50: 1870 mg/kg (anhydrous form). Investigated as a tumorigen, mutagen, reproductive effector.
Carcinogenicity:
ACGIH classification: Group A4 - Not classifiable as a human carcinogen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Chromic Chloride (10025-73-7)	No	No	3

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12. Ecological Information

Environmental Fate:
When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to evaporate significantly. This material is not expected to significantly bioaccumulate. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.
Environmental Toxicity:
No information found.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste

disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14. Transport Information

Not regulated.

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15. Regulatory Information

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--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                    TSCA  EC   Japan  Australia
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Chromic Chloride (10025-73-7)                  Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                       --Canada--
Ingredient                                    Korea  DSL   NDSL  Phil.
---------------------------------------------  -----  ---   ----  -----
Chromic Chloride (10025-73-7)                  Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                        -SARA 302-    ------SARA 313------
Ingredient                              RQ    TPQ     List  Chemical Catg.
----------------------------------------  ---   -----   ----  --------------
Chromic Chloride (10025-73-7)           1     1*      No    Chromium com

--------\Federal, State & International Regulations - Part 2\----------------
                                                      -RCRA-    -TSCA-
Ingredient                              CERCLA     261.33     8(d)
----------------------------------------  ------     ------    ------
Chromic Chloride (10025-73-7)           1          No         No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  No
SARA 311/312:  Acute: Yes      Chronic: Yes  Fire: No  Pressure: No
Reactivity: No          (Pure / Solid)
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Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Label Precautions:
Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

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