1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Chromium(III) chloride hexahydrate
Product Number: 27096
Brand: Aldrich
Supplier: Sigma-Aldrich Corporation
3050 Spruce Street
SAINT LOUIS MO 63103 USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Harmful by ingestion.

Target Organs
Liver, Kidney

GHS Classification
Acute toxicity, Oral (Category 4)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning
Hazard statement(s)
H302 Harmful if swallowed.
Precautionary statement(s) none

HMIS Classification

Health hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 1

NFPA Rating
Health hazard: 1
Fire: 0
Reactivity Hazard: 1

Health hazard: 1
Fire: 0  
Reactivity Hazard: 0

Potential Health Effects

**Inhalation**  May be harmful if inhaled. May cause respiratory tract irritation.

**Skin**  Harmful if absorbed through skin. May cause skin irritation.

**Eyes**  May cause eye irritation.

**Ingestion**  Harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms:** Chromium trichloride hexahydrate  
Hexaaquachromium(III) chloride

**Formula:** $\text{Cl}_3\text{Cr} \cdot 6\text{H}_2\text{O}$

**Molecular Weight:** 266.45 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>10060-12-5</td>
</tr>
<tr>
<td>EC-No.</td>
<td>233-038-3</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIREFIGHTING MEASURES

**Suitable extinguishing media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Special protective equipment for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

**Further information**
The product itself does not burn.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

**Environmental precautions**
Do not let product enter drains.

**Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. hygroscopic Store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks
Not classifiable as a human carcinogen

| TWA                                             | 0.5 mg/m³    | USA. ACGIH Threshold Limit Values (TLV) |

Upper Respiratory Tract & skin irritation Not classifiable as a human carcinogen varies

| TWA                                             | 0.5 mg/m³    | USA. NIOSH Recommended Exposure Limits |

Chromium(III) compounds include soluble chromic salts. See Appendix C

Personal protective equipment

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and 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.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- **Form**: solid
- **Colour**: no data available

**Safety data**
- **pH**: no data available
- **Melting point/freezing point**: 83 °C (181 °F)
- **Boiling point**: no data available
- **Flash point**: not applicable
- **Ignition temperature**: no data available
- **Autoignition temperature**: no data available
- **Lower explosion limit**: no data available
- **Upper explosion limit**: no data available
- **Vapour pressure**: no data available
- **Density**: 1.76 g/mL at 25 °C (77 °F)
- **Water solubility**: no data available
- **Partition coefficient: n-octanol/water**: no data available
- **Relative vapour density**: no data available
- **Odour**: no data available
- **Odour Threshold**: no data available
- **Evaporation rate**: no data available

### 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**Conditions to avoid**
no data available
**Materials to avoid**
Oxidizing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

---

11. **TOXICOLOGICAL INFORMATION**

**Acute toxicity**

- **Oral LD50**
  - LD50 Oral - rat - 1,790 mg/kg

- **Inhalation LC50**
  - no data available

- **Dermal LD50**
  - no data available

**Other information on acute toxicity**
- no data available

**Skin corrosion/irritation**
- no data available

**Serious eye damage/eye irritation**
- no data available

**Respiratory or skin sensitization**
- no data available

**Germ cell mutagenicity**
- no data available

- Genotoxicity in vitro - Human - leukocyte
  - Cytogenetic analysis

- Genotoxicity in vitro - Human - lymphocyte
  - Cytogenetic analysis

- Genotoxicity in vitro - Hamster - Lungs
  - DNA damage

- Genotoxicity in vitro - Hamster - Kidney
  - Other mutation test systems

- Genotoxicity in vitro - Hamster - fibroblast
  - Sister chromatid exchange

- Genotoxicity in vitro - Hamster - Lungs
  - Sister chromatid exchange

- Genotoxicity in vivo - rat - Intraperitoneal
  - DNA damage

**Carcinogenicity**

- **IARC:**
  - 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Chromium trichloride hexahydrate)

- **NTP:**
  - No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

- **OSHA:**
  - No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
Reproductive toxicity - mouse - Intraperitoneal
Tumorigenic Effects: Other reproductive system tumors.
no data available

Teratogenicity
Developmental Toxicity - mouse - Intraperitoneal
Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material). Specific Developmental Abnormalities: Central nervous system.
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. May cause respiratory tract irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>Skin</td>
<td>Harmful if absorbed through skin. May cause skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>May cause eye irritation.</td>
</tr>
</tbody>
</table>

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: GB5450000

12. ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.
14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Harmful by ingestion.

SARA 302 Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

SARA 313 Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium trichloride hexahydrate</td>
<td>10060-12-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
Copyright 2012 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.