

## SAFETY DATA SHEET

Version 6.8  
Revision Date 08/27/2023  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Chromyl chloride

Product Number : 200042  
Brand : Aldrich  
Index-No. : 024-005-00-2  
CAS-No. : 14977-61-8

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Oxidizing liquids (Category 1), H271  
Skin corrosion (Category 1A), H314  
Serious eye damage (Category 1), H318  
Skin sensitization (Category 1), H317  
Germ cell mutagenicity (Category 1B), H340  
Carcinogenicity (Category 1B), H350  
Short-term (acute) aquatic hazard (Category 1), H400  
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statement(s)

|      |   |
|------|---|
| H271 | May cause fire or explosion; strong oxidizer.         |
| H314 | Causes severe skin burns and eye damage.              |
| H317 | May cause an allergic skin reaction.                  |
| H340 | May cause genetic defects.                            |
| H350 | May cause cancer.                                     |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statement(s)

|                           |  |
|---------------------------|--|
| P201                      | Obtain special instructions before use.  |
| P202                      | Do not handle until all safety precautions have been read and understood.  |
| P210                      | Keep away from heat.   |
| P220                      | Keep/Store away from clothing/ combustible materials.  |
| P221                      | Take any precaution to avoid mixing with combustibles.   |
| P261                      | Avoid breathing mist or vapors.  |
| P264                      | Wash skin thoroughly after handling.   |
| P272                      | Contaminated work clothing must not be allowed out of the workplace.   |
| P273                      | Avoid release to the environment.  |
| P280                      | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P283                      | Wear fire/ flame resistant/ retardant clothing.  |
| P301 + P330 + P331        | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| P303 + P361 + P353        | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.   |
| P304 + P340 + P310        | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.   |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P306 + P360               | IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.   |
| P308 + P313               | IF exposed or concerned: Get medical advice/ attention.  |
| P333 + P313               | If skin irritation or rash occurs: Get medical advice/ attention.  |
| P363                      | Wash contaminated clothing before reuse.   |
| P370 + P378               | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.   |
| P371 + P380 + P375        | In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.   |
| P391                      | Collect spillage.  |
| P405                      | Store locked up.   |
| P501                      | Dispose of contents/ container to an approved waste disposal plant.  |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                              |
|------------------|------------------------------|
| Synonyms         | : Dichlorochromium(VI) oxide |
| Formula          | : $\text{Cl}_2\text{CrO}_2$  |
| Molecular weight | : 154.90 g/mol               |
| CAS-No.          | : 14977-61-8                 |
| EC-No.           | : 239-056-8                  |
| Index-No.        | : 024-005-00-2               |

| Component                  | Classification   | Concentration |
|----------------------------|--|---------------|
| <b>Chromic oxychloride</b> |  |               |
|                            | Ox. Liq. 1; Skin Corr. 1A;<br>Eye Dam. 1; Skin Sens. 1;<br>Muta. 1B; Carc. 1B;<br>Aquatic Acute 1; Aquatic<br>Chronic 1; H271, H314,<br>H318, H317, H340, H350,<br>H400, H410<br>Concentration limits:<br>5 - < 10 %: Skin Corr.<br>1B, H314; 0.5 - < 5 %:<br>Eye Irrit. 2, H319; >= 10<br>%: Skin Corr. 1A, H314;<br>0.5 - < 5 %: Skin Irrit. 2,<br>H315; 0.5 - < 5 %: STOT<br>SE 3, H335; >= 0.5 %:<br>Skin Sens. 1, H317;<br>M-Factor - Aquatic Acute:<br>10<br>M-Factor - Aquatic<br>Chronic: 10 | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.  
Remove contact lenses.

**If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

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

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Hydrogen chloride gas

Chromium oxides

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Separately or together with other oxidising substances only and away from sources of ignition and heat. Because of their oxidation potential these products can raise the burning rate of combustible substances substantially or ignite combustible substances on contact with them.

#### Storage class

Storage class (TRGS 510): 5.1A: Strongly oxidizing hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component           | CAS-No.    | Value   | Control parameters | Basis                                   |
|---------------------|------------|---|--------------------|---|
| Chromic oxychloride | 14977-61-8 | TWA   | 0.0001 ppm         | USA. ACGIH Threshold Limit Values (TLV) |
|                     | Remarks    | Dermal Sensitization<br>Respiratory sensitization<br>Confirmed human carcinogen<br>Danger of cutaneous absorption |                    |   |

|  |  |   |                         |   |
|--|--|---|-------------------------|---|
|  |  | STEL  | 0.00025 ppm             | USA. ACGIH Threshold Limit Values (TLV)   |
|  |  | Dermal Sensitization<br>Respiratory sensitization<br>Confirmed human carcinogen<br>Danger of cutaneous absorption |                         |   |
|  |  | TWA   | 0.001 mg/m3             | USA. NIOSH Recommended Exposure Limits  |
|  |  | Potential Occupational Carcinogen   |                         |   |
|  |  | PEL   | 0.025 ppm<br>0.15 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|  |  | PEL   | 0.005 mg/m3             | OSHA Specifically Regulated Chemicals/Carcinogens                                       |
|  |  | OSHA specifically regulated carcinogen  |                         |   |

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### Skin protection

required

#### Body Protection

protective clothing

#### Respiratory protection

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.  
required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Control of environmental exposure

Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance                      Form: liquid

|   |  |
|---|--|
|   | Color: red   |
| b) Odor   | No data available  |
| c) Odor Threshold                               | No data available  |
| d) pH   | No data available  |
| e) Melting point/freezing point                 | Melting point/range: -96.5 °C (-141.7 °F) - lit.                         |
| f) Initial boiling point and boiling range      | 117 °C 243 °F - lit.   |
| g) Flash point                                  | ( )Not applicable  |
| h) Evaporation rate                             | No data available  |
| i) Flammability (solid, gas)                    | No data available  |
| j) Upper/lower flammability or explosive limits | No data available  |
| k) Vapor pressure                               | No data available  |
| l) Vapor density                                | No data available  |
| m) Density                                      | 1.911 g/cm <sup>3</sup> at 25 °C (77 °F) - lit.                          |
| Relative density                                | No data available  |
| n) Water solubility                             | No data available  |
| o) Partition coefficient: n-octanol/water       | No data available  |
| p) Autoignition temperature                     | No data available  |
| q) Decomposition temperature                    | No data available  |
| r) Viscosity                                    | No data available  |
| s) Explosive properties                         | No data available  |
| t) Oxidizing properties                         | The substance or mixture is classified as oxidizing with the category 1. |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Reacts violently with water., Organic materials, Alcohols

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

No data available

#### Skin corrosion/irritation

Remarks: No data available

#### Serious eye damage/eye irritation

Remarks: No data available

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

In vivo tests showed mutagenic effects

#### Carcinogenicity

Carcinogen

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Chromic oxychloride)

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

OSHA: OSHA specifically regulated carcinogen (Chromic oxychloride)

#### Reproductive toxicity

No data available

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available



## 11.2 Additional Information

RTECS: GB5775000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## SECTION 14: Transport information

### DOT (US)

UN number: 1758    Class: 8    Packing group: I

Proper shipping name: Chromium oxychloride

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 1758    Class: 8    Packing group: I

Proper shipping name: CHROMIUM OXYCHLORIDE

EMS-No: F-A, S-B

Marine pollutant : yes

**IATA**

UN number: 1758 Class: 8

Packing group: I

Proper shipping name: Chromium oxychloride

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**SECTION 15: Regulatory information**

**SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

|                     | CAS-No.    | Revision Date |
|---------------------|------------|---------------|
| Chromic oxychloride | 14977-61-8 | 1993-02-16    |

**SARA 311/312 Hazards**

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

|                     | CAS-No.    | Revision Date |
|---------------------|------------|---------------|
| Chromic oxychloride | 14977-61-8 | 1993-02-16    |

**Pennsylvania Right To Know Components**

|                     | CAS-No.    | Revision Date |
|---------------------|------------|---------------|
| Chromic oxychloride | 14977-61-8 | 1993-02-16    |

**California Prop. 65 Components**

|   | CAS-No.    | Revision Date |
|---|------------|---------------|
| , which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> . Chromic oxychloride | 14977-61-8 | 2014-06-06    |

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**SECTION 16: Other information**

**Further information**

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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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