# SAFETY DATA SHEET

**Creation Date** 24-Nov-2010 **Revision Date** 10-Apr-2019 **Revision Number** 1

## 1. Identification

**Product Name** **Chromium trioxide**

**Cat No. :** **C2980**

**Synonyms** Chromium trioxide; Chromic acid; Chromic anhydride

**Recommended Use** Laboratory chemicals

**Uses advised against** No Information available

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

**Company**
Lab Alley LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
Tel: 512-668-9918

## 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Oxidizing solids | Category 1 |
| Acute oral toxicity | Category 3 |
| Acute dermal toxicity | Category 2 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 2 |
| Skin Corrosion/irritation | Category 1 A |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Respiratory Sensitization | Category 1 |
| Skin Sensitization | Category 1 |
| Germ Cell Mutagenicity | Category 1B |
| Carcinogenicity | Category 1A |
| Reproductive Toxicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |
| Specific target organ toxicity - (repeated exposure) | Category 1 |
| Target Organs - Liver, Kidney, Blood. | |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
May cause fire or explosion; strong oxidizer
Toxic if swallowed
Fatal in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
May cause genetic defects
May cause cancer
Suspected of damaging fertility
Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements**
**Prevention**
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Do not breathe dust/fume/gas/mist/vapors/spray
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep/Store away from clothing/ other combustible materials
Take any precaution to avoid mixing with combustibles
Wear fire/flame resistant/retardant clothing
**Response**
Immediately call a POISON CENTER or doctor/physician
**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
**Skin**
IF ON SKIN: Gently wash with plenty of soap and water
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
Rinse skin with water/shower
**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
**Ingestion**
Rinse mouth
Do NOT induce vomiting
**Fire**
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion
In case of fire: Use CO2, dry chemical, or foam for extinction

**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**Disposal**
Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**
Very toxic to aquatic life with long lasting effects

## 3. Composition / information on ingredients

**Haz/Non-haz**

| Component | CAS-No | Weight % |
|---|---|---|
| Chromium trioxide (CrO3) | 1333-82-0 | >95 |

## 4. First-aid measures

**Eye Contact** Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

**Skin Contact** Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Most important symptoms/effects** Causes burns by all exposure routes. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

**Notes to Physician** Treat symptomatically.

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media** No information available.

**Flash Point** No information available.
**Method -** No information available

**Autoignition Temperature** No information available.
**Explosion Limits**
**Upper** No data available
**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**
Oxidizer: Contact with combustible/organic material may cause fire. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated.

**Hazardous Combustion Products** Carbon dioxide ($CO_2$), Highly toxic fumes.

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 4 | 0 | 1 | OX |

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions** See Section 12 for additional ecological Information. Avoid release to the environment. Collect spillage.

**Methods for Containment and Clean Up** Keep combustibles (wood, paper, oil, etc) away from spilled material. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Wear personal protective equipment. Use only under a chemical fume hood. Avoid dust formation. Keep away from clothing and other combustible materials. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest.

**Storage** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|
| Chromium trioxide (CrO3) | TWA: 0.05 mg/m$^3$ | (Vacated) Ceiling: 0.1 mg/m$^3$ | IDLH: 15 mg/m$^3$<br>TWA: 0.0002 mg/m$^3$ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
|---|---|---|---|
| Chromium trioxide (CrO3) | TWA: 0.05 mg/m$^3$ | TWA: 0.5 mg/m$^3$<br>TWA: 0.05 mg/m$^3$ | TWA: 0.05 mg/m$^3$ |

***Legend***
***ACGIH*** *- American Conference of Governmental Industrial Hygienists*
***OSHA*** *- Occupational Safety and Health Administration*
***NIOSH IDLH:*** *The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

**Engineering Measures** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Solid |
| **Appearance** | Reddish-violet |
| **Odor** | Odorless |
| **Odor Threshold** | No information available. |
| **pH** | 1 50g/l aq.sol. |
| **Melting Point/Range** | 196°C / 384.8°F |
| **Boiling Point/Range** | No information available. |
| **Flash Point** | No information available. |
| **Evaporation Rate** | No information available. |
| **Flammability (solid,gas)** | No information available |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | No information available. |
| **Vapor Density** | 3.4 |
| **Relative Density** | 2.700 |
| **Solubility** | No information available. |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | No information available. |
| **Decomposition temperature** | 198 °C |
| **Viscosity** | No information available. |
| **Molecular Formula** | Cr O3 |
| **Molecular Weight** | 99.99 |

## 10. Stability and reactivity

**Reactive Hazard** No

**Stability** Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

**Conditions to Avoid** Excess heat. Incompatible products. Exposure to moist air or water. Combustible material.

**Incompatible Materials** Bases, Alcohols, Amines, Ammonia, Hydrocarbons, Ketones, Acetone, Acid anhydrides, Metals, Reducing agents, Powdered metals

**Hazardous Decomposition Products** Carbon dioxide ($CO_2$), Highly toxic fumes

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing

## 11. Toxicological information

**Acute Toxicity**

**Product Information**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Chromium trioxide (CrO3) | 50 mg/kg ( Rat ) | 55 mg/kg ( Rabbit ) | 0.217 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Causes severe burns by all exposure routes

**Sensitization** May cause sensitization by inhalation and skin contact

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Chromium trioxide (CrO3) | 1333-82-0 | Group 1 | Known | A1 | X | A1 |

**Mutagenic Effects** Mutagenic Ames test: positive.

**Reproductive Effects** Possible risk of impaired fertility.

**Developmental Effects** No information available.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**STOT - single exposure** Respiratory system.

**STOT - repeated exposure** Liver, Kidney, Blood.

**Aspiration hazard** No information available.

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** See actual entry in RTECS for complete information.

## 12. Ecological information

**Ecotoxicity**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Chromium trioxide (CrO3) | Not listed | 40 mg/L LC50 96 h | Not listed | Not listed |

**Persistence and Degradability** No information available.

**Bioaccumulation/ Accumulation** No information available

**Mobility** No information available

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN-No** | UN1463 |
| **Proper Shipping Name** | CHROMIUM TRIOXIDE, ANHYDROUS |
| **Hazard Class** | 5.1 |
| **Subsidiary Hazard Class** | 8; 6.1 |
| **Packing Group** | II |

**TDG**

| | |
|---|---|
| **UN-No** | UN1463 |
| **Proper Shipping Name** | CHROMIUM TRIOXIDE, ANHYDROUS |
| **Hazard Class** | 5.1 |
| **Subsidiary Hazard Class** | 8; 6.1 |
| **Packing Group** | II |

**IATA**

| | |
|---|---|
| **UN-No** | 1463 |
| **Proper Shipping Name** | CHROMIUM TRIOXIDE, ANHYDROUS |
| **Hazard Class** | 5.1 |
| **Subsidiary Hazard Class** | 6.1, 8 |
| **Packing Group** | II |

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | 1463 |
| **Proper Shipping Name** | CHROMIUM TRIOXIDE, ANHYDROUS |
| **Hazard Class** | 5.1 |
| **Subsidiary Hazard Class** | 6.1, 8 |
| **Packing Group** | II |

## 15. Regulatory information

**International Inventories**

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium trioxide (CrO3) | X | X | - | 215-607-8 | - | | X | X | X | X | X |

**Legend:**
**X - Listed**
**E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.**
**F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.**
**N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.**
**P - Indicates a commenced PMN substance**
**R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.**
**S - Indicates a substance that is identified in a proposed or final Significant New Use Rule**
**T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.**
**XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).**
**Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.**
**Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.**

**U.S. Federal Regulations**

**TSCA 12(b)**

| Component | TSCA 12(b) |
|---|---|
| Chromium trioxide (CrO3) | Section 6 |

**SARA 313**

| Component | CAS-No | Weight % | SARA 313 - Threshold Values % |
|---|---|---|---|
| Chromium trioxide (CrO3) | 1333-82-0 | >95 | 0.1 |

**SARA 311/312 Hazardous Categorization**

| | |
|---|---|
| **Acute Health Hazard** | Yes |
| **Chronic Health Hazard** | Yes |
| **Fire Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |
| **Reactive Hazard** | No |

**Clean Water Act**

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---|---|---|---|---|
| Chromium trioxide (CrO3) | - | - | X | - |

**Clean Air Act**

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---|---|---|---|
| Chromium trioxide (CrO3) | X | | - |

**OSHA** Occupational Safety and Health Administration
Not applicable

| Component | Specifically Regulated Chemicals | Highly Hazardous Chemicals |
|---|---|---|
| Chromium trioxide (CrO3) | 5 µg/m$^3$ TWA<br>2.5 µg/m$^3$ Action Level | - |

**CERCLA**
Not Applicable

**California Proposition 65** This product contains the following Proposition 65 chemicals:

| Component | CAS-No | California Prop. 65 | Prop 65 NSRL |
|---|---|---|---|
| Chromium trioxide (CrO3) | 1333-82-0 | Carcinogen<br>Developmental<br>Female Reproductive<br>Male Reproductive | 0.001 µg/day |

**State Right-to-Know**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Chromium trioxide (CrO3) | X | X | X | X | X |

**U.S. Department of Transportation**

| | |
|---|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

**U.S. Department of Homeland Security**
This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Canada**
**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.**

**WHMIS Hazard Class**
C Oxidizing materials
D1A Very toxic materials
D2A Very toxic materials
E Corrosive material

## 16. Other information

**Prepared By**
Regulatory Affairs
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**Creation Date** 24-Nov-2010
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**Print Date** 10-Apr-2019
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**
**The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**

**End of SDS**