

## Chromium Trioxide, Flake Technical

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Chromium Trioxide, Flake Technical

**Synonyms/Generic Names:** Chromium trioxide, Chromic anhydride, Monochromium trioxide

**Product Number:** C1022

**Product Use:** Industrial, Manufacturing or Laboratory use

**Supplier:** Rocky Mountain Reagents, Inc.  
4621 Technology Drive, Golden, CO 80403  
Phone: (303) 762-0800 Fax: (303) 762-1240

**Emergency Phone Number:** (800) 255-3924 (CHEM-TEL)

### 2. HAZARDS IDENTIFICATION

**OSHA Hazards:** Oxidizer, Target organ effect, Toxic by ingestion, Highly toxic by skin absorption, Respiratory sensitizer, Corrosive, Carcinogen, Teratogen, Reproductive hazard, Mutagen

**Target Organs:** Kidneys, Lungs, Liver, Nerves, Blood, Eyes, Skin, Respiratory system

**Signal Words:** Danger

**Pictograms:**



**GHS Classification:**

Oxidizing solids	Category 1
Acute toxicity, Oral	Category 3
Acute toxicity, Dermal	Category 2
Acute toxicity, Inhalation	Category 2
Skin corrosion	Category 1A
Serious eye damage	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-repeated exposure, Inhalation	Category 1
Acute aquatic toxicity	Category 1

**GHS Label Elements, including precautionary statements:**

**Hazard Statements:**

H271	May cause fire or explosion; strong oxidizer.
H301	Toxic if swallowed.
H310+H330	Fatal in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or exposure if inhaled.
H400	Very toxic to aquatic life.

**Precautionary Statements:**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220	Keep/Store away from clothing and other combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P262	do not get in eyes, on skin, or on clothing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P283	Wear fire/flammable resistant/retardant clothing.
P284	In case of inadequate ventilation, wear respiratory protection.
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	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician.
P363	Wash contaminated clothing before reuse.
P371+P380+P375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

**Potential Health Effects**

<b>Eyes</b>	Causes severe eye burns.
<b>Inhalation</b>	Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	May be fatal if absorbed through skin. Causes skin burns.
<b>Ingestion</b>	Toxic if swallowed.

**NFPA Ratings**

Health	4
Flammability	0
Reactivity	2
Specific hazard	OX

**HMIS Ratings**

Health	4
Fire	0
Reactivity	2
Personal	J

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Chromium Trioxide	>99	1333-82-0	215-607-8	CrO <sub>3</sub>	63.99 g/mol

**4. FIRST-AID MEASURES**

<b>Eyes</b>	Immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
<b>Skin</b>	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable (and unsuitable) extinguishing media</b>	Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (chromium oxides) under fire conditions. See also Stability and Reactivity section.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions, protective equipment and emergency procedures</b>	See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
<b>Methods and materials for containment and cleaning up</b>	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

---

## 7. HANDLING AND STORAGE

---

### Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts and aerosols.

### Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

---

### Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Chromic acid	0.05 mg/m <sup>3</sup> (Cr)	TLV	ACGIH
	0.1 mg/m <sup>3</sup> (CrO <sub>3</sub> )	STEL	OSHA
	0.001 mg/m <sup>3</sup> (Cr(VI))	REL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

### Personal Protection

<b>Eyes</b>	Wear chemical safety glasses or goggles with face shield.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear nitrile or rubber gloves, and complete body suit.
<b>Other</b>	Not Available

### Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

Appearance (physical state, color, etc.)	Dark red crystals, flakes or powder.
Odor	Odorless.
Odor threshold	Not Available
pH	1.1 (1% soln/water)
Melting point/freezing point	197°C (387°F)
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	Not Available

Solubility (ies)	Soluble in water, diethyl ether, ethyl alcohol, nitric acid, acetic acid, acetone, sulfuric acid.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur.
<b>Conditions to Avoid</b>	Heat and moisture.
<b>Incompatible Materials</b>	Organic materials, phosphorus, powdered metals.
<b>Hazardous Decomposition Products</b>	Chromium oxides.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Chromium Trioxide

<b>Skin</b>	LD50 – Rabbit – 57 mg/kg Skin – Rabbit – Result: Corrosive - 24 h
<b>Eyes</b>	Eyes – Rabbit – Result: Corrosive
<b>Respiratory</b>	LC50 – Rat – 21.7 mg/kg
<b>Ingestion</b>	LD50 – Rat – 80 mg/kg

### Carcinogenicity

<b>IARC</b>	1-Group 1: Carcinogenic to humans (Chromium trioxide).
<b>ACGIH</b>	A1: Confirmed for human (Chromium trioxide).
<b>NTP</b>	Known to be human carcinogen (Chromium trioxide).
<b>OSHA</b>	1910.1026 (Chromium trioxide).

### Signs & Symptoms of Exposure

<b>Skin</b>	Redness, burns, itching, pain.
<b>Eyes</b>	Burns, watering eyes, pain.
<b>Respiratory</b>	Coughing, shortness of breath, burning, choking, wheezing, headache.
<b>Ingestion</b>	Burns, nausea, vomiting, pain, severe diarrhea.

<b>Chronic Toxicity</b>	Adverse reproductive effects. Affect genetic material. May cause cancer.
<b>Teratogenicity</b>	May alter genetic material.
<b>Mutagenicity</b>	May alter genetic material. In vivo tests showed mutagenic effects.
<b>Embryotoxicity</b>	May cause reproductive disorders.
<b>Specific Target Organ Toxicity</b>	Kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, eyes. Causes severe respiratory tract irritation.
<b>Reproductive Toxicity</b>	Not Available
<b>Respiratory/Skin Sensitization</b>	Not Available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Chromium Trioxide

<b>Aquatic Vertebrate</b>	LC50 – Tilapia mossambica – 21-141 mg/L – 96h LC50 – Leuciscus idus – 100 mg/L – 48h
<b>Aquatic Invertebrate</b>	EC50 – Daphnia magna – 0.8 mg/L – 48h
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Not Available
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Very toxic to aquatic life.

---

### 13. DISPOSAL CONSIDERATIONS

---

<b>Waste Product or Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

---

### 14. TRANSPORTATION INFORMATION

---

US DOT	UN1463, Chromium trioxide, anhydrous, 5.1, (6.1), (8), pg II
TDG	UN1463, CHROMIUM TRIOXIDE, ANHYDROUS, 5.1, (6.1), (8), pg II
IMDG	UN1463, CHROMIUM TRIOXIDE, ANHYDROUS, 5.1, (6.1), (8), pg II
Marine Pollutant	Yes
IATA/ICAO	UN1463, Chromium trioxide, anhydrous, 5.1, (6.1), (8), pg II

---

### 15. REGULATORY INFORMATION

---

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Chromium Trioxide
SARA 302	Listed: Chromium Trioxide
SARA 304	Listed: Chromium Trioxide
SARA 311	Reactivity hazard, Acute health hazard, Chronic health hazard.
SARA 312	Reactivity hazard, Acute health hazard, Chronic health hazard.
SARA 313	Listed: Chromium Trioxide
WHMIS Canada	Class C: Oxidizing material. Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC). Class E: Corrosive solid.

---

## 16. OTHER INFORMATION

---

Revision	Date
Revision 1	10/14/2015

Disclaimer: Rocky Mountain Reagents, Inc. believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Rocky Mountain Reagents, Inc. has no continuing control over the material, those handling, storing, or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state, and local law. ROCKY MOUNTAIN REAGENTS, INC. MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.