

# spectrum

chemicals & laboratory products

A Division of Spectrum Chemical Mfg. Corp.

Dear Customer,

## This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI<sup>1</sup> format to the GHS<sup>2</sup> format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

### Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

### Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

- 1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.  
ANSI labels: pictograms, if present, will be inside individual black boxes.
- 2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number. Directly to the left will be a string of control characters, followed by a single letter.  
For GHS labels, the string of characters will end in "GHS:"

**Label in ANSI Format**

<p><b>CAUTION!</b> MAY BE HARMFUL IF SWALLOWED MAY CAUSE EYE AND SKIN IRRITATION MAY AFFECT BEHAVIOR AND METABOLISM</p> <p>Do not taste or swallow. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor. Avoid prolonged or repeated exposure. Use with adequate ventilation. Wash thoroughly after handling.</p> <p><b>FIRST AID:</b> In case of contact, flush affected area with plenty of water for at least 15 minutes. Remove if worn. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If irritation persists, call a physician.</p> <p><b>KEEP FROM CHILDREN</b></p>	<p><b>SPECTRUM</b> CHEMICALS &amp; LABORATORY PRODUCTS</p> <p><b>BE159      SIZ SY</b></p> <p><b>Benzyl Benzoate</b> (Benzoic Acid Phenylmethyl Ester)</p> <p>U.S.P. CAS 120-51-4</p> <p><b>CAUTION:</b> For manufacturing, processing or repacking. Read and understand the label and Material Safety Data Sheet (MSDS) prior to use.</p> <p>For chemical emergency, call (800)424-9300</p> <p>www.SpectrumChemical.com</p>	<p><math>C_{11}H_{12}O_2</math>      F.W. 212.24</p> <p>Assay ..... 99.0-100.5% Specific Gravity @ 25°C ..... 1.116-1.120 Congealing Temperature ..... Min: 18.0°C Refractive Index @ 20°C ..... 1.565-1.570 Acidity ..... To pass test</p> <p><b>MAXIMUM LIMITS</b></p> <p>Aldehyde ..... 0.05% Residual Solvents ..... To pass test</p> <p><b>LIGHT SENSITIVE.</b> Keep tightly closed in light-resistant containers.</p> <p><b>FLUSHED WITH NITROGEN</b></p>
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Lot No. XQ###

SPECTRUM CHEMICAL MFG. CORP.      Gardena, CA 90248 • New Brunswick, NJ 08901

CORPORATE OFFICES  
14422 South San Pedro Street  
Gardena, California 90248  
PHONE 310.516.8000  
FAX 310.516.9843

**Label in GHS Format**

**WARNING!**

- May irritate or sensitize • May cause central nervous system effects based on animal data
- Do not use or breathe • Wear protective gloves
- After handling
- WASH AND DECONTAMINATE Carefully
- PERSON CLEANER or consult physician
- If you feel unwell, consult your doctor

**KEEP FROM CHILDREN**

**SPECTRUM™**

BE159      SIZ SY

**Benzyl Benzoate**  
(Benzoic Acid Phenylmethyl Ester)

U.S.P.  
CAS 129-51-4

**CAUTION:** For manufacturing processing or shipping, read and understand the label and Safety Data Sheet (SDS) prior to use.

Chemical Emergency: (800)474-4088  
www.SpectrumChemical.com

G<sub>10</sub>H<sub>10</sub>O<sub>2</sub>      F.W. 212.24

Assay	99.0-100.5%
Specific Gravity @ 25°C	1.116-1.120
Freezing Temperature	Min. 18.0°C
Refractive Index @ 20°C	1.568-1.570
Acidity	To pass test
<b>MAXIMUM LIMITS</b>	
Aldehyde	0.05%
Residual Solvents	To pass test

**LIGHT SENSITIVE:** Keep tightly closed in light-resistant containers.

FLUSHED WITH NITROGEN

Lot No. XQ####

<sup>1</sup> American National Standards Institute

<sup>2</sup> Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs

## MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	3
Fire Hazard	0
Reactivity	1



See Section 8.

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code:	C-223
Product Name:	CHROMACLEAN(R)
Chemical Name:	No information available
Synonyms:	<b>No information available</b>
Recommended use:	No information available.
CAS #:	Mixture
RTECS #	Not available
Formula:	No information available
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Order Online At:	<a href="https://www.spectrumchemical.com">https://www.spectrumchemical.com</a>
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Regina Wachenheim (East Coast)
Contact Person:	Martin LaBenz (West Coast)

### 2. HAZARDS IDENTIFICATION

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### DANGER CORROSIVE!

The product causes burns of eyes, skin and mucous membranes

Harmful by inhalation

May cause allergic skin reaction

May cause allergic respiratory reaction

**Odor:**  
Odorless, but has a choking odor when hot.

**Physical state:**  
Liquid.

**Appearance:**  
No information available

**Color:**  
Red brown.

### OSHA Regulatory Status

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

### POTENTIAL HEALTH EFFECTS

#### Principal Routes of Exposure:

Skin. Inhalation. Ingestion.

#### Acute Potential Health Effects:

##### Skin Contact:

Severe skin irritation. Causes skin burns. May cause sensitization by skin contact. May cause allergic skin reaction.

##### Eye Contact:

Severe eye irritation. Causes eye burns.

##### Inhalation:

Harmful by inhalation. May cause chemical burns to the respiratory tract. May cause sensitization by inhalation. May cause allergic respiratory reaction.

##### Ingestion:

Causes burns. Can burn mouth, throat, and stomach. May cause metabolic acidosis.

#### Chronic Potential Health Effects:

##### Component

Sulfuric Acid  
7664-93-9 (84-85)

Water  
7732-18-5 (15-16)

Chromium Trioxide  
1333-82-0 (0.5)

##### Carcinogen Status:

A2 - Suspected Human Carcinogen by ACGIH (contained in strong inorganic acid mists  
Group 1- Carcinogenic to humans by IARC (Strong-organic-acid mists containing sulfuric acid)

Not applicable

Group 1- Carcinogenic to humans by IARC  
Known Human Carcinogen by NTP  
OSHA HCS - Carcinogens: Present

#### Target Organs:

Skin. Eyes. Respiratory system. Teeth.

#### Mutagenic Effects:

For Chromium Trioxide  
May affect genetic material  
Mutations in microorganisms  
Experiments with bacteria and/or yeast have shown mutagenic effects  
Mutagenic effects in mammalian somatic cells  
Mutagenic effects on mammalian germ cells

**Teratogenic Effects:**

For Sulfuric Acid:

Developmental effects and Teratogenicity: According to the Registry of Toxic Effects of Chemical Substances (RTECS reference - Murry et al, "Embryotoxicity of Inhaled Sulfuric Acid Aerosol in Mice and Rabbits", Journal of Environmental Science and Health, Part C, Vol. 13, pages 251-266, 1979), musculoskeletal developmental abnormalities were found in rabbits at a dose of 20 mg/m<sup>3</sup> for 7 hrs. However, REPROTOX and Shepard's Catalog of Teratogenic Agents, citing this same study, stated that inhalation of sulfuric acid fumes did not increase congenital anomalies in the offspring of treated pregnant mice or rabbits. Furthermore, the Hazard Substance Data Bank (HSDB) also stated that in a developmental toxicity study conducted under a method similar to OECD test Guideline 414 that no significant effects on mean numbers of implants/dam, live fetuses/litter or resorptions/litter were observed in mice and rabbits exposed by inhalation to sulfuric acid aerosol at 5 and 20 mg/m<sup>3</sup> during gestation and therefore could not be considered embryotoxic, or fetotoxic.

**Aggravated Medical Conditions:** No information available

See Section 11 for additional Toxicological Information

**POTENTIAL ENVIRONMENTAL EFFECTS**

No information available

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
Sulfuric Acid	7664-93-9	84-85
Water	7732-18-5	15-16
Chromium Trioxide	1333-82-0	0.5

**4. FIRST AID MEASURES****General Advice:**

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

**Skin Contact:**

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

**Eye Contact:**

Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

**Inhalation:**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Follow with Milk of Magnesia or egg whites beaten with water. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

**Notes to Physician:** Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

### Flammable Properties

<b>Flashpoint (°C/°F):</b>	No information available.
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<b>Flash Point Tested according to:</b> Not available
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<b>Lower Explosion Limit (%):</b>	No information available
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<b>Upper Explosion Limit (%):</b>	No information available
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<b>Autoignition Temperature (°C/°F):</b>	No information available
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**Suitable Extinguishing Media:** The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

**Unsuitable Extinguishing Media:** No information available.

**Hazardous Combustion Products:** No information available.

**Specific hazards:** For Sulfuric Acid: Contact with metals may evolve flammable hydrogen gas. Metal acetylides (Monocesium and Monorubidium), and carbides ignite with concentrated sulfuric acid.  
White Phosphorous + boiling Sulfuric acid or its vapor ignites on contact.  
May ignite other combustible materials.  
May cause fire when sulfuric acid is mixed with Cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous (III) oxide, and oxidizing agents such as chlorates, halogens, permanganates..  
Mixtures of sulfuric acid and any of the following can explode: p-nitrotoluene, pentasilver trihydroxydiaminophosphate, perchlorates, alcohols with strong hydrogen peroxide, ammonium tetraperoxychromate, mercuric nitrite, potassium chlorate, potassium permanganate with potassium chloride, carbides, nitro compounds, nitrates, carbides, phosphorous, iodides, picratres, fulminats, dienes, alcohols (when heated)  
Nitramide decomposes explosively on contact with concentrated sulfuric acid.  
1,3,5-Trinitrosohexahydro-1,3,5-triazine + sulfuric acid causes explosive decomposition.. Containers may explode when heated or if contaminated with water. Reaction with water may generate much heat which will increase the concentration of fumes in the air.

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

**Specific Methods:**

Water mist may be used to cool closed containers. Do not use water on material itself. Do not get water inside containers. When material is not involved in a fire, do not use water on material itself. DO NOT use combustible materials such as sawdust.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:**

Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions:**

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

**Methods for Cleaning Up:**

Neutralize with Sodium carbonate or Sodium bicarbonate. Dilute with water. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

**Handling****Technical Measures/Precautions:**

Use only in area provided with appropriate exhaust ventilation. Do not allow contact with water. Keep away from incompatible materials.

**Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

**Storage****Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. May corrode metallic surfaces. Do not store in uncoated metallic containers. Store in a segregated and approved area. Do not store near combustible materials. Store away from incompatible materials.

**Incompatible Materials:**

Oxidizing agents. Reducing agents. Organic materials. Combustible materials. Bases. Amines. Metals. Water. Acids.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Personal Protective Equipment**

**Eye protection:** Face-shield.

**Skin and body protection:** Chemical resistant protective suit. Gloves. boots.

**Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

### National occupational exposure limits

#### United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Sulfuric Acid - 7664-93-9	1 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA	0.2 mg/m <sup>3</sup> TWA thoracic fraction	None
Water - 7732-18-5	None	None	None	None
Chromium Trioxide - 1333-82-0	None	0.0002 mg/m <sup>3</sup> TWA Cr	None	None

#### Canada

Components	Alberta	British Columbia	Ontario	Quebec
Sulfuric Acid 7664-93-9	1 mg/m <sup>3</sup> TWA 3 mg/m <sup>3</sup> STEL	0.2 mg/m <sup>3</sup> TWA	0.2 mg/m <sup>3</sup> TWA thoracic	1 mg/m <sup>3</sup> TWAEV 3 mg/m <sup>3</sup> STEV
Water 7732-18-5	None	None	None	None
Chromium Trioxide 1333-82-0	None	None	None	None

#### Australia and Mexico

Components	Australia	Mexico
Sulfuric Acid 7664-93-9	3 mg/m <sup>3</sup> STEL 1 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA
Water 7732-18-5	None	None
Chromium Trioxide 1333-82-0	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES



## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid.	<b>Appearance:</b> No information available	<b>Color:</b> Red brown.
<b>Odor:</b> Odorless, but has a choking odor when hot.	<b>Taste</b> No information available	<b>Molecular/Formula weight:</b> No information available
<b>Flash point (°C):</b> No data available	<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available
<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Melting point/range(°C/°F):</b> No information available	<b>Boiling point/range(°C/°F):</b> No information available
<b>pH:</b> No information available	<b>Specific gravity:</b> 1.5-1.6 (calculated)	<b>Density (g/cm3):</b> No information available
<b>Decomposition temperature(°C/°F):</b> No information available	<b>Bulk density:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 3.37	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Miscibility:</b> No information available
<b>Solubility:</b> Soluble in Water		

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable at normal conditions
<b>Conditions to avoid:</b>	Incompatible materials. Exposure to water.
<b>Incompatible Materials:</b>	Oxidizing agents. Reducing agents. Organic materials. Combustible materials. Bases. Amines. Metals. Water. Acids.
<b>Hazardous decomposition products:</b>	Sulphur oxides.

**Possibility of Hazardous Reactions:**

Reacts violently with water  
It reacts with alcohols and amines  
Incompatible (can react explosively or dangerously) with the following: ACETIC ACID, ACRYLIC ACID, AMMONIUM HYDROXIDE, CRESOL, CUMENE, DICHLOROETHYL ETHER, ETHYLENE CYANOHYDRIN, ETHYLENEIMINE, NITRIC ACID, 2-NITROPROPANE, PROPYLENE OXIDE, SULFOLANE, VINYLIDENE CHLORIDE, DIETHYLENE GLYCOL MONOMETHYL ETHER, ETHYL ACETATE, ETHYLENE CYANOHYDRIN, ETHYLENE GLYCOL MONOETHYL ETHER ACETATE, GLYOXAL, METHYL ETHYL KETONE, dehydrating agents, organic materials, moisture (water), Acetic anhydride, Acetone, cyanohydrin, Acetone+nitric acid, Acetone + potassium dichromate, Acetonitrile, Acrolein, Acrylonitrile, Acrylonitrile+water, Alcohols + hydrogen peroxide, ally compounds such as Allyl alcohol, and Allyl Chloride, 2-Aminoethanol, Ammonium hydroxide, Ammonium triperchromate, Aniline, Bromate + metals, Bromine pentafluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Cyclopentanone oxime, chlorinates, Chlorates + metals, Chlorine trifluoride, Chlorosulfonic acid, 2-cyano-4-nitrobenzenediazonium hydrogen sulfide, Cuprous nitride, p-chloronitrobenzene, 1,5-Dinitronaphthlene + sulfur, Diisobutylene, p-dimethylaminobenzaldehyde, 1,3-Diazidobenzene, Dimethylbenzylcarbinol + hydrogen peroxide, Epichlorohydrin, Ethyl alcohol + hydrogen peroxide, Ethylene diamine, Ethylene glycol and other glycols, , Ethylenimine, Fulminates, hydrogen peroxide, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane + nitric acid, Iron, Isoprene, Lithium silicide, Mercuric nitride, Mesityl oxide, Mercury nitride, Metals (powdered), Nitromethane, Nitric acid + glycerides, p-Nitrotoluene, Pentasilver trihydroxydiaminophosphate, Perchlorates, Perchloric acid, Permanganates + benzene, 1-Phenyl-2-methylpropyl alcohol + hydrogen peroxide, Phosphorus, Phosphorus isocyanate, Picrates, Potassium tert-butoxide, Potassium chlorate, Potassium Permanganate and other permanganates, halogens, amines, Potassium Permanganate + Potassium chloride, Potassium Permanganate + water, Propiolactone (beta)-, Pyridine, Rubidium acetylene carbide, Silver permanganate, Sodium, Sodium carbonate, sodium hydroxide, Steel, styrene monomer, toluene + nitric acid, Vinyl acetate, Thallium (I) azidodithiocarbonate, Zinc chlorate, Zinc Iodide, azides, carbonates, cyanides, sulfides, sulfites, alkali hydrides, carboxylic acid anhydrides, nitriles, olefinic organics, aqueous acids, cyclopentadiene, cyanoalcohols, metal acetylides,

Evolves flammable hydrogen gas on contact with metals  
Concentrated sulfuric acid oxidizes, dehydrates, or sulfonates most organic compounds

**Polymerization:**

Hazardous polymerisation does not occur

**Corrosivity:**

For Sulfuric Acid: Extremely corrosive in presence of aluminum. Extremely corrosive in presence of copper. Extremely corrosive in the presence of stainless steel (316). Highly corrosive in the presence of stainless steel (304). Non-corrosive in the presence of glass. Minor corrosive effect on bronze. Non-corrosive to lead and mild steel. No corrosion data on brass or zinc.

**Special Remarks on Corrosivity:** No information available

**11. TOXICOLOGICAL INFORMATION**

**Acute Toxicity**

**Component Information**

*Sulfuric Acid - 7664-93-9*

**LD50/oral/rat = 2140 mg/kg Oral LD50 Rat**

**LD50/oral/mouse** = No information available  
**LD50/dermal/rat** = No information available  
**LD50/dermal/rabbit** = No information available  
**LC50/inhalation/rat** = 347 ppm 1 h  
510 mg/m<sup>3</sup> Inhalation LC50 Rat 2 h  
**LC50/inhalation/mouse** = 320 mg/m<sup>3</sup> Inhalation 2 h LC50 Mouse  
**Other LD50 or LC50information** = No information available

*Water - 7732-18-5*

**LD50/oral/rat** = > 90 mL/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rat** = No information available  
**LD50/dermal/rabbit** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50information** = No information available

*Chromium Trioxide - 1333-82-0*

**LD50/oral/rat** = 50-80 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = 127 mg/kg  
**LD50/dermal/rat** = 55 mg/kg Dermal LD50 Rat  
**LD50/dermal/rabbit** = 20 mg/kg Dermal LD50Rabbit  
**LC50/inhalation/rat** = 0.217 mg/L Inhalation LC50 Rat 4 h  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50information** = No information available

**Product Information**

**LC50/inhalation/rat** No information available  
**LC50/Inhalation/mouse** No information available  
**LD50/dermal/rabbit** No information available  
**LD50/dermal/rat** No information available  
**LD50/oral/mouse** = No information available  
**LD50/oral/rat** = No information available

**Local Effects**

**Skin irritation:** Corrosive. Severe skin irritation. Causes burns.

**Eye irritation:** Corrosive. Severe eye irritation. Causes burns. May cause irreversible eye damage.

**Inhalation:** Harmful by inhalation. Causes severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, sneezing, shortness of breath, and delayed lung edema. Can cause chemical burns (corrosive action) to the respiratory tract and mucous membranes. Inhalation may be fatal as a result of bronchospasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). Circulatory shock/collapse with clammy skin, weak and rapid pulse, shallow respiration, and scanty urine may follow. Ischemic liver and heart lesions, kidney failure may occur several hours after unchecked circulatory collapse. Circulatory shock is often the immediate cause of death. May also affect teeth(changes in teeth and supporting structures - erosion, discoloration).

**Ingestion:** May be harmful if swallowed. Causes digestive or gastrointestinal tract burns. Corrosive to the mouth, throat, and stomach. May cause permanent damage to the digestive tract. May cause perforation of the digestive tract. May cause gastritis. May cause abdominal pain. Ingestion may cause nausea, vomiting. Vomit may resemble "coffee grounds". May cause metabolic acidosis.

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

**Chronic Toxicity**

**Chronic Toxicity**

For Sulfuric Acid: Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and respiratory system/lungs(pulmonary edema, lung damage/changes in lung function with chronic bronchitis and emphysema), teeth (dental discoloration, erosion).

Skin: Prolonged or repeated skin contact may cause dermatitis.

Eyes: Conjunctivitis is also a common finding with chronic exposure.. For Chromium trioxide: Skin: Repeated or prolonged skin contact may cause allergic contact dermatitis (allergic skin reaction). May also cause slow-healing skin ulcers ("chrome sores"), particularly if skin is broken.

Eyes: Repeated or prolonged eye contact may cause conjunctivitis.

Inhalation: Repeated or prolonged inhalation may cause allergic respiratory reaction. It may cause chronic respiratory tract irritation with chronic rhinitis, hyperemia, chronic catarrh, congestion of the larynx, inflammation of the larynx, polyps of the upper respiratory tract, chronic inflammation of the lungs, emphysema, tracheitis, chronic bronchitis, bronchospasm (asthma), chronic pharyngitis, bronchopneumonia, ulceration and perforation of the nasal septum.

Ingestion: Repeated or prolonged ingestion may cause nausea, vomiting, loss of appetite, kidney damage, inflammation of the liver or even hepatitis with jaundice, leukocytosis, leukopenia, monocytosis, and eosinophilia.

**Carcinogenic effects:**

For Sulfuric Acid:

May cause cancer. However, evidence is inconclusive. Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC Group 1). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions; The ACGIH has classified "strong inorganic acid mists containing sulfuric acid" as a suspected human carcinogen (ACGIH Group A2). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions.

For Chromium Trioxide:

Carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Sulfuric Acid	Not listed	Group 1 - Monograph 54 [1992] Occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids	Present	A2 Suspected Human Carcinogen (contained in strong inorganic acid mists)	Not listed	Not listed
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Chromium Trioxide	Known Human Carcinogen Chromium hexavalent compounds	Group 1- Monograph 49 [1990] chromium[VI] Supplement 7 [1987] Monograph 23 [1980] Monograph 2 [1973]	Present	Not listed	Not listed	Not listed
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**Mutagenic Effects:** For Chromium Trioxide  
 May affect genetic material  
 Mutations in microorganisms  
 Experiments with bacteria and/or yeast have shown mutagenic effects  
 Mutagenic effects in mammalian somatic cells  
 Mutagenic effects on mammalian germ cells

**Reproductive Effects:** May cause adverse reproductive effects based on animal data. Possible risk of impaired fertility.

**Teratogenic Effects:** For Sulfuric Acid: Developmental effects and Teratogenicity: According the the Registry of Toxic Effects of Chemical Substances (RTECS reference - Murry et al, "Embryrotoxicity of Inhaled Sulfuric Acid Aerosol in Mice and Rabbits", Journal of Environmental Science and Health, Part C, Vol. 13, pages 251-266, 1979), musculoskeletal developmental abnormalities were found in rabbits at a dose of 20 mg/m<sup>3</sup> for 7 hrs. However, REPROTOX and Shepard's Catalog of Teratogenic Agents, citing this same study, stated that inhalation of sulfuric acid fumes did not increase congenital anomalies in the offspring of treated preganant mice or rabbits. Furthermore, the Hazard Substance Data Bank (HSDB) also stated that in a developmental toxicity study conducted under a method similar to OECD test Guideline 414 that no significant effects on mean numbers of implants/dam, live fetuses/liter or resorptions/litter were observed in mice and rabbits exposed by inhalation to sulfuric acid aerosol at 5 and 20 mg/m<sup>3</sup> during gestation and therefore could not be considered embryotoxic, or fetoxic..

**Target Organs:** Skin. Eyes. Respiratory system. Teeth.

## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY

**Toxicity to terrestrial and aquatic plants and animals:** Information given is based on data on the components and the ecotoxicology of similar products

**Ecotoxicity effects:** Aquatic environment.

#### Aquatic toxicity:

*Sulfuric Acid - 7664-93-9*

**Freshwater Fish Species Data:** 500 mg/L LC50 Brachydanio rerio 96 h static 1

*Chromium Trioxide - 1333-82-0*

**Freshwater Fish Species Data:** 40 mg/L LC50 Colisa fasciatus 96 h static 1

**Mobility:** No information available

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

### 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Sulfuric Acid	None	None	None	None
Water	None	None	None	None
Chromium Trioxide	None	None	None	None

### 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquids, n.o.s. (sulfuric acid)  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** Not applicable  
**Marine Pollutant:** No data available  
**ERG No:** 154  
**DOT RQ (lbs):** No information available

**Symbol(s):** G

**TDG (Canada)**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Description:** No information available

**ADR**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

**IMO / IMDG**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-A  
**MFAG:** No information available  
**Maximum Quantity:** No information available

**RID**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** 8  
**Classification Code:** No information available  
**Description:** No information available

**ICAO**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Description:** No information available

**IATA**

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**ERG Code:** 8L  
**Description:** No information available

**15. REGULATORY INFORMATION**

**International Inventories**

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Sulfuric Acid</i>	Present	Present	Present KE-32570	Present (1)-724 (1)-430	Present	Present	Present 231-639-5
<i>Water</i>	Present	Present	Present KE-35400	Not present	Present	Present	Present 231-791-2
<i>Chromium Trioxide</i>	Present R	Present	Present KE-06020	Present (1)-284	Present	Present	Present 215-607-8

**U.S. Regulations**

*Sulfuric Acid*

- Massachusetts RTK:** Present
- New Jersey RTK Hazardous Substance List:** Present
- New Jersey (EHS) List:** Present
- New Jersey - Discharge Prevention - List of Hazardous Substances:** Present
- Pennsylvania RTK:** Environmental hazard
- Pennsylvania RTK - Environmental Hazard List** Present
- Minnesota - Hazardous Substance List:** Present
- New York Release Reporting - List of Hazardous Substances:**
  - 1000 lb RQ
  - 100 lb RQ
- Louisiana Reportable Quantity List for Pollutants:** 1000lbfinal RQ  
454kgfinal RQ
- California Directors List of Hazardous Substances:** Present
- FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 184.1095

*Chromium Trioxide*

- Massachusetts RTK:** Present
- New Jersey RTK Hazardous Substance List:** Present
- Pennsylvania RTK:** Special hazardous substance
- Pennsylvania RTK - Special Hazardous Substances** Present

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**Chemicals Known to the State of California to Cause Cancer:**

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Sulfuric Acid	Listed under strong inorganic mists containing sulfuric acid	Not Listed	Not Listed	Not Listed
Water	Not Listed	Not Listed	Not Listed	Not Listed
Chromium Trioxide	carcinogen (listed as Chromium (hexavalent compounds))	Developmental toxicity (listed as Chromium (hexavalent compounds))	Male Reproductive toxicity (listed as Chromium (hexavalent compounds))	Female Reproductive toxicity (listed as Chromium (hexavalent compounds))

**CERCLA/SARA**

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>Sulfuric Acid</i>	1000 lb final RQ 454 kg final RQ	1000 lb TPQ	None	None	1.0 % de minimis concentration
<i>Water</i>	None	None	None	None	None
<i>Chromium Trioxide</i>	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Sulfuric Acid</i>	Not Applicable	Not Applicable
<i>Water</i>	Not Applicable	Not Applicable
<i>Chromium Trioxide</i>	Not Applicable	Not Applicable

**Canada****WHMIS hazard class:**

E Corrosive material  
 D1A Very toxic materials  
 D2A Very toxic materials  
 D2B Toxic materials

**Sulfuric Acid**

D1A E including &gt;51%, &amp;lt;=51%

**Water**

Uncontrolled product according to WHMIS classification criteria

**Chromium Trioxide**

C D1A D2A D2B E

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Sulfuric Acid	1 %
Chromium Trioxide	0.1 %

**Inventory**

Components	Canada (DSL)	Canada (NDSL)



Sulfuric Acid	Present	Not Listed
Water	Present	Not Listed
Chromium Trioxide	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Sulfuric Acid	Not listed	Not listed
Water	Not listed	Not listed
Chromium Trioxide	Not listed	Not listed

## EU Classification

### **R-phrase(s)**

R35 - Causes severe burns.

R45 - May cause cancer.

R62 - Possible risk of impaired fertility.

R46 - May cause heritable genetic damage.

R42/43 - May cause sensitization by inhalation and skin contact.

### **S -phrase(s)**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S30 - Never add water to this product.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 1/2 - Keep locked up and out of the reach of children.

Components	Classification	Concentration Limits:	Safety Phrases
Sulfuric Acid	C; R35	15%≤C: C; R:35 5%≤C<15%: Xi; R:36/38	S1/2 S26 S30 S45
Water		No information	
Chromium Trioxide	T; R24/25-48/23 T+; R26 C; R35 R42/43 Carc.Cat.1; R45 Muta.Cat.2; R46 N; R50-53 Repr.Cat.3; R62 O; R9	10%≤C: C; R:35 5%≤C<10%: C; R:34 1%≤C<5%: Xi; R:36/37/38	S53 S45 S60 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

None.

## 16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

**Preparation Date:** 25-Jul-2014  
**Reason for revision:** Not applicable  
**Prepared by:** Sonia Owen  
**Literature reference:** No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

# SAFETY DATA SHEET

Preparation Date: 7/23/2014

Revision Date: 7/23/2014

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

**Product code:** C-223  
**Product Name:** CHROMACLEAN(R)

### Other means of identification

**Synonyms:** No information available  
**CAS #:** Mixture  
**RTECS #** Not available  
**CI#:** Not available

### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Regina Wachenheim (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

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

Acute toxicity - Inhalation (Gases)	Category 2
Acute toxicity - Inhalation (Vapors)	Category 2
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2

### Label elements

## Danger

### Hazard statements

Fatal if inhaled  
Causes severe skin burns and eye damage  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
May cause cancer  
Suspected of damaging fertility or the unborn child



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

May be harmful if swallowed

### 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  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection  
Wash face, hands and any exposed skin thoroughly after handling  
In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves

### Precautionary Statements - Response

Specific treatment is urgent (see .? on this label)  
Immediately call a POISON CENTER or doctor/physician  
Specific treatment (see .? on this label)  
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 or doctor/physician.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.  
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

### Precautionary Statements - Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Sulfuric Acid 7664-93-9	7664-93-9	84-85	*
Water 7732-18-5	7732-18-5	15-16	*
Chromium Trioxide 1333-82-0	1333-82-0	0.5	*

### 4. FIRST AID MEASURES

#### First aid measures

##### **General Advice:**

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

##### **Skin Contact:**

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

##### **Eye Contact:**

Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

##### **Inhalation:**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

##### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Follow with Milk of Magnesia or egg whites beaten with water. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

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

##### **Symptoms**

Severe skin and eye irritation or burns. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.

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

##### **Notes to Physician:**

Treat symptomatically

#### **Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### **Suitable Extinguishing Media:**

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

##### **Unsuitable Extinguishing Media:**

No information available.

## Specific hazards arising from the chemical

### **Hazardous Combustion Products:**

No information available.

### **Specific hazards:**

For Sulfuric Acid:

Contact with metals may evolve flammable hydrogen gas  
Metal acetylides (Monocesium and Monorubidium), and  
carbides ignite with concentrated sulfuric acid.

White Phosphorous + boiling Sulfuric acid or its vapor ignites  
on contact.

May ignite other combustible materials.

May cause fire when sulfuric acid is mixed with  
Cyclopentadiene, cyclopentanone oxime, nitroaryl amines,  
hexalithium disilicide, phosphorous (III) oxide, and oxidizing  
agents such as chlorates, halogens, permanganates.

Mixtures of sulfuric acid and any of the following can  
explode: p-nitrotoluene, pentasilver  
trihydroxydiaminophosphate, perchlorates, alcohols with  
strong hydrogen peroxide, ammonium tetraperoxychromate,  
mercuric nitrite, potassium chlorate, potassium  
permanganate with potassium chloride, carbides, nitro  
compounds, nitrates, carbides, phosphorous, iodides,  
picrates, fulminates, dienes, alcohols (when heated)  
Nitramide decomposes explosively on contact with  
concentrated sulfuric acid.

1,3,5-Trinitrosohexahydro-1,3,5-triazine + sulfuric acid  
causes explosive decomposition.

Containers may explode when heated or if contaminated  
with water

Reaction with water may generate much heat which will  
increase the concentration of fumes in the air

## Special Protective Actions for Firefighters

### **Specific Methods:**

Water mist may be used to cool closed containers. Do not  
use water on material itself. Do not get water inside  
containers. When material is not involved in a fire, do not  
use water on material itself. DO NOT use combustible  
materials such as sawdust.

### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus  
pressure-demand, MSHA/NIOSH (approved or equivalent)  
and full protective gear

## **6. ACCIDENTAL RELEASE MEASURES**

### Personal precautions, protective equipment and emergency procedures

#### **Personal Precautions:**

Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch  
damaged containers or spilled material unless wearing appropriate protective clothing. Use  
personal protective equipment. Avoid contact with skin, eyes and clothing.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the  
environment. Do not let product enter drains. Do not flush into surface water or  
sanitary sewer system. Prevent entry into waterways, sewers, basements or confined  
areas.

### Methods and material for containment and cleaning up

#### **Methods for containment**

Stop leak if you can do it without risk.

**Methods for cleaning up**

Neutralize with Sodium carbonate or Sodium bicarbonate. Dilute with water. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

**Precautions for safe handling****Technical Measures/Precautions:**

Use only in area provided with appropriate exhaust ventilation. Do not allow contact with water. Keep away from incompatible materials.

**Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities****Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. May corrode metallic surfaces. Do not store in uncoated metallic containers. Store in a segregated and approved area. Do not store near combustible materials. Store away from incompatible materials.

**Incompatible Materials:**

Oxidizing agents. Reducing agents. Organic materials. Combustible materials. Bases. Amines. Metals. Water. Acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Sulfuric Acid - 7664-93-9	1 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA	0.2 mg/m <sup>3</sup> TWA thoracic fraction	None
Water - 7732-18-5	None	None	None	None
Chromium Trioxide - 1333-82-0	None	0.0002 mg/m <sup>3</sup> TWA Cr	None	None

**Canada**

Components	Alberta	British Columbia	Ontario	Quebec
Sulfuric Acid - 7664-93-9	1 mg/m <sup>3</sup> TWA 3 mg/m <sup>3</sup> STEL	0.2 mg/m <sup>3</sup> TWA	0.2 mg/m <sup>3</sup> TWA thoracic	1 mg/m <sup>3</sup> TWAEV 3 mg/m <sup>3</sup> STEV
Water - 7732-18-5	None	None	None	None
Chromium Trioxide - 1333-82-0	None	None	None	None

**Australia and Mexico**

Components	Australia	Mexico
Sulfuric Acid 7664-93-9	3 mg/m <sup>3</sup> STEL 1 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA
Water 7732-18-5	None	None
Chromium Trioxide 1333-82-0	None	None

## Appropriate engineering controls

### Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

## Individual protection measures, such as personal protective equipment

### Personal Protective Equipment

<b>Eye protection:</b>	Face-shield.
<b>Skin and body protection:</b>	Chemical resistant protective suit. Gloves. boots.
<b>Respiratory protection:</b>	Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
<b>Hygiene measures:</b>	Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid.	<b>Appearance:</b> No information available	<b>Color:</b> Red brown.
<b>Odor:</b> Odorless, but has a choking odor when hot.	<b>Taste</b> No information available	<b>Molecular/Formula weight:</b> No information available
<b>Flash point (°C):</b> No data available	<b>Flashpoint (°C/°F):</b> No information available.	<b>Flash Point Tested according to:</b> Not available
<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available	<b>Autoignition Temperature (°C/°F):</b> No information available
<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> No information available	<b>Boiling point/range(°C/°F):</b> No information available
<b>Decomposition temperature(°C/°F):</b> No information available	<b>Specific gravity:</b> 1.5-1.6 (calculated)	<b>Density (g/cm3):</b> No information available
<b>Bulk density:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available	<b>Evaporation rate:</b> No information available
<b>Vapor density:</b> 3.37	<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available
<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Viscosity:</b> No information available	<b>Miscibility:</b> No information available
<b>Solubility:</b> Soluble in Water		

## 10. STABILITY AND REACTIVITY

### Reactivity



## 10. STABILITY AND REACTIVITY

For Sulfuric Acid:

Reacts violently with water

It reacts with alcohols and amines

Incompatible (can react explosively or dangerously) with the following: ACETIC ACID, ACRYLIC ACID, AMMONIUM HYDROXIDE, CRESOL, CUMENE, DICHLOROETHYL ETHER, ETHYLENE CYANOHYDRIN, ETHYLENEIMINE, NITRIC ACID, 2-NITROPROPANE, PROPYLENE OXIDE, SULFOLANE, VINYLIDENE CHLORIDE, DIETHYLENE GLYCOL MONOMETHYL ETHER, ETHYL ACETATE, ETHYLENE CYANOHYDRIN, ETHYLENE GLYCOL MONOETHYL ETHER ACETATE, GLYOXAL, METHYL ETHYL KETONE, dehydrating agents, organic materials, moisture (water), Acetic anhydride, Acetone, cyanohydrin, Acetone+nitric acid, Acetone + potassium dichromate, Acetonitrile, Acrolein, Acrylonitrile, Acrylonitrile+water, Alcohols + hydrogen peroxide, ally compounds such as Allyl alcohol, and Allyl Chloride, 2-Aminoethanol, Ammonium hydroxide, Ammonium triperchromate, Aniline, Bromate + metals, Bromine pentafluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Cyclopentanone oxime, chlorinates, Chlorates + metals, Chlorine trifluoride, Chlorosulfonic acid, 2-cyano-4-nitrobenzenediazonium hydrogen sulfate, Cuprous nitride, p-chloronitrobenzene, 1,5-Dinitronaphthlene + sulfur, Diisobutylene, p-dimethylaminobenzaldehyde, 1,3-Diazidobenzene, Dimethylbenzylcarbinol + hydrogen peroxide, Epichlorohydrin, Ethyl alcohol + hydrogen peroxide, Ethylene diamine, Ethylene glycol and other glycols, , Ethylenimine, Fulminates, hydrogen peroxide, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane + nitric acid, Iron, Isoprene, Lithium silicide, Mercuric nitride, Mesityl oxide, Mercury nitride, Metals (powdered), Nitromethane, Nitric acid + glycerides, p-Nitrotoluene, Pentasilver trihydroxydiaminophosphate, Perchlorates, Perchloric acid, Permanganates + benzene, 1-Phenyl-2-methylpropyl alcohol + hydrogen peroxide, Phosphorus, Phosphorus isocyanate, Picrates, Potassium tert-butoxide, Potassium chlorate, Potassium Permanganate and other permanganates, halogens, amines, Potassium Permanganate + Potassium chloride, Potassium Permanganate + water, Propiolactone (beta)-, Pyridine, Rubidium acetylene carbide, Silver permanganate, Sodium, Sodium carbonate, sodium hydroxide, Steel, styrene monomer, toluene + nitric acid, Vinyl acetate, Thallium (I) azidodithiocarbonate, Zinc chlorate, Zinc iodide, azides, carbonates, cyanides, sulfides, sulfites, alkali hydrides, carboxylic acid anhydrides, nitriles, olefinic organics, aqueous acids, cyclopentadiene, cyano-alcohols, metal acetylides, Evolves flammable hydrogen gas on contact with metals  
Concentrated sulfuric acid oxidizes, dehydrates, or sulfonates most organic compounds

### Chemical stability

**Stability:** Stable at normal conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Incompatible materials. Exposure to water.

**Incompatible Materials:** Oxidizing agents. Reducing agents. Organic materials. Combustible materials. Bases. Amines. Metals. Water. Acids.

**Hazardous decomposition products:** Sulphur oxides.

### Other Information

**Corrosivity:** For Sulfuric Acid:  
Extremely corrosive in presence of aluminum  
Extremely corrosive in presence of copper  
Extremely corrosive in the presence of stainless steel (316)  
Highly corrosive in the presence of stainless steel (304)  
Non-corrosive in the presence of glass  
Minor corrosive effect on bronze  
Non-corrosive to lead and mild steel  
No corrosion data on brass or zinc

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### **Principal Routes of Exposure:**

Skin. Inhalation. Ingestion.

#### **Acute Toxicity**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	2548mg/kg
ATEmix (inhalation-gas)	206mg/l
ATEmix (inhalation-vapor)	0.8mg/l

## Component Information

### *Sulfuric Acid - 7664-93-9*

**LD50/oral/rat** = 2140 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = No information available  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = 347 ppm 1 h  
510 mg/m<sup>3</sup> Inhalation LC50 Rat 2 h  
**LC50/inhalation/mouse** = 320 mg/m<sup>3</sup> Inhalation 2 h LC50 Mouse  
**Other LD50 or LC50information** = No information available

### *Water - 7732-18-5*

**LD50/oral/rat** = > 90 mL/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = No information available  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50information** = No information available

### *Chromium Trioxide - 1333-82-0*

**LD50/oral/rat** = 50-80 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = 127 mg/kg  
**LD50/dermal/rabbit** = 20 mg/kg Dermal LD50Rabbit  
**LD50/dermal/rat** = 55 mg/kg Dermal LD50 Rat  
**LC50/inhalation/rat** = 0.217 mg/L Inhalation LC50 Rat 4 h  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50information** = No information available

## Product Information

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = No information available

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

## Symptoms

**Skin Contact:** Severe skin irritation. Causes skin burns. May cause sensitization by skin contact. May cause allergic skin reaction.

**Eye Contact:** Severe eye irritation. Causes eye burns.

**Inhalation** Fatal if inhaled. Causes severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, sneezing, shortness of breath, and delayed lung edema. Can cause chemical burns (corrosive action) to the respiratory tract and mucous membranes. Inhalation may be fatal as a result of bronchospasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). Circulatory shock/collapse with clammy skin, weak and rapid pulse, shallow respiration, and scanty urine may follow. Ischemic liver and heart lesions, kidney failure may occur several hours after unchecked circulatory collapse. Circulatory shock is often the immediate cause of death. May also affect teeth(changes in teeth and supporting structures - erosion, discoloration).

**Ingestion** May be harmful if swallowed. Causes digestive or gastrointestinal tract burns. Corrosive to the mouth, throat, and stomach. May cause permanent damage to the digestive tract. May cause perforation of the digestive tract. May cause gastritis. May cause abdominal pain. Ingestion may cause nausea, vomiting. Vomit may resemble "coffee grounds". May cause metabolic acidosis.

**Aspiration hazard** No information available

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

**Chronic Toxicity** For Sulfuric Acid:  
Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and respiratory system/lungs(pulmonary edema, lung damage/changes in lung function with chronic bronchitis and emphysema), teeth (dental discoloration, erosion).  
Skin: Prolonged or repeated skin contact may cause dermatitis.  
Eyes: Conjunctivitis is also a common finding with chronic exposure.  
For Chromium trioxide:  
Skin: Repeated or prolonged skin contact may cause allergic contact dermatitis (allergic skin reaction). May also cause slow-healing skin ulcers ("chrome sores"), particularly if skin is broken.  
Eyes: Repeated or prolonged eye contact may cause conjunctivitis.  
Inhalation: Repeated or prolonged inhalation may cause allergic respiratory reaction. It may cause chronic respiratory tract irritation with chronic rhinitis, hyperemia, chronic catarrh, congestion of the larynx, inflammation of the larynx, polyps of the upper respiratory tract, chronic inflammation of the lungs, emphysema, tracheitis, chronic bronchitis, bronchospasm (asthma), chronic pharyngitis, bronchopneumonia, ulceration and perforation of the nasal septum.  
Ingestion: Repeated or prolonged ingestion may cause nausea, vomiting, loss of appetite, kidney damage, inflammation of the liver or even hepatitis with jaundice, leukocytosis, leukopenia, monocytosis, and eosinophilia  
**Sensitization:** May cause sensitization by inhalation and skin contact

**Mutagenic Effects:** For Chromium Trioxide  
May affect genetic material  
Mutations in microorganisms  
Experiments with bacteria and/or yeast have shown mutagenic effects  
Mutagenic effects in mammalian somatic cells  
Mutagenic effects on mammalian germ cells

**Carcinogenic effects:**

For Sulfuric Acid: May cause cancer. However, evidence is inconclusive. Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC Group 1). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions; The ACGIH has classified "strong inorganic acid mists containing sulfuric acid" as a suspected human carcinogen (ACGIH Group A2). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions.

. For Chromium Trioxide: Carcinogenic.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Sulfuric Acid	A2 Suspected Human Carcinogen (contained in strong inorganic acid mists)	Group 1 - Monograph 54 [1992] Occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids	Not listed	Present	Not listed	Not listed
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Chromium Trioxide	Not listed	Group 1- Monograph 49 [1990] chromium[VI] Supplement 7 [1987] Monograph 23 [1980] Monograph 2 [1973]	Known Human Carcinogen Chromium hexavalent compounds	Present	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child

**Reproductive Effects:**

May cause adverse reproductive effects based on animal data. Possible risk of impaired fertility.

**Developmental Effects:**

May cause developmental effects based on animal data. Possible risk of harm to the unborn child.

**Teratogenic Effects:**

For Sulfuric Acid:

Developmental effects and Teratogenicity: According to the Registry of Toxic Effects of Chemical Substances (RTECS reference - Murry et al, "Embryotoxicity of Inhaled Sulfuric Acid Aerosol in Mice and Rabbits", Journal of Environmental Science and Health, Part C, Vol. 13, pages 251-266, 1979), musculoskeletal developmental abnormalities were found in rabbits at a dose of 20 mg/m<sup>3</sup> for 7 hrs. However, REPROTOX and Shepard's Catalog of Teratogenic Agents, citing this same study, stated that inhalation of sulfuric acid fumes did not increase congenital anomalies in the offspring of treated pregnant mice or rabbits. Furthermore, the Hazard Substance Data Bank (HSDB) also stated that in a developmental toxicity study conducted under a method similar to OECD test Guideline 414 that no significant effects on mean numbers of implants/dam, live fetuses/litter or resorptions/litter were observed in mice and rabbits exposed by inhalation to sulfuric acid aerosol at 5 and 20 mg/m<sup>3</sup> during gestation and therefore could not be considered embryotoxic, or fetotoxic.

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Target Organs:** Skin. Eyes. Respiratory system. Teeth.

<b>12. ECOLOGICAL INFORMATION</b>
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**Ecotoxicity****Ecotoxicity effects:** Aquatic environment.*Sulfuric Acid - 7664-93-9***Freshwater Fish Species Data:** 500 mg/L LC50 Brachydanio rerio 96 h static 1*Chromium Trioxide - 1333-82-0***Freshwater Fish Species Data:** 40 mg/L LC50 Colisa fasciatus 96 h static 1**Persistence and degradability:** No information available**Bioaccumulative potential:** No information available**Mobility:** No information available

<b>13. DISPOSAL CONSIDERATIONS</b>
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**Disposal Methods****Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Sulfuric Acid	None	None	None	None
Water	None	None	None	None
Chromium Trioxide	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquids, n.o.s. (sulfuric acid)  
**Hazard Class:** 8  
**Subsidiary Risk:** Not applicable  
**Packing Group:** II  
**Marine Pollutant:** No data available  
**ERG No:** 154  
**DOT RQ (lbs):** No information available  
**Symbol(s):** G

### TDG (Canada)

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

### ADR

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-A  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** 8  
**Packing Group:** II  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.

## 14. TRANSPORT INFORMATION

**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

### IATA

**UN-No:** UN1760  
**Proper Shipping Name:** Corrosive liquid, n.o.s.  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**ERG Code:** 8L  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Sulfuric Acid</i>	Present	Present KE-32570	Present	Present (1)-724 (1)-430	Present	Present	Present 231-639-5
<i>Water</i>	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Chromium Trioxide</i>	Present R	Present KE-06020	Present	Present (1)-284	Present	Present	Present 215-607-8

### U.S. Regulations

#### *Sulfuric Acid*

**Massachusetts RTK:** Present  
**New Jersey RTK Hazardous Substance List:** Present  
**New Jersey (EHS) List:** Present  
**New Jersey - Discharge Prevention - List of Hazardous Substances:** Present  
**Pennsylvania RTK:** Environmental hazard  
**Pennsylvania RTK - Environmental Hazard List** Present  
**Minnesota - Hazardous Substance List:** Present  
**New York Release Reporting - List of Hazardous Substances:**  
 1000 lb RQ  
 100 lb RQ  
**Louisiana Reportable Quantity List for Pollutants:** 1000lbfinal RQ  
 454kgfinal RQ  
**California Directors List of Hazardous Substances:** Present  
**FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 184.1095

#### *Chromium Trioxide*

**Massachusetts RTK:** Present  
**New Jersey RTK Hazardous Substance List:** Present  
**Pennsylvania RTK:** Special hazardous substance  
**Pennsylvania RTK - Special Hazardous Substances** Present

### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Sulfuric Acid	Listed under strong inorganic mists containing sulfuric acid	Not Listed	Not Listed	Not Listed
Water	Not Listed	Not Listed	Not Listed	Not Listed

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Chromium Trioxide	carcinogen (listed as Chromium (hexavalent compounds))	Developmental toxicity (listed as Chromium (hexavalent compounds))	Male Reproductive toxicity (listed as Chromium (hexavalent compounds))	Female Reproductive toxicity (listed as Chromium (hexavalent compounds))

#### CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Sulfuric Acid	1000 lb final RQ 454 kg final RQ	1000 lb TPQ	None	None	1.0 % de minimis concentration
Water	None	None	None	None	None
Chromium Trioxide	None	None	None	None	None

#### U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Sulfuric Acid	Not Applicable	Not Applicable
Water	Not Applicable	Not Applicable
Chromium Trioxide	Not Applicable	Not Applicable

#### Canada

##### WHMIS hazard class:

E Corrosive material  
D1A Very toxic materials  
D2A Very toxic materials  
D2B Toxic materials

##### Sulfuric Acid

D1A E including >51%, <=51%

##### Water

Uncontrolled product according to WHMIS classification criteria

##### Chromium Trioxide

C D1A D2A D2B E

##### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Sulfuric Acid	1 %
Chromium Trioxide	0.1 %

#### Inventory

Components	Canada (DSL)	Canada (NDSL)
Sulfuric Acid	Present	Not Listed
Water	Present	Not Listed
Chromium Trioxide	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Sulfuric Acid	Not listed	Not listed
Water	Not listed	Not listed
Chromium Trioxide	Not listed	Not listed



## EU Classification

### R-phrase(s)

R35 - Causes severe burns.

R45 - May cause cancer.

R62 - Possible risk of impaired fertility.

R46 - May cause heritable genetic damage.

R42/43 - May cause sensitization by inhalation and skin contact.

### S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S30 - Never add water to this product.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 1/2 - Keep locked up and out of the reach of children.

Components	Classification	Concentration Limits:	Safety Phrases
Sulfuric Acid	C; R35	15%≤C: C; R:35 5%≤C<15%: Xi; R:36/38	S1/2 S26 S30 S45
Water		No information	
Chromium Trioxide	T; R24/25-48/23 T+; R26 C; R35 R42/43 Carc.Cat.1; R45 Muta.Cat.2; R46 N; R50-53 Repr.Cat.3; R62 O; R9	10%≤C: C; R:35 5%≤C<10%: C; R:34 1%≤C<5%: Xi; R:36/37/38	S53 S45 S60 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

None.

## 16. OTHER INFORMATION

**16. OTHER INFORMATION**

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	3
Fire Hazard	0
Reactivity	1



See Section 8.

Preparation Date: 7/23/2014  
Revision Date: 7/23/2014  
Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Material Safety Data Sheet**