

## SAFETY DATA SHEET

Preparation Date: 8/18/2015

Revision Date: 10/16/2018

Revision Number: G2

### 1. IDENTIFICATION

#### Product identifier

**Product code:** C-162  
**Product Name:** CERIC SULFATE, 0.1 N SOLUTION

#### 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 Chemical Mfg. Corp  
 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:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

#### Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

|                                   |            |
|-----------------------------------|------------|
| Skin corrosion/irritation         | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

#### Label elements

**Danger**

#### **Hazard statements**

Causes severe skin burns and eye damage

**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

Not available

**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response***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 INHALED: Remove person to fresh air and keep 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

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Components    | CAS-No.    | Weight % |
|---------------|------------|----------|
| Water         | 7732-18-5  | 88-91    |
| Ceric Sulfate | 13590-82-4 | 5-7      |
| Sulfuric Acid | 7664-93-9  | 4-5      |

**4. FIRST AID MEASURES****First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. 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 or Poison Control Centre immediately.

**Eye Contact:**

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

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

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

**Symptoms** Severe skin and eye irritation or burns  
Causes digestive (gastrointestinal) tract irritation  
May cause gastrointestinal (digestive) tract burns  
Ingestion may cause vomiting and nausea  
Abdominal pain  
May cause metabolic acidosis

**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:**

If it is involved in a fire the following can be released:  
Sulfur Oxides.

**Specific hazards:**

For dilute Sulfuric acid: White Phosphorous + boiling Sulfuric acid or its vapor ignites on contact. 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, fulminates, dienes, alcohols (when heated) 1,3,5-Trinitrosohexahydro-1,3,5-triazine + sulfuric acid causes explosive decomposition. Contact with metals may evolve flammable hydrogen gas.

## Special Protective Actions for Firefighters

|   |   |
|---|---|
| <b>Specific Methods:</b>                              | No information available.   |
| <b>Special Protective Equipment for Firefighters:</b> | 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:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Prevent from entering into soil, ditches, sewers, waterways, and/or ground water. Prevent product from entering drains. Do not let this chemical enter the environment.

### 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:**

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Do not ingest. 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 away from incompatible materials. Store in a segregated and approved area.

#### **Incompatible Materials:**

Oxidizing agents  
Reducing agents  
Organic materials  
Combustible materials  
Metals  
Strong acids  
Bases

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Control parameters

### National occupational exposure limits

#### United States

| Components    | CAS-No.    | OSHA                    | NIOSH                   | ACGIH   | AIHA WEEL |
|---------------|------------|-------------------------|-------------------------|---|-----------|
| Water         | 7732-18-5  | None                    | None                    | None  | None      |
| Ceric Sulfate | 13590-82-4 | None                    | None                    | None  | None      |
| 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<br>thoracic particulate<br>matter | None      |

#### Canada

| Components    | CAS-No.    | Canada - Alberta                                    | Canada - British<br>Columbia | Canada - Ontario                      | Canada - Quebec                                       |
|---------------|------------|---|------------------------------|---------------------------------------|---|
| Water         | 7732-18-5  | None  | None                         | None                                  | None  |
| Ceric Sulfate | 13590-82-4 | None  | None                         | None                                  | None  |
| Sulfuric Acid | 7664-93-9  | 1 mg/m <sup>3</sup> TWA<br>3 mg/m <sup>3</sup> STEL | 0.2 mg/m <sup>3</sup> TWA    | 0.2 mg/m <sup>3</sup> TWA<br>thoracic | 1 mg/m <sup>3</sup> TWAEV<br>3 mg/m <sup>3</sup> STEV |

#### Australia and Mexico

| Components    | CAS-No.    | Australia   | Mexico                  |
|---------------|------------|---|-------------------------|
| Water         | 7732-18-5  | None  | None                    |
| Ceric Sulfate | 13590-82-4 | None  | None                    |
| Sulfuric Acid | 7664-93-9  | 3 mg/m <sup>3</sup> STEL<br>1 mg/m <sup>3</sup> TWA | 1 mg/m <sup>3</sup> TWA |

## Appropriate engineering controls

### Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

## Individual protection measures, such as personal protective equipment

### Personal Protective Equipment

**Eye protection:** Face-shield. or Goggles

**Skin and body protection:** Chemical resistant apron  
Gloves  
Long sleeved clothing  
If working with large quantities:  
Chemical resistant protective suit  
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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |   |  |
|---|---|--|
| <b>Physical state:</b><br>Liquid                                      | <b>Appearance:</b><br>Clear.  | <b>Color:</b><br>Yellowish.  |
| <b>Odor:</b><br>Odorless.   | <b>Taste</b><br>Astringent.   | <b>Formula:</b><br>No information available                          |
| <b>Molecular/Formula weight (g/mole):</b><br>No information available | <b>Flammability:</b><br>No information available                            | <b>Flashpoint (°C/°F):</b><br>No information available.              |
| <b>Flash Point Tested according to:</b><br>Not available              | <b>Autoignition Temperature (°C/°F):</b><br>No information available        | <b>Lower Explosion Limit (%):</b><br>No information available        |
| <b>Upper Explosion Limit (%):</b><br>No information available         | <b>Melting point/range(°C/°F):</b><br>No information available              | <b>Decomposition temperature(°C/°F):</b><br>No information available |
| <b>Boiling point/range(°C/°F):</b><br>108°C/227°F (weighted average)  | <b>Bulk density:</b><br>No information available                            | <b>Density (g/cm3):</b><br>No information available                  |
| <b>Specific gravity:</b><br>No information available                  | <b>pH:</b><br>Acidic  | <b>Vapor pressure @ 20°C (kPa):</b><br>2.3 (water)                   |
| <b>Evaporation rate:</b><br>No information available                  | <b>Vapor density:</b><br>0.7  | <b>VOC content (g/L):</b><br>No information available                |
| <b>Odor threshold (ppm):</b><br>No information available              | <b>Partition coefficient (n-octanol/water):</b><br>No information available | <b>Viscosity:</b><br>No information available                        |
| <b>Miscibility:</b><br>No information available                       | <b>Solubility:</b><br>Easily soluble in water                               |  |

## 10. STABILITY AND REACTIVITY

### Reactivity

For Sulfuric Acid:

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 under recommended storage conditions.

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

**Conditions to avoid:** Incompatible materials.

**Incompatible Materials:** Oxidizing agents  
Reducing agents  
Organic materials  
Combustible materials  
Metals  
Strong acids  
Bases

**Hazardous decomposition products:** Cerium oxides. Sulfur oxides.

### Other Information

**Corrosivity:** Extremely corrosive in presence of aluminum  
Severe corrosive effect on 304 Stainless Steel  
Corrosive in presence of stainless steel (316)  
Minor corrosive effect on bronze  
No corrosion data on brass

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

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

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

Skin. Ingestion. Inhalation.

### Acute Toxicity

#### **Component Information**

|         |           |
|---------|-----------|
| Water   |           |
| CAS-No. | 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 LC50 information** = No information available

|               |            |
|---------------|------------|
| Ceric Sulfate |            |
| CAS-No.       | 13590-82-4 |

**LD50/oral/rat** = No information available  
**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 LC50 information** = No information available

|               |           |
|---------------|-----------|
| Sulfuric Acid |           |
| CAS-No.       | 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  
 420 ppm 1 h  
 510 mg/m<sup>3</sup> Inhalation LC50 Rat 2h  
 85-103 mg/m<sup>3</sup> 1 h  
**LC50/inhalation/mouse** = 320 mg/m<sup>3</sup> 2 h  
**Other LD50 or LC50 information** = 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.

**Eye Contact:** Causes severe irritation and burns.

**Inhalation** Can cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath. May cause chemical burns (corrosive action) to the respiratory tract, spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). May also affect teeth(changes in teeth and supporting structures - erosion, discoloration).

**Ingestion** 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. 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.

**Sensitization:**

No information available.

**Mutagenic Effects:**

No information available

**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.

| Components    | CAS-No.    | IARC   | ACGIH - Carcinogens  | NTP        | OSHA HCS - Carcinogens | Australia - Notifiable Carcinogenic Substances | Australia - Prohibited Carcinogenic Substances |
|---------------|------------|--|--|------------|------------------------|--|--|
| Water         | 7732-18-5  | Not listed   | Not listed   | Not listed | Not listed             | Not listed                                     | Not listed                                     |
| Ceric Sulfate | 13590-82-4 | Not listed   | Not listed   | Not listed | Not listed             | Not listed                                     | Not listed                                     |
| Sulfuric Acid | 7664-93-9  | Group 1 - Monograph 54 [1992] occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids | A2 Suspected Human Carcinogen (contained in strong inorganic acid mists) | Not listed | 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**

No data is available

**Reproductive Effects:**

No information available

**Developmental Effects:**

No information available

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

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity effects:** Aquatic environment.

*Sulfuric Acid - 7664-93-9*

**Freshwater Fish Species Data:** 500 mg/L LC50 Brachydanio rerio 96 h static 1  
**Water Flea Data:** 29 mg/L EC50 Daphnia magna 24 h

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility:** No information available.

## 13. DISPOSAL CONSIDERATIONS

### 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. Do not re-use empty containers  
Dispose of as unused product.

| Components    | CAS-No.    | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|---------------|------------|------------------------|------------------------|------------------------|------------------------|
| Water         | 7732-18-5  | None                   | None                   | None                   | None                   |
| Ceric Sulfate | 13590-82-4 | None                   | None                   | None                   | None                   |
| Sulfuric Acid | 7664-93-9  | None                   | None                   | None                   | None                   |

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN2796  
**Proper Shipping Name:** Sulfuric acid  
**Hazard Class:** 8  
**Subsidiary Class** No information available  
**Packing group:** II  
**Emergency Response Guide Number** 157  
**Marine Pollutant** No data available

**DOT RQ (lbs):** No information available  
**Special Provisions** A3, A7, B2, B15, IB2, N6, N34, T8, TP2  
**Symbol(s):** [DOT]: (R4) - Identifies a material that is a hazardous substance that has a reportable quantity (RQ) of 1000 pounds (454 Kilograms).  
**Description:** UN2796, Sulfuric acid, 8, II

**TDG (Canada)**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulfuric acid  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Marine Pollutant** No Information available  
**Description:** UN2796, Sulfuric acid, 8, II

**ADR**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulphuric acid  
**Hazard Class:** 8  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Description:** UN2796, Sulphuric acid, 8, II

**IMO / IMDG**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulfuric acid  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Marine Pollutant** No information available  
**EMS:** F-A  
**Description** UN2796, Sulphuric acid, 8, II

**RID**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulphuric acid  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** UN2796, Sulphuric acid, 8, II

**ICAO**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulphuric acid  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** UN2796, Battery fluid, acid, 8, II

**IATA**  
**UN-No:** UN2796  
**Proper Shipping Name:** Sulphuric acid  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**ERG Code:** 8L  
**Special Provisions** No information available  
**Description:** UN2796, Battery fluid, acid, 8, II

## 15. REGULATORY INFORMATION

### International Inventories

| Components    | CAS-No.    | U.S. TSCA             | KOREA KECL          | Philippines (PICCS) | Japan ENCS         | CHINA   | Australia (AICS) | EINECS-No.           |
|---------------|------------|-----------------------|---------------------|---------------------|--------------------|---------|------------------|----------------------|
| Water         | 7732-18-5  | Present<br>ACTIV<br>E | Present<br>KE-35400 | Present             | Not present        | Present | Present          | Present<br>231-791-2 |
| Ceric Sulfate | 13590-82-4 | Present<br>ACTIV<br>E | Present<br>KE-05394 | Present             | Present<br>(1)-629 | Present | Present          | Present<br>237-029-5 |
| Sulfuric Acid | 7664-93-9  | Present<br>ACTIV<br>E | Present<br>KE-32570 | Present             | Present<br>(1)-430 | Present | Present          | Present<br>231-639-5 |

### U.S. Regulations

#### Sulfuric Acid

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 1761

New Jersey (EHS) List: 1761 500 lb TPQ

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

FDA - 21 CFR - Total Food Additives 172.560, 172.892, 173.385, 176.170, 176.180, 176.210, 177.2800, 178.1010, 179.45,

- List Sourced from EAFUS 184.1095, 73.85

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

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

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

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

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

| Components    | CAS-No.    | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|---------------|------------|------------|------------------------|----------------------------|-------------------------------|
| Water         | 7732-18-5  | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |
| Ceric Sulfate | 13590-82-4 | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |
| Sulfuric Acid | 7664-93-9  | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |

### CERCLA/SARA

| Components    | CAS-No.    | 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 de minimis |
|---------------|------------|---|---|--|---------------------------------|------------------------------------|
| Water         | 7732-18-5  | None  | None  | None   | None                            | None                               |
| Ceric Sulfate | 13590-82-4 | None  | None  | None   | None                            | None                               |
| Sulfuric Acid | 7664-93-9  | 1000 lb final RQ<br>454 kg final RQ                           | 1000 lb TPQ<br>1000 lb EPCRA RQ                     | None   | None                            | 1.0 % de minimis concentration     |

### U.S. TSCA

| Components | CAS-No. | TSCA Section 5(a)2 - Chemicals | TSCA 8(d) -Health and Safety |
|------------|---------|--------------------------------|------------------------------|
|------------|---------|--------------------------------|------------------------------|

|               |            | With Significant New Use Rules (SNURS) | Reporting      |
|---------------|------------|--|----------------|
| Water         | 7732-18-5  | Not Applicable                         | Not Applicable |
| Ceric Sulfate | 13590-82-4 | Not Applicable                         | Not Applicable |
| Sulfuric Acid | 7664-93-9  | Not Applicable                         | Not Applicable |

## Canada

### WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Component  
Water  
7732-18-5 ( 88-91 )  
Sulfuric Acid  
7664-93-9 ( 4-5 )

WHMIS 2015 Hazard Classification  
Not a dangerous product according to HPR classification criteria

Corrosive to Metals - Category 1: H290 May be corrosive to metals. (85% (30.8); potentially corrosive to metals; the supplier should be contacted for more information); Acute toxicity - Inhalation - Category 2: H330 Fatal if inhaled. (85% (30.8)); Acute toxicity - Inhalation - Category 3: H331 Toxic if inhaled. (50% (14.2N)); Health Hazard Not Otherwise Classified - Category 1: Causes severe damage to the respiratory tract (2% (0.4N)); Skin corrosion/irritation - Category 1: H314 Causes severe skin burns and eye damage. (50% (14.2N)); Skin corrosion/irritation - Category 1A: H314 Causes severe skin burns and eye damage. (2% (0.4N)); Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage. (2% (0.4N))

**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

| Components    | WHMIS Ingredient Disclosure List - |
|---------------|------------------------------------|
| Sulfuric Acid | 1 %                                |

### Inventory

| Components    | CAS-No.    | Canada (DSL) | Canada (NDSL) |
|---------------|------------|--------------|---------------|
| Water         | 7732-18-5  | Present      | Not Listed    |
| Ceric Sulfate | 13590-82-4 | Present      | Not Listed    |
| Sulfuric Acid | 7664-93-9  | Present      | Not Listed    |

| Components    | CAS-No.    | CEPA Schedule I - Toxic Substances |
|---------------|------------|------------------------------------|
| Water         | 7732-18-5  | Not listed                         |
| Ceric Sulfate | 13590-82-4 | Not listed                         |
| Sulfuric Acid | 7664-93-9  | Not listed                         |

  

| Components    | CAS-No.    | CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting |
|---------------|------------|---|
| Water         | 7732-18-5  | Not listed  |
| Ceric Sulfate | 13590-82-4 | Not listed  |
| Sulfuric Acid | 7664-93-9  | Not listed  |

### EU Classification

#### EU GHS - SV - CLP 1272/2008

| Components    | CAS-No.    | EU GHS - SV - CLP (1272/2008)  |
|---------------|------------|--|
| Water         | 7732-18-5  |  |
| Ceric Sulfate | 13590-82-4 | No information   |
| Sulfuric Acid | 7664-93-9  | Skin corrosion/irritation - Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (C >= 15 %)<br>016-020-00-8 |

|  |  |  |
|--|--|--|
|  |  | Skin corrosion/irritation - Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (C >= 15 %); Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation. (5 % <= C <15 %); Serious Eye Damage/Eye Irritation - Eye Irrit. 2: H319 Causes serious eye irritation. (5 % <= C <15 %)016-020-00-8 |
|--|--|--|

EU - CLP (1272/2008)

**R-phrase(s)**

R36/38 - Irritating to eyes and skin.

**S -phrase(s)**

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

S28 - After contact with skin, wash immediately with plenty of water

S37 - Wear suitable gloves.

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    | CAS-No.    | Classification | Concentration Limits:                    | Safety Phrases    |
|---------------|------------|----------------|--|-------------------|
| Water         | 7732-18-5  |                | No information                           |                   |
| Ceric Sulfate | 13590-82-4 |                | No information                           |                   |
| Sulfuric Acid | 7664-93-9  | C; R35         | 15%<=C C; R35<br>5%<=C<15% Xi;<br>R36/38 | S: (1/2)-26-30-45 |

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

**Indication of danger:**

Xi - Irritant.

Xi



**16. OTHER INFORMATION**

Preparation Date: 8/18/2015  
 Revision Date: 10/16/2018  
 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,

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**End of Safety Data Sheet**