Section 1 - Chemical Product and Company Identification

MSDS Name:
Silver sulfate-sulfuric acid

Catalog Numbers:
LC22760

Synonyms:
None.

Company Identification:
LabChem, Inc.
200 William Pitt Way
Pittsburgh, PA 15238

Company Phone Number:
(412) 826-5230

Emergency Phone Number:
(800) 424-9300

CHEMTREC Phone Number:
(800) 424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-93-9</td>
<td>Sulfuric acid</td>
<td>balance</td>
</tr>
<tr>
<td>10294-26-5</td>
<td>Silver sulfate</td>
<td>1</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless
Causes severe eye and skin irritation and burns. May cause severe respiratory and digestive tract irritation with possible burns. May cause cyanosis with bluish skin.
Target Organs: none known.

Potential Health Effects

Eye:
Eye contact can result in blindness; exposure to mist leads to watering, irritation.

Skin:
Skin contact may result in severe burns, blistering, pain.
**Material Safety Data Sheet**

**Silver sulfate-sulfuric acid**

**Ingestion:**  
Can cause severe burning and pain of mouth, throat, abdomen. Vomiting and diarrhea of dark blood may occur; asphyxia from throat swelling. Stomach and esopagus may become perforated.

**Inhalation:**  
At 5mg/M3 concentrations, nose and throat irritation occurs, with headache, cough, increased respiratory rate, impairment of lung to ventilate. Delayed symptoms include tight chest, fluid in lungs, cyanosis (blue color), hypotension, bronchitis or emphysema.

**Chronic:**  
Skin irritation/dermatitis, conjunctivitis and lacrimation of the eye can occur. Sulfuric acid - repeated exposure to mist may cause chronic tracheobronchitis, erosion and discoloration of teeth. May cause argyriasm as in acute health hazards. Pneumonia, gastrointestinal disturbances may occur.

### Section 4 - First Aid Measures

**Eyes:**  
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. Cover burns with loose sterile non-medicated bandages.

**Skin:**  
Get medical aid at once. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Cover burns with a dry sterile bandage (secure, not tight).

**Ingestion:**  
Do NOT induce vomiting. Get medical aid at once. Give conscious victim large quantities of water to dilute acid.

**Inhalation:**  
Get medical aid at once. Give artificial respiration if necessary. Move victim to fresh air. Maintain airway, medical personnel may administer oxygen.

**Notes to Physician:**  
Treat symptomatically and supportively.

### Section 5 - Fire Fighting Measures

**General Information:**  
Negligible fire and explosion hazard when exposed to heat or flame. Move container if possible, cool with fog or spray. Keep out of sewers and drains. Do not use water directly on material. May ignite combustible materials on contact. Water spray may be used to knock down corrosive vapors, avoid breathing vapors, keep up wind.

**Extinguishing Media:**  
Use carbon dioxide or dry chemical. For large fires flood fire with water from a distance.

**Autoignition Temperature:**  
Not applicable.

**Flash Point:**  
non-flammable

**NFPA Rating:**  
CAS# 7664-93-9: Not published.
CAS# 10294-26-5: Not published.

**Explosion Limits:**  
Lower: No information  Upper: No information
Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Place in labeled plastic containers for disposal, wash area down with water. Wear protective clothing, avoid breathing any vapors or dusts. Contain if possible, prevent run-off into drains and sewers. Absorb with suitable inert or non-reactive material such as fly ash, cement powder, fuller's (diatomaceous) earth. May be neutralized with slaked lime, limestone, or sodium bicarbonate to a pH 7.

Section 7 - Handling and Storage

Handling:
Protect from heat and incompatible materials.

Storage:
Protect from heat and incompatibles. Store in acid vault. Keep from organics, chlorates, carbides, fulminates, picrates, metals, water.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Provide local exhaust ventilation to meet OSHA exposure limits.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>1 mg/m3 TWA; 3 mg/m3 STEL</td>
<td>1 mg/m3 TWA</td>
<td>1 mg/m3 TWA;</td>
</tr>
<tr>
<td>Silver sulfate</td>
<td>None of the components are on this list.</td>
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</tr>
</tbody>
</table>

OSHA Vacated PELs
Sulfuric acid: 1 mg/m3 TWA
Sulfuric acid: 1 mg/m3 TWA

Personal Protective Equipment

Eyes:
Wear chemical goggles and a face shield.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
50mg/M3 - GMAGHiEP/HiEPF/SAF/SCBAF.
100mg/M3 - SAF:PD,PP,CF.
Escape - GMAGHiEP/SCBA. Firefighting - SCBAF:PD,PP.
(Respirator Codes: DHEW (NIOSH) PUblication No. 78-210)
Material Safety Data Sheet
Silver sulfate-sulfuric acid

Section 9 - Physical and Chemical Properties

- **Physical State:** Clear liquid
- **Color:** clear, colorless
- **Odor:** odorless
- **pH:** acidic
- **Vapor Pressure:** < 0.001 mm Hg @20°C
- **Vapor Density:** 3.4
- **Evaporation Rate:** No information found.
- **Viscosity:** viscous
- **Boiling Point:** 536°F (280.00°C)
- **Freezing/Melting Point:** 37°F (2.78°C)
- **Decomposition Temperature:** No information found.
- **Solubility in water:** Reacts.
- **Specific Gravity/Density:** 1.8
- **Molecular Formula:** mixture
- **Molecular Weight:** No information found.

Section 10 - Stability and Reactivity

**Chemical Stability:**
Stable under normal temperatures and pressures.

**Conditions to Avoid:**
Will react violently and exothermically with water and organic materials., May ignite finely divided combustible materials..

**Incompatibilities with Other Materials**
Acetone cyanohydrin, acetone and nitric acid or potassium dichromate, acrylonitrile, alcohols, hydrogen peroxides, allyl chloride, bromates, metals, bromine pentfluoride, carbides, chlorates, chloride trifluoride, cuprous nitride, ethylene cyanohydrin, fulminates, indane and nitric acid, iron, mercuric nitride, nitric acid and glycerides, p-nitrotoluene, pentasilver trihydroxydiaminophosphate, perchlorates, phosphorus isocyanate picrates, silver permanganates, sodium, sodium carbonate, toluene and nitric acid, organics, steel.

**Hazardous Decomposition Products**
Sulfur oxides (SOx), including sulfur oxide and sulfur dioxide, explosive hydrogen gas is evolved from contact with steel, other metals.

**Hazardous Polymerization**
Will not occur.

Section 11 - Toxicological Information

**RTECS:**
CAS# 7664-93-9: WS5600000.
CAS# 10294-26-5 unlisted.
Material Safety Data Sheet
Silver sulfate-sulfuric acid

LD50/LC50:
CAS# 7664-93-9:
Inhalation, mouse: LC50 = 320 mg/m3/2H
Inhalation, rat: LC50 = 510 mg/m3/2H
Oral, rat: LD50 = 2140 mg/kg.
CAS# 10294-26-5:
No information found.

Carcinogenicity:
CAS# 7664-93-9:
ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)
California: Not listed.
NIOSH: Not listed.
NTP: Not listed.
OSHA: Select carcinogen
IARC: Group 1 carcinogen
CAS# 10294-26-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:
Teratogenicity:
Reproductive:
Mutagenicity
Neurotoxicity

Section 12 - Ecological Information
Ecotoxicity:
No information found.
Environmental:
No data available.
Physical:
No data available.
Other:
None.

Section 13 - Disposal Considerations
Dispose of in accordance with federal, state, and local regulations.

Section 14 - Transport Information
US DOT
Shipping Name: Sulfuric acid
Hazard Class: 8
UN Number: UN1830
Packing Group: PG II
Material Safety Data Sheet
Silver sulfate-sulfuric acid

Section 15 - Regulatory Information

US Federal

TSCA
CAS# 7664-93-9 is listed on the TSCA Inventory.
CAS# 10294-26-5 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ)
CAS# 7664-93-9: final RQ = 1000 pounds (454 kg)

CERCLA/SARA Section 313
This material contains Sulfuric acid (CAS# 7664-93-9, balance%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous
None of the components are on this list.

US State

State Right to Know
Sulfuric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations

European/International Regulations

Canadian DSL/NDSL
CAS# 7664-93-9 is listed on Canada's DSL List.
CAS# 10294-26-5 is listed on Canada's DSL List.

Canada Ingredient Disclosure List
CAS# 7664-93-9 is listed on Canada's Ingredient Disclosure List.
CAS# 10294-26-5 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: December 22, 1999
Revision Date: September 10, 2004

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