Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>![NFPA]</td>
<td>![HMIS]</td>
<td>![Protection]</td>
</tr>
</tbody>
</table>

**Common Name/Trade Name**: Sulfuric Acid, 0.02 N

**Manufacturer**: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**Commercial Name(s)**: Not available.

**Synonym**: Not available.

**Chemical Name**: Not applicable.

**Chemical Family**: Inorganic acid. (Acid.)

**Chemical Formula**: Not applicable.

**Supplier**: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Water</td>
<td>7732-18-5</td>
<td>1</td>
<td>3</td>
<td>99.9</td>
<td></td>
</tr>
<tr>
<td>2) Sulfuric acid</td>
<td>7664-93-9</td>
<td>0.098</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**

- **Sulfuric acid**
  - **ORAL (LD50)**: Acute: 2140 mg/kg [Rat].
  - **MIST (LC50)**: Acute: 510 mg/m³ 2 hours [Rat]. 320 mg/m³ 2 hours [Mouse].

Section 3. Hazards Identification

**Potential Acute Health Effects**: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects**

- **CARCINOGENIC EFFECTS**: Classified A2 (Suspected for human.) by ACGIH [Sulfuric acid].
- **MUTAGENIC EFFECTS**: Not available.
- **TERATOGENIC EFFECTS**: Not available.
- **DEVELOPMENTAL TOXICITY**: Not available.

The substance may be toxic to lungs, mucous membranes, upper respiratory tract, skin, eyes, teeth. Repeated or prolonged exposure to the substance can produce target organs damage.

Continued on Next Page
### Section 4. First Aid Measures

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Contact</strong></td>
<td>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.</td>
</tr>
<tr>
<td><strong>Skin Contact</strong></td>
<td>In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.</td>
</tr>
<tr>
<td><strong>Serious Skin Contact</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.</td>
</tr>
<tr>
<td><strong>Serious Inhalation</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.</td>
</tr>
<tr>
<td><strong>Serious Ingestion</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Section 5. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability of the Product</td>
<td>Non-flammable.</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flash Points</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Products of Combustion</td>
<td>Not available.</td>
</tr>
<tr>
<td>Fire Hazards in Presence of Various Substances</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Explosion Hazards in Presence of Various Substances</td>
<td>Non-explosive in presence of open flames and sparks, of shocks.</td>
</tr>
<tr>
<td>Fire Fighting Media and Instructions</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Special Remarks on Fire Hazards</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Explosion Hazards</td>
<td>Mixtures of sulfuric acid and any of the following can explode: p-nitrotoluene, pentasilver trihydroxydiaminophosphosphate, perchlorates, alcohols with strong hydrogen peroxide, ammonium tetraperoxycromate, 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 decomposion. (Sulfuric acid)</td>
</tr>
</tbody>
</table>

### Section 6. Accidental Release Measures

<table>
<thead>
<tr>
<th>Spill</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Small Spill</strong></td>
<td>Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.</td>
</tr>
<tr>
<td><strong>Large Spill</strong></td>
<td>Absorb with an inert material and put the spilled material in an appropriate waste disposal. Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.</td>
</tr>
</tbody>
</table>
Section 7. Handling and Storage

Precautions
Keep container dry. Do not breathe gas/fumes/vapor/spray. Never add water to this product. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal Protection
Safety glasses. Lab coat. Gloves (impervious).

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
Sulfuric acid
TWA: 1 STEL: 3 (mg/m$^3$) [Australia] Inhalation
TWA: 1 (mg/m$^3$) from OSHA (PEL) [United States] Inhalation
TWA: 1 STEL: 3 (mg/m$^3$) from ACGIH (TLV) [United States] [1999] Inhalation
TWA: 1 (mg/m$^3$) from NIOSH [United States] Inhalation
TWA: 1 (mg/m$^3$) [United Kingdom (UK)]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance
Liquid.

Molecular Weight
Not applicable.

pH (1% soln/water)
Not available

Odor
Not available.

Taste
Not available.

Color
Clear. Colorless.

Boiling Point
The lowest known value is 100°C (212°F) (Water).

Melting Point
Not available.

Critical Temperature
Not available.

Specific Gravity
The only known value is 1 (Water = 1) (Water).

Vapor Pressure
The highest known value is 2.3 kPa (@ 20°C) (Water).

Vapor Density
The highest known value is 0.62 (Air = 1) (Water).

Volatile
Not available.

Odor Threshold
Not available.

Water/Oil Dist. Coeff.
Not available.

Ionicity (in Water)
Not available.

Dispersion Properties
See solubility in water.

Solubility
Easily soluble in cold water, hot water.

Section 10. Stability and Reactivity Data

Stability
The product is stable.

Instability Temperature
Not available.

Conditions of Instability
Incompatible materials.

Incompatibility with various substances
Slightly reactive to reactive with oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Corrosivity
Slightly corrosive in presence of aluminum, of copper, of stainless steel(304), of stainless steel(316). Non-corrosive in presence of glass.

Continued on Next Page
Special Remarks on Reactivity

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+nitrile 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 triperchlorate, Aniline, Bromate + metals, Bromine pentfluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Cyclopentanone oxide, chlorinates, Chlorates + metals, Chlorine trifluoride, Chlorosulfonic acid, 2-cyano-4-nitrobenzenediazonium hydrogen sulfate, Cuprous nitride, p-chloronitrobenzene, 1,5-Dinitrophtthlene + sulfur, Diisobutylen, p-dimethylaminobenzaldehyde, 1,3-Diazidobenzenes, Dimethylbenzylcarbinol + hydrogen peroxide, Epichlorohydrin, Ethyl alcohol + hydrogen peroxide. Ethylene diamine, Ethylene glycol and other glycols, Ethyleneimine, Fulminates, hydrogen peroxide, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane + nitrile acid, Iron, Isoprene, Lithium silicate, Mercuric nitride, Merse 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 chloride, Potassium Permanganate and other permanganates, halogens, amines, Potassium Permanganate + water, Propiolactone (beta)-, Pyridine, Rubidium acetylene carbide, Silver permanganate, Sodium, Sodium carbonate, sodium hydroxide, Steel, styrene monomer, tolune + nitrile acid, Vinyl acetate, Thalium (I) azidodiocarbonate, Zinc chloride, Zinc iodide, azides, carbonates, cyanides, sulfides, sulfites, alkali hydrides, carboxylic acid anhydrides, nitriles, olefinic organics, aqueous acids, cyclopentadiene, cyano-alcohols, metal acetylides, Hydrogen gas is generated by the action of the acid on most metals (i.e. lead, copper, tin, zinc, aluminum, etc.), Concentrated sulfuric acid oxidizes, dehydrates, or sulfonates most organic compounds.

(Sulfuric acid)

Section 11. Toxicological Information

Routes of Entry

Absorbed through skin. Eye contact. Ingestion.

Toxicity to Animals

LD50: Not available.
LC50: Not available.

Chronic Effects on Humans

CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH [Sulfuric acid]. Contains material which may cause damage to the following organs: lungs, mucous membranes, upper respiratory tract, skin, eyes, teeth.

Other Toxic Effects on Humans

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals

Not available.

Special Remarks on Chronic Effects on Humans

Reproductive effects: May cause adverse reproductive effects based on animal data. Developmental abnormalities (musculoskeletal) in rabbits at a dose of 20 mg/m3 for 7 hrs. (RTECS) Teratogenicity: neither embryotoxict, fetotoxic, nor teratogenous in mice or rabbits at inhaled doses producing some maternal toxicity. 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 category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions. (Sulfuric acid)

(Sulfuric acid)

Special Remarks on other Toxic Effects on Humans

Acute Potential Health Effects:
Skin: May cause skin irritation.
Eyes: May cause eye irritation.
Inhalation: Inhalation of mist or vapor may cause respiratory tract irritation.
Ingestion: May cause digestive/gastrointestinal tract irritation, nausea, vomiting, diarrhea.

Chronic Potential Health Effects:
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, an allergic skin reaction. Eyes: Conjunctivitis is also a common finding with chronic exposure.
Section 12. Ecological Information

Ecotoxicity
Not available.

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
Not a DOT controlled material (United States).

Identification
Not applicable.

Special Provisions for Transport
Not applicable.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
Illinois toxic substances disclosure to employee act: Sulfuric acid
New York release reporting list: Sulfuric acid
Rhode Island RTK hazardous substances: Sulfuric acid
Pennsylvania RTK: Sulfuric acid
Minnesota: Sulfuric acid
Massachusetts RTK: Sulfuric acid
New Jersey: Sulfuric acid
California Director's List of Hazardous Substances: Sulfuric acid
TSCA 8(b) inventory: Water; Sulfuric acid
SARA 302/304/311/312 extremely hazardous substances: Sulfuric acid
CERCLA: Hazardous substances.: Sulfuric acid: 1000 lbs. (453.6 kg);

California Proposition 65
Warnings
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations
Not available

Other Classifications
WHMIS (Canada) Not controlled under WHMIS (Canada).
DSCL (EEC) This product is not classified according to the EU regulations.

HMIS (U.S.A.)
- Health Hazard 1
- Fire Hazard 0
- Reactivity 0
- Personal Protection B

National Fire Protection Association (U.S.A.)
- Flammability 0
- Reactivity 0
- Specific hazard

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Protective Equipment

Gloves (impervious).

Lab coat.

Not applicable.

Safety glasses.

Section 16. Other Information

| MSDS Code | S605S |
| References | Not available. |
| Other Special Considerations | Not available. |

Validated by Sonia Owen on 4/1/2010.  
Verified by Sonia Owen. 

CALL (310) 516-8000

Notice to Reader

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. 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 Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.