1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfuric Acid ACS

Synonyms/Generic Names: Battery Acid, Dihydrogen Sulfate, Oil of Vitriol

Product Number: 5675

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

Hazard Not Otherwise Classified (HNOC): None

Signal Words: Danger

Pictograms:

GHS Classification:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion</td>
<td>1A</td>
</tr>
<tr>
<td>Serious eye damage</td>
<td>1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>3</td>
</tr>
</tbody>
</table>

GHS Label Elements, including precautionary statements:

Hazard Statements:

- H314 Causes severe skin burns and eye damage.
- H402 Harmful to aquatic life.

Precautionary Statements:

- P260 Do not breathe dusts or mists.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
Potential Health Effects

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Causes severe eye burns.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful if absorbed through skin. Causes skin burns.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>

NFPA Ratings

- Health: 3
- Flammability: 0
- Reactivity: 2

HMIS Ratings

- Health: 3
- Fire: 0
- Reactivity: 2

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight %</th>
<th>CAS #</th>
<th>EINECS# / ELINCS#</th>
<th>Formula</th>
<th>Molecular Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric Acid</td>
<td>95-98</td>
<td>7664-93-9</td>
<td>231-939-5</td>
<td>H₂SO₄</td>
<td>98.08 g/mol</td>
</tr>
<tr>
<td>Water</td>
<td>Balance</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>H₂O</td>
<td>18.00 g/mol</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

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

5. FIRE-FIGHTING MEASURES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable (and unsuitable) extinguishing media</td>
<td>Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.</td>
</tr>
<tr>
<td>Special protective equipment and precautions for firefighters</td>
<td>Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.</td>
</tr>
<tr>
<td>Specific hazards arising from the chemical</td>
<td>Emits toxic fumes (sulfur oxides, hydrogen sulfide gas) under fire conditions. (See also Stability and Reactivity section).</td>
</tr>
</tbody>
</table>
6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. |
| Environmental precautions | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |
| Methods and materials for containment and cleaning up | Prevent spillage from entering drains. Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limits</th>
<th>Basis</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric Acid</td>
<td>0.2 mg/m³</td>
<td>TLV</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³</td>
<td>PEL</td>
<td>OSHA</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³</td>
<td>REL</td>
<td>NIOSH</td>
</tr>
<tr>
<td></td>
<td>15 mg/m³</td>
<td>IDLH</td>
<td>OSHA</td>
</tr>
</tbody>
</table>

TWA: Time Weighted Average over 8 hours of work.  
TLV: Threshold Limit Value over 8 hours of work.  
REL: Recommended Exposure Limit  
PEL: Permissible Exposure Limit  
STEL: Short Term Exposure Limit during x minutes.  
IDLH: Immediately Dangerous to Life or Health  
WEEL: Workplace Environmental Exposure Levels  
CEIL: Ceiling

Personal Protection

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Wear chemical safety glasses or goggles, and face shield.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.</td>
</tr>
<tr>
<td>Skin</td>
<td>Wear nitrile or rubber gloves, and full body suit.</td>
</tr>
<tr>
<td>Other</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (physical state, color, etc.)</td>
<td>Clear, colorless liquid.</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH</td>
<td>1.2 at 5g/L</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>3°C (37°F)</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>290°C (554°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not Flammable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Flammable</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limit</td>
<td>Not Explosive</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>1.33 hPa (1.00 mmHg) at 145.8°C (294.4°F)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>3.39</td>
</tr>
<tr>
<td>Density</td>
<td>1.84</td>
</tr>
<tr>
<td>Solubility (ies)</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not Available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Moisture.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Bases, halides, organic material, carbides, chlorates, fulminates, nitrates, picrates, cyanides, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorus (III) oxide, powdered metals.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Sulfur oxides, hydrogen sulfide gas.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Not Available</td>
</tr>
<tr>
<td>Eyes</td>
<td>Not Available</td>
</tr>
<tr>
<td>Respiratory</td>
<td>LD50 – Rat – 510 mg/m³ – 2h</td>
</tr>
<tr>
<td>Ingestion</td>
<td>LD50 – Rat – 2,140 mg/kg</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
</tr>
<tr>
<td>IARC</td>
<td>1: Carcinogenic to humans (sulfuric acid aerosol).</td>
</tr>
<tr>
<td>ACGIH</td>
<td>A2: Suspected human carcinogen (sulfuric acid aerosol).</td>
</tr>
<tr>
<td>NTP</td>
<td>No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.</td>
</tr>
<tr>
<td>OSHA</td>
<td>No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.</td>
</tr>
<tr>
<td>Signs &amp; Symptoms of Exposure</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Burning, itching, redness, inflammation upon exposed tissue.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Eye burns, watering eyes.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Burning, choking, coughing, shortness of breath.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Nausea, vomiting, diarrhea, burning, severe pain.</td>
</tr>
</tbody>
</table>
Chronic Toxicity | May cause bleeding of nose and gums, nasal and oral mucosal ulceration, conjunctivitis, yellowing of teeth and erosion of tooth enamel.
---|---
Teratogenicity | Not Available
Mutagenicity | Not Available
Embryotoxicity | Not Available
Target Organ(s) | Teeth, Lungs
Reproductive Toxicity | Not Available
Respiratory/Skin Sensitization | Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Aquatic Vertebrate</th>
<th>LC50 – Gambusia affinis – 42 mg/L – 96h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Invertebrate</td>
<td>EC50 - Daphnia magna (Water flea) - 29 mg/l - 24 h</td>
</tr>
<tr>
<td>Terrestrial</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Persistence and Degradability | Not Available
Bioaccumulative Potential | Does not accumulate.
Mobility in Soil | Not Available
PBT and vPvB Assessment | Not Available
Other Adverse Effects | Not Available

13. DISPOSAL CONSIDERATIONS

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

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

14. TRANSPORTATION INFORMATION

| US DOT | UN1830, Sulfuric acid, 8, pg II |
| TDG | UN1830, SULFURIC ACID, 8, PG II |
| IMDG | UN1830, SULFURIC ACID, 8, PG II |
| Marine Pollutant | No |
| IATA/ICAO | UN1830, Sulfuric acid, 8, pg II |

15. REGULATORY INFORMATION

<p>| TSCA Inventory Status | All ingredients are listed on the TSCA Active inventory. |
| DSL / NDSL | All ingredients are listed on the DSL inventory. |
| California Proposition 65 | Not Listed |
| Rhode Island: Hazardous Substance List | Listed: Sulfuric Acid |</p>
<table>
<thead>
<tr>
<th>Massachusetts: Toxic or Hazardous Substance List, Right to Know</th>
<th>Not Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania: Hazardous Substance List</td>
<td>Listed: Sulfuric Acid</td>
</tr>
<tr>
<td>New Jersey: Right to Know Hazardous Substance List</td>
<td>Listed: Sulfuric Acid</td>
</tr>
<tr>
<td>SARA 302</td>
<td>Listed: Sulfuric Acid</td>
</tr>
<tr>
<td>SARA 304</td>
<td>Listed: Sulfuric Acid</td>
</tr>
<tr>
<td>SARA 311</td>
<td>Acute Health Hazard.</td>
</tr>
<tr>
<td>SARA 312</td>
<td>Acute Health Hazard.</td>
</tr>
<tr>
<td>SARA 313</td>
<td>Listed: Sulfuric Acid (aerosol forms only)</td>
</tr>
<tr>
<td>WHMIS Canada</td>
<td>Class D1A: Poisonous and infectious material – Immediate and serious effects – Very toxic. Class E: Corrosive material.</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>02/15/2013</td>
</tr>
<tr>
<td>Revision 1</td>
<td>01/20/2015</td>
</tr>
<tr>
<td>Revision 2</td>
<td>01/02/2017</td>
</tr>
<tr>
<td>Revision 3</td>
<td>12/03/2021</td>
</tr>
</tbody>
</table>

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