1. Identification

Product identifier: - SULFURIC ACID 1-51%

Other means of identification

SDS number: 000100000005

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number: For emergency assistance involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) Identification

Hazard classification

Health hazards
Skin corrosion/irritation Category 1A
Serious eye damage/eye irritation Category 1
Carcinogenicity Category 1A

Environmental hazards
Acute hazards to the aquatic environment Category 3

Label elements

Hazard symbol

\[ Image of hazard symbols \]
Signal word  Danger

Hazard statement  Corrosive.
Harmful or fatal if swallowed.
Causes severe skin burns and eye damage.
May be corrosive to metals.
May cause cancer.
Harmful to aquatic life.

Precautionary statement

Prevention  Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response  IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.

Storage  Store in a closed container. Store in a well-ventilated place. Store in a dry place. Store locked up.

Disposal  Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification

None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td>7732-18-5</td>
<td>&gt;=49 - &lt;=99%</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td></td>
<td>7664-93-9</td>
<td>&gt;=1 - &lt;=51%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Call a physician or poison control center immediately. DO NOT induce vomiting. Get medical attention immediately. Never give liquid to an unconscious person.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

No data available.

Indication of immediate medical attention and special treatment needed

No data available.

5. Fire-fighting measures

General fire hazards: Material reacts with water.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Do not use water as an extinguisher. Use: Carbon dioxide or dry powder.
 Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Material reacts with water.

Special protective equipment and precautions for firefighters: No unusual fire or explosion hazards noted.

Special fire fighting procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.

Methods and material for containment and cleaning up: Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Store away from incompatible materials. Use only with adequate ventilation. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a well-ventilated place.
8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric Acid - Thoracic fraction.</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>US. ACGIH Threshold Limit Values (03 2013)</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>REL</td>
<td>1 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>PEL</td>
<td></td>
<td>1 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>1 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>1 mg/m³</td>
<td>US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>TWA PEL</td>
<td></td>
<td>0.1 mg/m³</td>
<td>US. California Code of Regulations, Title 8, Section 5155, Airborne Contaminants (02 2012)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>3 mg/m³</td>
<td>US. California Code of Regulations, Title 8, Section 5155, Airborne Contaminants (02 2012)</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Adequate ventilation should be provided so that exposure limits are not exceeded. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

General information:
Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Practice good housekeeping. Provide eyewash station and safety shower.

Eye/face protection:
Use safety goggles and face shield in case of splash risk. Wear approved safety goggles.

Skin protection
Hand protection:
Wear chemical-resistant gloves. Contact glove manufacturer for specific information. Wear necessary protective equipment.

Other:
No data available.
**Respiratory protection:** Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**Hygiene measures:** Do not eat, drink or smoke when using the product. Observe good industrial hygiene practices.

### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>No data available.</td>
</tr>
<tr>
<td>Color</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>1</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-32 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>276 °C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper/lower limit on flammability or explosive limits</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

#### Flammability limit - upper (%):
- No data available.

#### Flammability limit - lower (%):
- No data available.

#### Explosive limit - upper (%):
- No data available.

#### Explosive limit - lower (%):
- No data available.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density: No data available.

Solubility(ies):

- **Solubility in water:** No data available.
- **Solubility (other):** No data available.

Partition coefficient (n-octanol/water): No data available.

**Auto-ignition temperature:** No data available.

**Decomposition temperature:** No data available.

**Viscosity:** No data available.
10. Stability and reactivity

Reactivity: No data available.
Chemical stability: No data available.
Possibility of hazardous reactions: Material is stable under normal conditions.
Conditions to avoid: No data available.
Hazardous decomposition products: No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix (): 2,140 mg/kg

Dermal
Product: No data available.

Inhalation
Product: No data available.

Specified substance(s):
Sulfuric Acid

Repeated dose toxicity
Product: LC 50 (Rat, ): 375 mg/m3 (, No) 2 (reliable with restrictions)

Skin corrosion/irritation
Product: No data available.

Serious eye damage/eye irritation
Product: No data available.

Respiratory or skin sensitization
Product: No data available.

Carcinogenicity
Product: No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Sulfuric Acid Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:
Sulfuric Acid Known To Be Human Carcinogen.

No carcinogenic components identified

Germ cell mutagenicity
In vitro
  Product: No data available.
In vivo
  Product: No data available.

Reproductive toxicity
Product: No data available.

Specific target organ toxicity - single exposure
Product: No data available.

Specific target organ toxicity - repeated exposure
Product: No data available.

Aspiration hazard
Product: No data available.
Other effects: No data available.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
  Fish
    Product: No data available.
  Specified substance(s):
    Sulfuric Acid
    LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 42 mg/l Mortality
Aquatic invertebrates
  Product: No data available.

Chronic hazards to the aquatic environment:
  Fish
    Product: No data available.
  Aquatic invertebrates
    Product: No data available.
  Toxicity to Aquatic Plants

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Product: No data available.

Persistence and degradability

Biodegradation
Product: No data available.

BOD/COD ratio
Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)
Product: No data available.

Partition coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility in soil:
No data available.

Known or predicted distribution to environmental compartments
Water
No data available.

Sulphuric acid
No data available.

Known or predicted distribution to environmental compartments
Sulphuric acid
No data available.

13. Disposal considerations

Disposal instructions: All waste must be handled in accordance with Waste Act (No. 185/2001 Coll.), as amended, and related regulations, as amended.

Contaminated packaging: No data available.

14. Transport information

DOT
UN number: UN 2796
UN proper shipping name: Sulfuric acid
Transport hazard class(es)
Class: 8
Label(s): 8
Packing group: II
Marine Pollutant: Not regulated.

Special precautions for user: -

15. Regulatory information
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
- Sulfuric Acid Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)
- Hazard categories Not listed.
  - SARA 302 Extremely hazardous substance
    - Chemical Identity Sulfuric Acid
      - RQ 1000 lbs.
      - Threshold Planning Quantity 1000 lbs.
  - SARA 304 Emergency release notification
    - Chemical Identity Sulfuric Acid
      - RQ 1000 lbs.
  - SARA 311/312 Hazardous chemical
    - Chemical Identity Sulfuric Acid
      - Threshold Planning Quantity 500 lbs
  - SARA 313 (TRI reporting)

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
- Sulfuric Acid Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
- Sulfuric Acid Threshold quantity: 1000 lbs.

US state regulations
- US. California Proposition 65
  - Sulfuric Acid Carcinogenic.
  - Sulfuric Acid Carcinogenic.
- US. New Jersey Worker and Community Right-to-Know Act
  - Sulfuric Acid Listed
- US. Massachusetts RTK - Substance List
  - Sulfuric Acid Listed
- US. Pennsylvania RTK - Hazardous Substances
  - Sulfuric Acid Listed
- US. Rhode Island RTK
  - Sulfuric Acid Listed
Inventory Status:
- Australia AICS: Not in compliance with the inventory.
- Canada DSL Inventory List: Not in compliance with the inventory.
- EU EINECS List: Not in compliance with the inventory.
- EU ELINCS List: Not in compliance with the inventory.
- Japan (ENCS) List: Not in compliance with the inventory.
- EU No Longer Polymers List: Not in compliance with the inventory.
- China Inv. Existing Chemical Substances: Not in compliance with the inventory.
- Korea Existing Chemicals Inv. (KECI): Not in compliance with the inventory.
- Canada NDSL Inventory: Not in compliance with the inventory.
- Philippines PICCS: Not in compliance with the inventory.
- New Zealand Inventory of Chemicals: Not in compliance with the inventory.
- Japan ISHL Listing: Not in compliance with the inventory.
- Japan Pharmacopoeia Listing: Not in compliance with the inventory.
- US TSCA Inventory: On or in compliance with the inventory.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

<table>
<thead>
<tr>
<th>Health</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION: K - Hood, Gloves, Protective Suit & Boots

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID

| Flammability | 3 |
| Health | 2 |
| Reactivity | W |

Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
W: Water-reactive

Issue date: 05/08/2015
Revision date: No data available.
Version #: 1.8
Further information: No data available.

SDS_US - 000100000005
Univar USA Inc Material Safety Data Sheet

For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

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