Sulfuric Acid 93%
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 11/13/2019  Revision date: 11/13/2019  Version: 1.0

SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: Sulfuric Acid 93%
Product code: M16020

1.2. Recommended use and restrictions on use
Use of the substance/mixture: Industrial use

1.3. Supplier
JR Simplot Company
P.O. Box 70013
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number
Emergency number: CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS-US classification
- Corrosive to metals, Category 1
- Skin corrosion/irritation, Category 1A
- Serious eye damage/eye irritation, Category 1
- Carcinogenicity, Category 1A
- Hazardous to the aquatic environment — Acute Hazard, Category 3

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling
Hazard pictograms (GHS US):

Signal word (GHS US): Danger
Hazard statements (GHS US):
- H290 - May be corrosive to metals.
- H314 - Causes severe skin burns and eye damage.
- H318 - Causes serious eye damage.
- H350 - May cause cancer (Inhalation).
- H402 - Harmful to aquatic life

Precautionary statements (GHS US):
- P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P234 - Keep only in original container.
P260 - Do not inhale mist, spray, or vapours.
P264 - Wash any exposed skin, hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P284 - [In case of inadequate ventilation] wear appropriate respiratory protection.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 - Immediately call a doctor, a POISON CENTER.
P320 - Specific treatment is urgent (see supplemental first aid instruction on this label).
P321 - Specific treatment (see supplemental first aid instruction on this label).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
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P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container to ...in accordance with local/regional/national regulations

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid*</td>
<td>(CAS No.) 7664-93-9</td>
<td>93</td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td>Water</td>
<td>(CAS No.) 7732-18-5</td>
<td>7</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

*Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact : Immediately call a POISON CENTER/doctor. Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact : Immediately call a POISON CENTER/doctor. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)
Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
Symptoms/effects : Causes severe skin burns and eye damage.
Symptoms/effects after skin contact : Burns.
Symptoms/effects after eye contact : Serious damage to eyes.
Symptoms/effects after ingestion : Burns.

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical
No additional information available

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures: Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment: Collect spillage.

Methods for cleaning up: Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid contact during pregnancy/while nursing. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

Hygiene measures: Wash hands, forearms and face thoroughly after handling. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Comply with applicable regulations.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Keep container closed when not in use. Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight. Metals.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Sulfuric Acid 93%</th>
<th>ACGIH TWA (mg/m³)</th>
<th>0.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>0.0498 ppm</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>1</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>0.25</td>
</tr>
</tbody>
</table>

sulfuric acid (7664-93-9)

Not applicable
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8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Materials for protective clothing:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent resistance:</td>
<td>Chlorinated polyethylene, Polyvinylchloride (PVC), Viton</td>
</tr>
<tr>
<td>Good resistance:</td>
<td>neoprene/butyl rubber, Neoprene/viton®</td>
</tr>
<tr>
<td>Poor resistance:</td>
<td>Butyl rubber, Neoprene, Nitrile rubber, Tyvek®</td>
</tr>
</tbody>
</table>

Hand protection:
Protective gloves made of PVC. A face shield is required when cleaning equipment

Eye protection:
Chemical goggles or face shield. Safety glasses

Skin and body protection:
Wear suitable protective clothing

Type
apron, Chemically resistant protective gloves, Face shield, Goggles

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. [In case of inadequate ventilation] wear respiratory protection.

<table>
<thead>
<tr>
<th>Device</th>
<th>Filter type</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full face mask, Powered Air-Purifying Respirator (PAPR)</td>
<td>Gas/vapour filter</td>
<td>Gas protection, If conc. in air &gt; exposure limit, Mist formation, Vapour protection</td>
</tr>
<tr>
<td>Supplied-Air Respirator (SAR), Full face mask, Self-contained breathing apparatus (SCBA)</td>
<td>Gas/vapour filter</td>
<td>Gas protection, Long term exposure</td>
</tr>
</tbody>
</table>

Personal protective equipment symbol(s):

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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Melting point: Not applicable
Freezing point: No data available
Boiling point: No data available
Flash point: No data available
Relative evaporation rate (butylacetate=1): No data available
Flammability (solid, gas): Non flammable.
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: No data available
Solubility: No data available
Log Pow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive limits: No data available
Explosive properties: No data available
Oxidising properties: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Thermal decomposition generates: Corrosive vapours.

10.2. Chemical stability
Stable. Not established.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

<table>
<thead>
<tr>
<th>Sulfuric Acid 93%</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
</tr>
<tr>
<td>ATE US (vapours)</td>
</tr>
<tr>
<td>ATE US (dust,mist)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes serious eye damage.
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: May cause cancer (Inhalation).
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<table>
<thead>
<tr>
<th>Compound</th>
<th>IARC group</th>
<th>National Toxicology Program (NTP) Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid (7664-93-9)</td>
<td>1 - Carcinogenic to humans</td>
<td>Known Human Carcinogens</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**: Not classified

**STOT-single exposure**: Not classified

**STOT-repeated exposure**: Not classified

**Aspiration hazard**: Not classified

**Viscosity, kinematic**: No data available

**Potential adverse human health effects and symptoms**: Based on available data, the classification criteria are not met.

**Symptoms/effects**: Causes severe skin burns and eye damage.

**Symptoms/effects after skin contact**: Burns.

**Symptoms/effects after eye contact**: Serious damage to eyes.

**Symptoms/effects after ingestion**: Burns.

**SECTION 12: Ecological information**

### 12.1. Toxicity

**Ecology - general**: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Harmful to aquatic life.

**Sulfuric Acid 93%**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>42 - 500 mg/l</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>28 - 88 mg/l</td>
</tr>
</tbody>
</table>

**sulfuric acid (7664-93-9)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>42 mg/l (96 h; Gambusia affinis)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>29 mg/l (24 h; Daphnia magna)</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>49 mg/l (48 h; Lepomis macrochirus)</td>
</tr>
<tr>
<td>TLM fish 1</td>
<td>42 mg/l (96 h; Gambusia affinis)</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms</td>
<td>6900 mg/l (24 h; Pseudomonas fluorescens)</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

**Sulfuric Acid 93%**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

**sulfuric acid (7664-93-9)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable. No (test)data on mobility of the components available. Not established.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**Sulfuric Acid 93%**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

**sulfuric acid (7664-93-9)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-2.2 (Estimated value)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Bioaccumulation: not applicable. Not established.</td>
</tr>
</tbody>
</table>

**Water (7732-18-5)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Not established.</td>
</tr>
</tbody>
</table>
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12.4. Mobility in soil
No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1830 Sulfuric acid, 8, II

UN-No.(DOT) : UN1830

Proper Shipping Name (DOT) : Sulfuric acid

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Special Provisions (49 CFR 172.102) : A3 - For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packagings.

A7 - Steel packagings must be corrosion-resistant or have protection against corrosion.

B3 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized.

B84 - Bottom outlets are prohibited on tank car tanks transporting sulfuric acid in concentrations over 65.25 percent.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154
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DOT Quantity Limitations Passenger aircraft/rail: 1 L
DOT Quantity Limitations Cargo aircraft only: 30 L
DOT Vessel Stowage Location: C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel.
Transport/Additional information: 14 - For metal drums, stowage permitted under deck on cargo vessels
Other information: No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Transport document description (IMDG): UN 1830 SULPHURIC ACID, 8, II
UN-No. (IMDG): 1830
Proper Shipping Name (IMDG): SULPHURIC ACID
Class (IMDG): 8 - Corrosive substances
Packing group (IMDG): II - substances presenting medium danger
Limited quantities (IMDG): 1 L

Air transport

Transport document description (IATA): UN 1830 Sulphuric acid, 8, II
UN-No. (IATA): 1830
Proper Shipping Name (IATA): Sulphuric acid
Class (IATA): 8 - Corrosives
Packing group (IATA): II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Sulfuric Acid 93%
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid</td>
<td>7664-93-9</td>
<td>93%</td>
</tr>
</tbody>
</table>

sulfuric acid (7664-93-9)

CERCLA RQ: 1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists): 1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ): 1000 lb

15.2. International regulations

CANADA

sulfuric acid (7664-93-9)
Listed on the Canadian DSL (Domestic Substances List)

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available
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### National regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid (7664-93-9)</td>
<td>Listed as carcinogen on NTP (National Toxicology Program)</td>
</tr>
</tbody>
</table>

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>sulfuric acid (7664-93-9)</td>
<td>U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>

## SECTION 16: Other information

Revision date: 11/13/2019


Other information: None.

Full text of H-statements:

<table>
<thead>
<tr>
<th>H-statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H290</td>
<td>May be corrosive to metals.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.