# Sulfuric Acid, 1.0N (0.5M)

Safety Data Sheet

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## SECTION 1: Identification

### 1.1. Identification

Product form : Mixtures

Product name : Sulfuric Acid, 1.0N (0.5M)

Product code : LC25770

### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : For laboratory and manufacturing use only.

### 1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

| | | |
|---|---|---|
| Skin corrosion/irritation, Category 1B | H314 | Causes severe skin burns and eye damage. |
| Serious eye damage/eye irritation, Category 1 | H318 | Causes serious eye damage. |

Full text of H statements : see section 16

### 2.2. GHS Label elements, including precautionary statements

**GHS-US labelling**

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage.

Precautionary statements (GHS-US) : P260 - Do not breathe mist, vapours, spray.
P264 - Wash exposed skin thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face 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 POISON CENTER/doctor
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to comply with local, state and federal regulations

### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Product identifier | % | GHS-US classification |
|---|---|---|---|
| Water | (CAS-No.) 7732-18-5 | 95.24 | Not classified |
| Sulfuric Acid, ACS | (CAS-No.) 7664-93-9 | 4.76 | Skin Corr. 1A, H314<br>Eye Dam. 1, H318 |

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).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

### 4.2. Most important symptoms and effects (acute and delayed)

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

Symptoms/effects after inhalation : Corrosion of the upper respiratory tract.

Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

### 4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Reactivity : Thermal decomposition generates : Corrosive vapours.

### 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.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Gloves. Protective clothing. Head/neck protection.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

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

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : 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. Do not breathe mist, vapours, spray. Avoid contact during pregnancy/while nursing.

Hygiene measures : Wash exposed skin thoroughly after handling.

### 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 : incompatible materials. Keep container closed when not in use.

Incompatible products : Strong bases. metals. cyanides.

Incompatible materials : Heat sources.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Sulfuric Acid, ACS (7664-93-9)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (mg/m³) | 0.2 mg/m³ (Thoracic fraction) |
| OSHA | OSHA PEL (TWA) (mg/m³) | 1 mg/m³ |
| IDLH | US IDLH (mg/m³) | 15 mg/m³ |
| NIOSH | NIOSH REL (TWA) (mg/m³) | 1 mg/m³ |

| **Water (7732-18-5)** |
|---|
| Not applicable |

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

### 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment:**

Safety glasses. Gloves. Protective clothing. Face shield.



**Hand protection:**

Wear protective gloves.

**Eye protection:**

Chemical goggles or face shield

**Skin and body protection:**

Wear suitable protective clothing

**Respiratory protection:**

Mist formation: aerosol mask

**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

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Appearance | : | Clear, colorless liquid. |
| Colour | : | Colourless |
| Odour | : | None. |
| Odour threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| 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 |
| Density | : | 1.03 g/ml |
| Solubility | : | Soluble in water. |
| Log Pow | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, kinematic | : | 1.07 cSt |
| Viscosity, dynamic | : | No data available |
| Explosive limits | : | No data available |
| Explosive properties | : | Not applicable. |
| Oxidising properties | : | None. |

### 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 under normal conditions.

### 10.3. Possibility of hazardous reactions

Reacts violently with (some) bases: release of heat.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

metals. Strong bases. cyanides.

### 10.6. Hazardous decomposition products

Sulfur compounds. Thermal decomposition generates : Corrosive vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Likely routes of exposure : Skin and eyes contact

Acute toxicity : Not classified

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| LD50 oral rat | 2140 mg/kg bodyweight (Rat, Experimental value) |
| ATE US (oral) | 2140 mg/kg bodyweight |

| Water (7732-18-5) | |
|---|---|
| LD50 oral rat | ≥ 90000 mg/kg |
| ATE US (oral) | 90000 mg/kg bodyweight |

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 : Not classified

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| Additional information | Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans |
| National Toxicology Program (NTP) Status | 2 - Known Human Carcinogens |

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

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

Symptoms/effects after inhalation : Corrosion of the upper respiratory tract.

Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

## SECTION 12: Ecological information

### 12.1. Toxicity

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| LC50 fish 1 | 42 mg/l (96 h, Gambusia affinis) |
| EC50 Daphnia 1 | 29 mg/l (24 h, Daphnia magna) |

### 12.2. Persistence and degradability

| Sulfuric Acid, 1.0N (0.5M) | |
|---|---|
| Persistence and degradability | Not established. |

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

| Water (7732-18-5) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Sulfuric Acid, 1.0N (0.5M) | |
|---|---|
| Bioaccumulative potential | Not established. |

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| Log Pow | -2.2 (Estimated value) |

| Sulfuric Acid, ACS (7664-93-9) | |
|---|---|
| Bioaccumulative potential | Not bioaccumulative. |

| Water (7732-18-5) | |
|---|---|
| Bioaccumulative potential | Not established. |

### 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 disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Transport document description : UN2796 Sulfuric acid (with not more than 51% acid), 8, II

UN-No.(DOT) : UN2796

Proper Shipping Name (DOT) : Sulfuric acid
with not more than 51% acid

Transport hazard class(es) (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.
B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
B15 - Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
N6 - Battery fluid packaged with electric storage batteries, wet or dry, must conform to the packaging provisions of 173.159 (g) or (h) of this subchapter.
N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
T8 - 4 178.274(d)(2) Normal..... Prohibited
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
TP12 - This material is considered highly corrosive to steel.

| | | |
|---|---|---|
| DOT Packaging Exceptions (49 CFR 173.xxx) | : | 154 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : | 1 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : | 30 L |
| DOT Vessel Stowage Location | : | B - (i) The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) ‘‘On deck only’’ on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded. |
| Other information | : | No supplementary information available. |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Sulfuric Acid, 1.0N (0.5M)** | |
|---|---|
| SARA Section 311/312 Hazard Classes | Health hazard - Skin corrosion or Irritation<br>Health hazard - Serious eye damage or eye irritation |

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.

| | | |
|---|---|---|
| Sulfuric Acid, ACS | CAS-No. 7664-93-9 | 4.76% |

| **Sulfuric Acid, ACS (7664-93-9)** | |
|---|---|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 1000 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 1000 lb |
| SARA Section 311/312 Hazard Classes | Health hazard - Skin corrosion or Irritation<br>Health hazard - Serious eye damage or eye irritation |

### 15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

**National regulations**

| **Sulfuric Acid, ACS (7664-93-9)** |
|---|
| Listed on IARC (International Agency for Research on Cancer)<br>Listed as carcinogen on NTP (National Toxicology Program) |

### 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

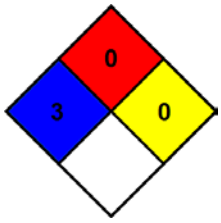
## SECTION 16: Other information

| | | |
|---|---|---|
| Revision date | : | 08/22/2017 |
| Other information | : | None. |

Full text of H-statements: see section 16:

| | |
|---|---|
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |

| | | |
|---|---|---|
| NFPA health hazard | : | 3 - Materials that, under emergency conditions, can cause serious or permanent injury. |
| NFPA fire hazard | : | 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. |
| NFPA reactivity | : | 0 - Material that in themselves are normally stable, even under fire conditions. |




Hazard Rating

| | | |
|---|---|---|
| Health | : | 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given |
| Flammability | : | 0 Minimal Hazard - Materials that will not burn |
| Physical | : | 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives. |
| Personal protection | : | H<br>H - Splash goggles, Gloves, Synthetic apron, Vapor respirator |

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