

Sulfuric Acid, 72% w/w

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 02/12/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Sulfuric Acid, 72% w/w
Product code : LC25645

1.2. Relevant identified uses of the substance or mixture and uses advised against

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

1.3. Details of the supplier of the safety data sheet

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: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1A H314
Aquatic Acute 3 H402

2.2. Label elements

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
H402 - Harmful to aquatic life
Precautionary statements (GHS-US) : P260 - Do not breathe mist, spray, vapours
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position 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 or doctor/physician
P321 - Specific treatment (see Personal precautions on this label)
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

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-US)

No data available

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

| Name | Product identifier | % | GHS-US classification |
|------------------------|--------------------|----|---|
| Sulfuric Acid, 96% w/w | (CAS No) 7664-93-9 | 72 | Skin Corr. 1A, H314 Eye Dam. 1, H318 |
| Water | (CAS No) 7732-18-5 | 28 | Not classified |

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 to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. |
| First-aid measures after skin contact | : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. |
| 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 or doctor/physician. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| Symptoms/injuries | : Causes severe skin burns and eye damage. |
| Symptoms/injuries after inhalation | : Coughing. Irritation of the respiratory tract. |
| Symptoms/injuries after skin contact | : Caustic burns/corrosion of the skin. |
| Symptoms/injuries after eye contact | : Corrosion of the eye tissue. |
| Symptoms/injuries after ingestion | : Bleeding of the gastrointestinal tract. |
| Symptoms/injuries upon intravenous administration | : Not available. |
| Chronic symptoms | : Respiratory difficulties. Inflammation/damage of the eye tissue. Irritation of the respiratory tract. Skin rash/inflammation. |

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. 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. Special hazards arising from the substance or mixture

| | |
|------------------|--|
| Fire hazard | : Reacts exothermically with water (moisture). |
| Explosion hazard | : Not applicable. |
| Reactivity | : Thermal decomposition generates : Corrosive vapours. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |
| Other information | : Not applicable. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|------------------|
| General measures | : Evacuate area. |
|------------------|------------------|

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Protective equipment | : Face-shield. Gloves. Protective clothing. Protective goggles. |
| Emergency procedures | : Evacuate unnecessary personnel. |

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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. combustible materials. metals.
Incompatible materials : Sources of ignition. Direct sunlight.
Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. combustible materials. metals. metal powders.
Storage area : Keep container in a well-ventilated place. Keep only in the original container.
Packaging materials : MATERIAL TO AVOID: aluminium, bronze, copper, iron, lead, monel steel, nickel, steel, tin, zinc.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Sulfuric Acid, 96% w/w (7664-93-9) | | |
|------------------------------------|------------------------|-----------|
| USA ACGIH | ACGIH TWA (mg/m³) | 0.2 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 1 mg/m³ |

8.2. Exposure controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or face shield.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Thermal hazard protection : None necessary.
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.
Molecular mass : 98.08 g/mol
Colour : Colourless.
Odour : odorless.
Odour threshold : No data available

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| | |
|--|------------------------------------|
| pH | : ≤ 1 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Self ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Not flammable |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 1.634 g/ml |
| Solubility | : Exothermically soluble in water. |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : > 3.948 cSt |
| Viscosity, dynamic | : No data available |
| Explosive properties | : Not applicable. |
| Oxidising properties | : None. |
| Explosive limits | : 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

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

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Sulfuric Acid, 96% w/w (7664-93-9)

| | |
|---------------|---|
| LD50 oral rat | 2140 mg/kg bodyweight (Rat; Experimental value,Rat; Experimental value) |
|---------------|---|

Water (7732-18-5)

| | |
|---------------|--------------------|
| LD50 oral rat | ≥ 90000 mg/kg |
|---------------|--------------------|

Skin corrosion/irritation : Causes severe skin burns and eye damage.

pH: ≤ 1

Serious eye damage/irritation : Not classified

pH: ≤ 1

Respiratory or skin sensitisation : Not classified

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| | |
|------------------------|--|
| Germ cell mutagenicity | : Not classified Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified |

Sulfuric Acid, 96% w/w (7664-93-9)

| | |
|---|--|
| IARC group | 1 - Carcinogenic to humans |
| Reproductive toxicity | : Not classified Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified Based on available data, the classification criteria are not met |
| Aspiration hazard | : Not classified Based on available data, the classification criteria are not met |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. |
| Symptoms/injuries after inhalation | : Coughing. Irritation of the respiratory tract. |
| Symptoms/injuries after skin contact | : Caustic burns/corrosion of the skin. |
| Symptoms/injuries after eye contact | : Corrosion of the eye tissue. |
| Symptoms/injuries after ingestion | : Bleeding of the gastrointestinal tract. |
| Symptoms/injuries upon intravenous administration | : Not available. |
| Chronic symptoms | : Respiratory difficulties. Inflammation/damage of the eye tissue. Irritation of the respiratory tract. Skin rash/inflammation. |
| Likely routes of exposure | : Skin and eye contact |

SECTION 12: Ecological information

12.1. Toxicity

Sulfuric Acid, 96% w/w (7664-93-9)

| | |
|---|---|
| LC50 fishes 1 | 42 mg/l (96 h; Gambusia affinis) |
| EC50 Daphnia 1 | 29 mg/l (24 h; Daphnia magna) |
| LC50 fish 2 | 49 mg/l (48 h; Lepomis macrochirus) |
| TLM fish 1 | 42 mg/l (96 h; Gambusia affinis) |
| Threshold limit other aquatic organisms 1 | 6900 mg/l (24 h; Pseudomonas fluorescens) |

12.2. Persistence and degradability

Sulfuric Acid, 72% w/w

| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

Sulfuric Acid, 96% w/w (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, 72% w/w

| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

Sulfuric Acid, 96% w/w (7664-93-9)

| | |
|---------------------------|----------------------------------|
| Log Pow | -2.20 (Estimated value) |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

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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. Waste treatment 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

In accordance with DOT

Transport document description : UN1830 Sulfuric acid (with more than 51 percent acid), 8, II

UN-No.(DOT) : 1830

DOT NA no. : UN1830

DOT Proper Shipping Name : Sulfuric acid
with more than 51 percent acid

Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : II - Medium Danger

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.

B83 - Bottom outlets are prohibited on tank car tanks transporting sulfuric acid in concentrations over 65.25 percent.

B84 - Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance for sulfuric acid or spent sulfuric acid in concentration up to 65.25 percent.

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.

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

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

DOT Quantity Limitations Passenger aircraft/rail : 1 L
(49 CFR 173.27)

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DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

DOT Vessel Stowage Location : C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other : 14 - For metal drums, stowage permitted under deck on cargo vessels

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Class (ADR) : 8 - Corrosive substances

Danger labels (ADR) : 8 - Corrosive substances



Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Sulfuric Acid, 72% w/w

Listed on the United States TSCA (Toxic Substances Control Act) inventory

| | |
|--|---------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) : | 1000 lb |
|--|---------|

Sulfuric Acid, 96% w/w (7664-93-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

| | |
|--|---------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) : | 1000 lb |
|--|---------|

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |
|-------------------------------------|---------------------------------|

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Sulfuric Acid, 72% w/w

Listed on the Canadian DSL (Domestic Substances List) inventory.

| | |
|----------------------|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
|----------------------|------------------------------|

Sulfuric Acid, 96% w/w (7664-93-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

| | |
|----------------------|------------------------------|
| WHMIS Classification | Class E - Corrosive Material |
|----------------------|------------------------------|

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

| | |
|----------------------|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |
|----------------------|---|

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

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Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

15.2.2. National regulations

Sulfuric Acid, 72% w/w

Listed on the Canadian Ingredient Disclosure List

Sulfuric Acid, 96% w/w (7664-93-9)

Listed on the Canadian Ingredient Disclosure List

Water (7732-18-5)

Not listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

No additional information available

SECTION 16: Other information

Indication of changes : Revision - See : *.

Other information : None.

Full text of H-phrases: see section 16:

| | |
|-----------------|--|
| Aquatic Acute 3 | Hazardous to the aquatic environment — AcuteHazard, Category 3 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H402 | Harmful to aquatic life |

NFPA health hazard

: 4 - Very short exposure could cause death or serious residual injury even though prompt medical attention was given.

NFPA fire hazard

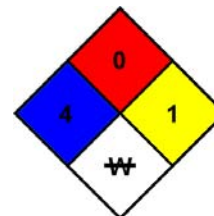
: 0 - Materials that will not burn.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

NFPA specific hazard

: W - Unusual reactivity with water. This indicates a potential hazard using water to fight a fire involving this material. When a compound is both water-reactive and an oxidizer, the W/bar symbol should go in this quadrant and the OX warning is placed immediately below the NFPA diamond.



HMIS III Rating

Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

Personal Protection : H

SDS US (GHS HazCom 2012)

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