


Target Organ- Respiratory tract irritation
 Hazardous to the aquatic environment - short-term (Category 3)
 Hazardous to the aquatic environment - long-term (Category 3)

2.2 GHS Label elements, including precautionary statements

| | |
|--------------------------|---|
| Pictogram |  |
| Signal Word | Danger |
| Hazard statements | May be corrosive to metals Causes skin irritation Causes serious eye damage May cause respiratory irritation |
| Precautionary statements | Use personal protective equipment as required Wash face, hands and any exposed skin thoroughly after handling Avoid breathing dust/fume/gas/mist/vapors/spray Use only outdoors or in a well-ventilated area Keep only in original container IF exposed or concerned: Get medical attention/advice IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing IF ON SKIN: Wash with plenty of soap and water If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash before reuse IF IN EYES: 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 Absorb spillage to prevent material damage Store locked up Store in a well-ventilated place. Keep container tightly closed Store in corrosive resistant polypropylene container with a resistant inliner Store in a dry place Dispose of contents/container to an approved waste disposal plant |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Warning. Cancer - <https://www.p65warnings.ca.gov/>

SECTION 3: Composition/information on ingredients

3.1 Components

| Chemical name | Common name and synonyms | CAS number | Concentration |
|---------------|--------------------------|------------|---------------|
| Sulfuric Acid | N/A | 7664-93-9 | 4.5 - 5.5% |
| Water | H2O | 7732-18-5 | 94.5 - 95.5% |

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

| | |
|--------------------------------|---|
| If inhaled | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell. |
| In case of skin contact | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| In case of eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. |
| If swallowed | Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. |

4.2 Most important symptoms and effects, both acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | |
|---------------------------------------|---|
| Suitable extinguishing media | Foam, Powder, Carbon dioxide (CO ₂) |
| Unsuitable extinguishing media | The product reacts with water and will generate heat. |

5.2 Specific hazards arising from the substance or mixture

Contact with metals may evolve flammable hydrogen gas. During fire, gases hazardous to health may be formed.

5.3 Special protective equipment and precautions for firefighters

Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

5.4 Further information

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No information available.

Lower No information available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

| Health | Flammability | Instability | Physical hazards |
|--------|--------------|-------------|------------------|
| 3 | 0 | 0 | N/A |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.2 Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

6.3 Methods and materials for containment and cleaning up

Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

Incompatibilities

Strong oxidizing agents. Combustible material. Bases. Organic materials. Reducing Agent. Finely powdered metals. Peroxides.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Component | Type | Value |
|---------------|------|---------------------|
| Sulfuric acid | TWA | 1 mg/m ³ |

US. ACGIH Threshold Limit Values

| Component | Type | Value |
|---------------|------|----------|
| Sulfuric acid | TWA | 0.2 mg/3 |

US. NIOSH: Pocket Guide to Chemical Hazards

| Component | Type | Value |
|---------------|------|----------------------|
| Sulfuric acid | IDLH | 15 mg/m ³ |
| | TWA | 1 mg/m ³ |

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves.

Body Protection

Wear appropriate clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical State | Liquid |
| Appearance | Colorless |
| Odor | Characteristically pungent. |
| Odor Threshold | No information available. |
| pH | < 1-35 - 10 °C / -31 - 50 °F |
| Melting Point/Range | 121 - 270 °C / 249.8 - 518 °F at 760 mmHg |
| Boiling Point/Range | No information available. |
| Evaporation Rate | Not applicable. |
| Flammability (solid) | No information available. |
| Flammability or explosive limit | No information available. |
| Upper | |
| Lower | |
| Vapor Pressure | < 1 mmHg |
| Vapor Density | 3.4 Air = 1 |
| Density | 1.05 g/mL |
| Solubility | Completely soluble in water. |
| Partition coefficient; n-octanol/water | No information available. |
| Autoignition Temp | No information available. |
| Decomposition Temp | No information available. |

| | |
|----------------------|------------------------------|
| Viscosity | 6.8 - 23 cps (20 °C / 68 °F) |
| Molecular Formula | H2O4S |
| Molecular Weight | 98.07 g/mol |
| VOC Content(%) | No information available. |
| Oxidizing properties | None. |

9.2 Other safety information No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactive.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Contact with metals may evolve flammable hydrogen gas. Reacts violently with water.

10.4 Conditions to avoid

Contact with incompatible materials. Do not mix with other chemicals.

10.5 Incompatible materials

Bases. Reducing agents. Metals.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|------------------|-------------|------------------|
| Sulfuric acid | 2140 mg/kg (rat) | Not listed. | 0.375 mg/L (rat) |

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Germ cell mutagenicity

No information available.

Carcinogenicity

| Component | CAS | IARC | NTP | ACGIH | OSHA | Mexico |
|---------------|-----------|---------|-------|-------|--------|--------|
| Sulfuric acid | 7664-93-9 | Group 1 | Known | A2 | Listed | A2 |

Specific target organ toxicity - single exposure

Respiratory system

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

| Product | | Species | Test Results |
|---------------|------|-------------------|---------------------|
| Sulfuric acid | LC50 | Brachydanio rerio | > 500 mg/L 96 hours |
| | EC50 | Water flea | 29 mg/L 24 hours |

12.2 Persistence and degradability

No information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

This product is water soluble and may disperse in soil. Expected to be mobile in soil.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

| | |
|----------------------|---------------|
| UN Number | UN2796 |
| Proper Shipping name | Sulfuric Acid |
| Hazard Class | 8 |
| Packaging Group | II |

IMDG

| | |
|----------------------|---------------|
| UN Number | UN2796 |
| Proper Shipping name | Sulfuric Acid |
| Hazard Class | 8 |
| Packaging Group | II |

IATA

| | |
|----------------------|---------------|
| UN Number | UN2796 |
| Proper Shipping name | Sulfuric Acid |
| Hazard Class | 8 |
| Packaging Group | II |

SECTION 15: Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed. RQ: 1000 lb

SARA 304 Emergency release notification

Listed. RQ: 1000 lb

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Listed. RQ: 1000 lb; Threshold planning quantity: 1000 lb

SARA 311/312 Hazardous

See section 2 for more information.

SARA 313 (TRI reporting)

Regulated. Weight: > 95%; Threshold values: 1.0%

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Listed.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed.

US. New Jersey Worker and Community Right-to-Know Act

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Listed.

California Proposition 65

Listed.

SECTION 16: Other information

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SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.