



**UNIVAR®**

# SAFETY DATA SHEET

SDS01162  
SULPHURIC ACID 93%

Preparation Date: 02/Jan/2018

Version: 1

## 1. IDENTIFICATION

### Product identifier

**Product Name** SULPHURIC ACID 93%

### Other means of identification

**Product Code(s)** SDS01162

**Synonyms** Sulphuric Acid, Hydrogen Sulphate, Oil of Vitriol, Battery Acid.

### Recommended use of the chemical and restrictions on use

**Recommended Use** Water treatment. Metal pickling. Petroleum processing. Manufacture of fertilizers, explosives and other acids.

**Restricted Uses** No information available

### Initial Supplier Identifier

Univar Canada Ltd.  
9800 Van Horne Way  
Richmond, BC V6X 1W5  
Telephone: 1-866-686-4827

### Emergency telephone number

**24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)**

## 2. HAZARD IDENTIFICATION

### Hazardous Classification of the substance or mixture

Corrosive to metals	Category 1
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

### Label elements

**Hazard pictograms****Signal Word: Danger****Hazard statements**

May be corrosive to metals  
 Causes severe skin burns and eye damage  
 Fatal if inhaled  
 May cause respiratory irritation

**Precautionary Statements****Prevention**

Keep only in original container  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Use only outdoors or in a well-ventilated area

**Response**

Specific treatment (see first aid instructions on label)  
 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 or shower  
 Wash contaminated clothing before reuse  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Unknown acute toxicity**                      No information available

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Substance**

Chemical Name	CAS No.	Weight-%	Synonyms
Sulphuric Acid	7664-93-9	90 - 100%	Sulphuric Acid

**4. FIRST AID**

### Description of first aid measures

#### **General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

#### **Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

#### **Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

#### **Skin contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

#### **Ingestion**

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

#### **Self-protection of the first aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

#### **Most important symptoms and effects, both acute and delayed:**

Harmful if swallowed Causes burns, and brownish or yellow stains. Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Corrosive to eye tissue and may cause severe damage and blindness. Inflammation of the eye is characterized by redness, watering, and itching. Concentrated solutions may cause second or third degree burns with severe necrosis and may cause permanent scarring. Corrosive! Effects on the skin may be delayed and damage may occur without the onset of pain. Causes burns to the mouth, throat and stomach. May be fatal if inhaled Inhalation of the mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath.

#### **Indication of any immediate medical attention and special treatment needed:**

#### **Note to physicians**

Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed. Following exposure the patient should be kept under medical review for at least 48 hours as delayed pneumonitis may occur. DO NOT attempt to neutralize the acid with weak bases since the reaction will produce heat that may extend the corrosive injury.

## **5. FIRE-FIGHTING MEASURES**

#### **Suitable Extinguishing Media**

Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media - Water reactive. DO NOT use water or water-based extinguishers since it can generate heat and cause spattering if applied directly to sulfuric acid.

#### **Specific hazards arising from the substance or mixture**

Reacts violently with water with the evolution of heat. It can react explosively with organic materials. Strong dehydrating agent, which may cause ignition of finely divided combustible materials on contact. Reacts violently with water with the evolution of heat. It can react explosively with organic materials. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures with air. Hydrogen, a highly flammable gas, can accumulate to explosive concentrations inside drums, or any types of steel containers or tanks upon storage.

**Hazardous combustion products**

Toxic fumes. Oxides of sulphur. Sulfuric Acid. Sulfuric acid vapors may be released upon heating and sulfur dioxide and sulfur trioxide may be released upon decomposition.

**Special protective equipment for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**Methods and materials for containment and cleaning up**

Small spills: soak up with absorbent material and scoop into containers. Large spills : prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material, place in appropriate container and flush with water. Spilled material may cause floors and contact surfaces to become slippery.

Neutralize with soda ash (sodium carbonate) or lime over area of spill.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Corrosive. Carbon steel storage tanks must be vented. CAUTION: Hydrogen, a highly flammable gas, can accumulate to explosive concentrations inside drums, or any type of steel containers or tanks upon storage. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. Use corrosion-resistant transfer equipment when transferring acid. Use with adequate ventilation. Use extreme care when diluting with water. ALWAYS ADD ACID TO WATER.

**Conditions for safe storage, including any incompatibilities**

Store packaged acid in a dry, well-ventilated location. Store above freezing point. Avoid storage with incompatible materials. Sulfuric acid will attack some forms of plastics and coatings. Always add acid to water - not water to acid. If kept in upper floors of building, floors should be acid proof with drains to a recovery tank. Elevated temperatures will increase the corrosion rate of most metals as well as cause build-up of pressure due to sulfur dioxide generation. Storage tanks should be protected from water getting in, be well ventilated, and maintained structurally in a safe and reliable condition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Sulphuric Acid 7664-93-9	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup> TLV-TWA	15 mg/m <sup>3</sup>

Consult local authorities for recommended exposure limits

### Appropriate engineering controls

#### Engineering controls

Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Electrical installations should be protected against the corrosive action of acid vapors.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes.

#### Hand protection

Break through time >8 hours. Butyl rubber gloves. Viton gloves. Silver Shield (R). Ethyl Vinyl Alcohol Laminate (EVAL). Break through time 1-4 hours. Neoprene gloves. Polyvinylchloride (PVC) gloves.

#### Skin and body protection

Butyl rubber acid suit. Impervious boots.

#### Respiratory protection

NIOSH approved supplied air respirator when airborne concentrations exceed exposure limits.

#### General hygiene considerations

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid. (Oily).
Color	Clear to amber.
Odor	Odorless A pungent odor may exist if certain impurities are present in the acid.
Odor threshold	No information available

<u>PROPERTIES</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	0.3	
Melting point / freezing point	3 °C / 37.4 °F	(100%)
Initial boiling point/boiling range	337 °C / 638 °F	(98%)
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		

<b>Upper flammability limit:</b>	No data available	
<b>Lower flammability limit:</b>	No data available	
<b>Vapor pressure</b>	0.00027 - 0.16 kPa @ 25°C (77°F)	
<b>Relative vapor density</b>	3.4	
<b>Specific Gravity</b>	1.84	
<b>Water solubility</b>	Miscible in water	
<b>Solubility in other solvents</b>	No data available	
<b>Partition coefficient</b>	No data available	
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Explosive properties</b>	No information available.	
<b>Oxidizing properties</b>	No information available.	
<b>Molecular weight</b>	98.08 g/mole	
<b>VOC Percentage Volatility</b>	No information available	
<b>Liquid Density</b>	No information available	
<b>Bulk density</b>	No information available	

## 10. STABILITY AND REACTIVITY

### Reactivity/Chemical Stability

Water reactive Stable under normal temperatures and pressures.

### Possibility of hazardous reactions

When diluting, add acid to water. DO NOT add water to the acid. Sulfuric acid can be corrosive to most metals, depending on such factors as acid concentration, temperature and impurities. Concentrated sulfuric acid (containing more than 90% H<sub>2</sub>SO<sub>4</sub>) can be safely handled using carbon steel, cast iron, and certain stainless steel alloys. The resistance of alloys to sulfuric acid corrosion generally increases with increasing chromium, molybdenum, copper and silicon content.

### Hazardous polymerization

Will not occur.

### Conditions to avoid

Water. Avoid excessive heat, open flames and all ignition sources.

### Incompatible materials

Moisture. Contact with organic materials (such as alcohol, acrylonitrile, chlorates, carbides, epichlorohydrin, fulminates, isoprene, nitrates and picrates) may cause fire and explosions. Contact with metals may produce flammable hydrogen gas. Alkalis. Reducing agents.

### Hazardous decomposition products

Toxic fumes. Oxides of sulphur. Sulfuric Acid. Sulfuric acid vapors may be released upon heating and sulfur dioxide and sulfur trioxide may be released upon decomposition. Decomposition temperature: 340°C / 644 °F.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Inhalation

May be fatal if inhaled. Inhalation of the mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath.

#### Eye contact

Inflammation of the eye is characterized by redness, watering, and itching. Corrosive to eye tissue and may cause

severe damage and blindness.

### Skin contact

Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Causes burns, and brownish or yellow stains. Corrosive! Effects on the skin may be delayed and damage may occur without the onset of pain. Concentrated solutions may cause second or third degree burns with severe necrosis and may cause permanent scarring.

### Ingestion

Causes burns to the mouth, throat and stomach. Harmful if swallowed.

### Information on toxicological effects

#### Symptoms

Repeated exposure may produce erosion and discoloration of teeth.

### Numerical measures of toxicity

#### Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 2,301.00 mg/kg

Unknown acute toxicity No information available

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sulphuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	Not available	= 510 mg/m <sup>3</sup> ( Rat ) 2 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Skin corrosion/irritation

Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Causes burns, and brownish or yellow stains. Concentrated solutions may cause second or third degree burns with severe necrosis and may cause permanent scarring. Corrosive! Effects on the skin may be delayed and damage may occur without the onset of pain.

#### Serious eye damage/eye irritation

Inflammation of the eye is characterized by redness, watering, and itching. Corrosive to eye tissue and may cause severe damage and blindness.

#### Respiratory or skin sensitization

No information available.

#### Germ cell mutagenicity

No information available.

#### Carcinogenicity

WHO and IARC have concluded that occupation exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to man, (Group 1) causing cancer of the larynx and, to a lesser extent, the lung. Exposure to any mist or aerosol during the use of this product should be avoided and, in any case, keep exposure below the occupational exposure limit for sulfuric acid. IARC's classification is for inorganic acid mists containing sulfuric acid only and does not apply to sulfuric acid or sulfuric acid solutions.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulphuric Acid 7664-93-9	A2	Group 1	Known	X

#### Legend

ACGIH (American Conference of Governmental Industrial Hygienists)  
A2 - Suspected Human Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**Reproductive toxicity**

No information available.

**Specific target organ systemic toxicity - single exposure**

May cause respiratory irritation.

**Specific target organ systemic toxicity - repeated exposure**

No information available.

**Aspiration hazard**

No information available.

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Chemical Name	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Sulphuric Acid 7664-93-9	Not available	500 mg/L LC50 (Brachydanio rerio) 96 h static	Not available	Not available

**Persistence and degradability** No information available.**Bioaccumulation** No information available.

Chemical Name	Partition coefficient
Sulphuric Acid 7664-93-9	Not available

**Other adverse effects** No information available.**13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Do not reuse empty containers.

**14. TRANSPORT INFORMATION****TDG (Canada):**

<b>UN Number</b>	UN1830
<b>Shipping name</b>	SULPHURIC ACID with more than 51% acid
<b>Class</b>	8
<b>Packing Group</b>	II
<b>Marine pollutant</b>	Not available.



**DOT (U.S.)**

UN Number UN1830  
 Shipping name SULFURIC ACID with more than 51% acid  
 Class 8  
 Packing Group II  
 Marine pollutant Not available

**15. REGULATORY INFORMATION**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**U.S. Regulatory Rules**

Chemical Name	CERCLA/SARA - Section 302	SARA (311, 312) Hazard Class	CERCLA/SARA - Section 313
Sulphuric Acid - 7664-93-9	Listed	Listed	Listed

**International Inventories**

TSCA Complies  
 DSL/NDSL Complies

**Legend:**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

**NFPA:** Health hazards 3 Flammability 0 Instability 0 Physical and chemical properties -  
**HMIS Health Rating:** Health hazards 3\* Flammability 0 Physical hazards 0 Personal protection X

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)  
 Ceiling Maximum limit value \* Skin designation

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.

Preparation Date: 02/Jan/2018  
 Revision Date: 02/Jan/2018

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