

1. Product and Company Identification

Product Name Sulphuric Acid 93% (Synonyms: Sulfuric acid, Battery acid, Dihydrogen sulfate, Electrolyte acid, Hydrogen sulfate, Mattling acid, Oil of vitriol, Spirit of sulfur)

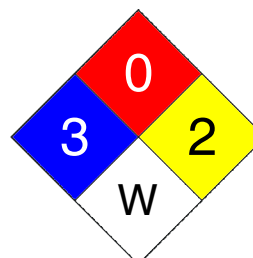
CAS # Mixture

Product Use Industrial applications

Distributor Benson Chemicals Ltd.
RR#1
Freelton
ON L0R1K0 CA
Phone: 1-800-265-0014
Emergency Services (24 hours / 7 days) 1-519-821-0215
Emergency Responder 1-800-567- 7455 Newalta Industrial SVC

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	* 3
Flammability	0
Physical Hazard	2
Personal Protection	X



2. Hazards Identification

Emergency Overview DANGER -- CORROSIVE
Very toxic.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes Causes chemical burns. May cause blindness.

Skin Causes chemical burns.

Inhalation Harmful if inhaled. May cause respiratory tract irritation or chemical burns.

Ingestion Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

Target organs Eyes. Respiratory system. Skin.

Chronic effects Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.

Signs and symptoms Symptoms are prostration, gasping, pallor, and uncoordinated movements. Symptoms may include redness, oedema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. The product causes burns of eyes, skin and mucous membranes.

3. Composition/Information on Ingredients

Ingredient(s)	CAS #	Percent
Sulfuric acid	7664-93-9	60 - 100

4. First Aid Measures

First aid procedures

Eye contact Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 20 minutes. Obtain medical attention immediately.

Skin contact Immediately flush with cool water for 20 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical attention if irritation persists.

Inhalation If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.

Ingestion	Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.
Notes to physician	Symptoms may be delayed.
General advice	Keep out of reach of children. Avoid contact with eyes and skin. Wear impervious gloves and chemical splash goggles. Immediate medical attention is required. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting Measures

Flammable properties	Not flammable by WHMIS criteria. Not flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Use water with care - water applied directly will cause evolution of heat and splattering.
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of sulphur. Irritating and toxic gases or fumes may be released during a fire.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material. Do not get this material in your eyes, on your skin, or on your clothing.
Storage	Keep out of the reach of children. Keep away from heat, open flames or other sources of ignition. Keep in a cool, well-ventilated place. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limit values	
Ingredient(s)	Exposure limit values
Sulfuric acid	ACGIH-TLV TWA: 0.2 mg/m ³
Engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Personal protective equipment	
Eye/Face protection	Chemical splash goggles.
Hand protection	Impervious gloves. Confirm with reputable supplier first.

Skin and body protection	Use of an impervious apron is recommended.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	Liquid
Colour	Colourless
Form	Liquid
Odour	Odourless
Odour threshold	>1 mg/m ³
Physical state	Liquid
pH	< 1
Melting point	10.4 °C (50.72 °F)
Freezing point	Not available
Boiling point	287 °C (548.60 °F)
Flash point	Not applicable
Evaporation Rate	Not applicable
Flammability limits in air, lower, % by volume	Not applicable
Flammability Limits in Air, Upper, % by Volume	Not applicable
Vapour pressure	0.0018 mmHg
Vapour density	3.4 (Air = 1)
Specific gravity	1.84 (H ₂ O = 1)
Relative density	1.834 - 1.836 g/cm ³
Octanol/water coefficient	Not available
Solubility (H₂O)	Miscible
Auto-ignition temperature	Not applicable
Molecular weight	98.08 g/mol

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under recommended storage conditions. Very reactive.
Conditions to avoid	Heat, flames and sparks. Reacts violently with alkaline material. This product may react with reducing agents. Do not mix with other chemicals.
Incompatible materials	Contact with metals may evolve flammable hydrogen gas. Reducing agents. Caustics. Oxidizers.
Hazardous decomposition products	May include and are not limited to: Oxides of sulphur. Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Sulfuric acid	1020 mg/l/4h rat; 160 mg/m ³ mouse

Component analysis - Oral LD50

Ingredient(s)	LD50
Sulfuric acid	2140 mg/kg rat

Effects of acute exposure

Eye	Causes chemical burns. May cause blindness.
Skin	Causes chemical burns.
Inhalation	Harmful if inhaled. May cause respiratory tract irritation or chemical burns.

Ingestion	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.
Sensitisation	Non-hazardous by WHMIS criteria.
Local effects	Toxic by inhalation.
Chronic effects	Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis. Repeated exposure may cause chronic bronchitis, pulmonary edema, and erosion or discolouration of teeth.
	Extensive lung damage seen in guinea pigs exposed to 4 mg/m ³ of sulphuric acid. Lung damage caused in monkeys exposed to 4.79 mg/m ³ for 78 weeks.
Carcinogenicity	See below. There is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic.
ACGIH - Threshold Limit Values - Carcinogens	
Sulfuric acid	7664-93-9 A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)
IARC - Group 1 (Carcinogenic to Humans)	
Sulfuric acid	7664-93-9 Monograph 54 [1992] (listed under Occupational exposures to mists and vapours from sulfuric acid and other strong inorganic acids)
Mutagenicity	Non-hazardous by WHMIS criteria.
Reproductive effects	Non-hazardous by WHMIS criteria.
Teratogenicity	Non-hazardous by WHMIS criteria.

12. Ecological Information

Ecotoxicity	Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
Environmental effects	Harmful to aquatic life.
Aquatic toxicity	Not available
Persistence and degradability	Not available
Bioaccumulation/accumulation	Not available
Partition coefficient	Not available
Mobility in environmental media	Not available
Chemical fate information	Not available
Other adverse effects	Not available

13. Disposal Considerations

Waste codes	Not available
Disposal instructions	Review federal, provincial, and local government requirements prior to disposal.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

Proper shipping name	SULPHURIC ACID with more than 51 per cent acid
Hazard class	8
UN number	1830
Packing group	II



15. Regulatory Information

Canadian federal regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canada - WHMIS - Ingredient Disclosure List

Sulfuric acid 7664-93-9 1 %

WHMIS classification

Class D - Division 1A, 2A, Class E - Corrosive Material

WHMIS status

Controlled

WHMIS labeling



Inventory Status

Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Prepared by

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