

## SAFETY DATA SHEET

Creation Date 12-Nov-2010

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Revision Number 7

### 1. Identification

**Product Name** Sulfuric Acid (Technical)  
**Cat No. :** A298-212; A298-N119  
**Synonyms** Hydrogen sulfate; Vitriol brown oil; Oil of vitriol  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### **Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals	Category 1
Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

#### **Label Elements**

##### **Signal Word**

Danger

##### **Hazard Statements**

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



**Precautionary Statements****Prevention**

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

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

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

**Hazards not otherwise classified (HNOC)**

None identified

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

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Sulfuric acid	7664-93-9	90 - 98
Water	7732-18-5	2 - 10

### 4. First-aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Immediate medical attention is required.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. 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. Immediate medical attention is required.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
<b>Most important symptoms and effects</b>	Causes burns by all exposure routes. 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
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**Unsuitable Extinguishing Media** DO NOT USE WATER

**Flash Point** Not applicable  
**Method -** No information available

**Autoignition Temperature** No information available

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

**Hazardous Combustion Products**

Sulfur oxides Hydrogen

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

**Health**  
3

**Flammability**  
0

**Instability**  
2

**Physical hazards**  
W

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not ingest.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water. Corrosives area.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Sulfuric acid	TWA: 0.2 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

*Legend*

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### 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 and body protection** Wear appropriate protective gloves and 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.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear, Colorless to brown
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	0.3 (1N)
<b>Melting Point/Range</b>	10 °C / 50 °F
<b>Boiling Point/Range</b>	290 - 338 °C / 554 - 640.4 °F
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	Slower than ether
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	< 0.001 mmHg @ 20 °C
<b>Vapor Density</b>	3.38 (Air = 1.0)
<b>Specific Gravity</b>	1.84
<b>Solubility</b>	Soluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	340°C
<b>Viscosity</b>	No information available
<b>Molecular Formula</b>	H <sub>2</sub> SO <sub>4</sub>
<b>Molecular Weight</b>	98.08

## 10. Stability and reactivity

<b>Reactive Hazard</b>	Yes
<b>Stability</b>	Reacts violently with water. Hygroscopic.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Exposure to moist air or water.
<b>Incompatible Materials</b>	Water, Organic materials, Strong acids, Strong bases, Metals, Alcohols, Cyanides, Sulfides
<b>Hazardous Decomposition Products</b>	Sulfur oxides, Hydrogen
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

##### Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg ( Rat )	Not listed	LC50 85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h
Water	-	Not listed	Not listed

**Toxicologically Synergistic Products** No information available

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

#### Irritation

Causes severe burns by all exposure routes

#### Sensitization

No information available

#### Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen. Exposure to strong inorganic mists containing sulfuric acid may cause cancer by inhalation.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Sulfuric acid	7664-93-9	Group 1	Known	A2	X	A2
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

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

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*Group 1 - Carcinogenic to Humans*

*Group 2A - Probably Carcinogenic to Humans*

*Group 2B - Possibly Carcinogenic to Humans*

*NTP: (National Toxicity Program)*

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*Known - Known Carcinogen*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*A1 - Known Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Animal Carcinogen*

*Mexico - Occupational Exposure Limits - Carcinogens*

*ACGIH: (American Conference of Governmental Industrial Hygienists)*

*Mexico - Occupational Exposure Limits - Carcinogens*

*A1 - Confirmed Human Carcinogen*

*A2 - Suspected Human Carcinogen*

*A3 - Confirmed Animal Carcinogen*

*A4 - Not Classifiable as a Human Carcinogen*

*A5 - Not Suspected as a Human Carcinogen*

#### Mutagenic Effects

No information available

#### Reproductive Effects

No information available.

#### Developmental Effects

No information available.

#### Teratogenicity

No information available.

#### STOT - single exposure

Respiratory system

#### STOT - repeated exposure

None known

#### Aspiration hazard

No information available

#### Symptoms / effects, both acute and delayed

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

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

This product contains the following substance(s) which are hazardous for the environment. .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sulfuric acid	-	LC50: > 500 mg/L, 96h static (Brachydanio rerio)	-	EC50: 29 mg/L/24h

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available.

**Mobility** No information available.

## 13. Disposal considerations

**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.

## 14. Transport information

### DOT

UN-No UN1830  
 Proper Shipping Name Sulfuric acid  
 Hazard Class 8  
 Packing Group II

### TDG

UN-No UN1830  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

### IATA

UN-No UN1830  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

### IMDG/IMO

UN-No UN1830  
 Proper Shipping Name SULFURIC ACID  
 Hazard Class 8  
 Packing Group II

## 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Sulfuric acid	X	X	-	231-639-5	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated

polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

**TSCA 12(b)** Not applicable

### **SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Sulfuric acid	7664-93-9	90 - 98	1.0

**SARA 311/312 Hazard Categories** See section 2 for more information

### **CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sulfuric acid	X	1000 lb	-	-

**Clean Air Act** Not applicable

**OSHA** Occupational Safety and Health Administration  
Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sulfuric acid	1000 lb	1000 lb

**California Proposition 65** This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Sulfuric acid	7664-93-9	Carcinogen	-	Carcinogen

### **U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X
Water	-	-	X	-	-

### **U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

### **U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

### **Other International Regulations**

**Mexico - Grade** No information available

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## 16. Other information

**Prepared By** Regulatory Affairs  
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### Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**