

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Sulfuric Acid 29% - =<51.0%
Synonyms Sulphuric acid, Oil of vitriol
UN/ID No. UN2796
Item # Multi
Revision Date May-20-2020
Safety Data Sheet 0739
Recommended Use Reserved for industrial and professional use
Uses advised against Consumer uses: Private households (= general public = consumers).

CONTROLLED DOCUMENT
IF STAMPED IN RED

Company Name

PVS Chemical Solutions Inc.
10900 Harper Ave.
Detroit, MI 48213
313-921-1200

24 Hour Emergency Phone Number CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
May be corrosive to metals	Category 1
Carcinogenicity	Category 1A

Emergency Overview

<p>DANGER</p> <p>Hazard statements</p>	<p>Fatal if inhaled Causes severe skin burns and eye damage May cause cancer</p>
	

Precautionary statements

Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear respiratory protection
- Wash face, hands and any exposed skin thoroughly after handling

Response

- Specific treatment is urgent (see 4 on this label)
- Immediately call a POISON CENTER or doctor/physician
- Specific treatment (see section 4 on this Safety Data Sheet)

Eyes

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

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doctor/physician

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

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Immediately call a POISON CENTER or doctor/physician

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

Other Information

Other hazards

- May be harmful if swallowed

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	EC No.	Weight-% *
Sulfuric acid	7664-93-9	231-639-5	29 - =<51.0
Water	7732-18-5	231-791-2	49-71

4. FIRST AID MEASURES

General advice

- Call 911 or emergency medical service
- Remove and isolate contaminated clothing and shoes

Eye contact

- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes

Skin contact

- For minor skin contact, avoid spreading material on unaffected skin

Inhalation

- Move victim to fresh air
- If breathing is irregular or stopped, administer artificial respiration
- Administer oxygen if breathing is difficult

Ingestion

- Immediate medical attention is required
- Do NOT induce vomiting
- Never give anything by mouth to an unconscious person
- Drink plenty of water
- Remove from exposure, lie down
- Clean mouth with water and drink afterwards plenty of water
- Call a physician or poison control center immediately

Note to physician

- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed
- Keep victim warm and quiet

Self-protection for first aid personnel

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves
- 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

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

- Move containers from fire area if you can do it without risk

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- CO2 (except for Cyanides), dry chemical, dry sand, alcohol-resistant foam
- Water spray, fog or alcohol-resistant foam
- Use water spray or fog; do not use straight streams
- Dike fire control water for later disposal; do not scatter the material

Unsuitable extinguishing media

- Note: Most foams will react with the material and release corrosive/toxic gases

Specific hazards arising from the chemical

- Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.)
- Substance will react with water (some violently), releasing corrosive and/or toxic gases
- Reaction with water may generate much heat which will increase the concentration of fumes in the air
- Containers may explode when heated or if contaminated with water

Protective equipment and precautions for firefighters

- Substance will react with water (some violently), releasing corrosive and/or toxic gases
- When material is not involved in fire: do not use water on material itself
- Wear a self-contained breathing apparatus and chemical protective clothing

Flammable properties

- Contact with metals may evolve flammable hydrogen gas
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes

Explosive properties

- No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area)
- All equipment used when handling the product must be grounded
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing
- Stop leak if you can do it without risk

Environmental precautions

- For small spills, absorb material with clay absorbent or other compatible material. Dispose of the waste material according to local, state and governmental requirements.
- For large spills, contain the material using barriers of absorbent pigs, clay absorbent or earth dams.

Methods for cleaning up

- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal

Other Information

- Do not get water inside containers or in contact with substance

7. HANDLING AND STORAGE

Advice on safe handling

- Use personal protective equipment as required
- Avoid contact with skin, eyes or clothing
- Ensure adequate ventilation, especially in confined areas
- In case of insufficient ventilation, wear suitable respiratory equipment
- Use only with adequate ventilation and in closed systems

Storage Conditions

- Keep out of the reach of children
- Keep container tightly closed in a dry and well-ventilated place
- Keep containers tightly closed in a dry, cool and well-ventilated place
- Keep in properly labeled containers

Incompatible materials

Reacts with many compounds, Bases, Water, Metals, Combustible material, Reducing agents, Contact with metals may evolve flammable hydrogen gas, Nitrogen containing compounds, Organics, Amines, Cyanide compounds, Styrene, Oxidizers, Incompatible with strong acids and bases, Incompatible with oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m ³ thoracic particulate matter	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³

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Exposure Guidelines

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

- Respiratory protection** • A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.
- Eye/Face protection** • Tight sealing safety goggles
• Face protection shield
- Skin and body protection** • Wear suitable protective clothing
• Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact
- General Hygiene Considerations** • When using do not eat, drink or smoke
• Wash contaminated clothing before reuse
• Keep away from food, drink and animal feeding stuffs
• Contaminated work clothing should not be allowed out of the workplace
• Regular cleaning of equipment, work area and clothing is recommended
• Avoid contact with skin, eyes or clothing
• Take off all contaminated clothing and wash it before reuse
• Wear suitable gloves and eye/face protection

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	clear
Color	colorless
Odor	No information available
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	<1	
Melting point/Freezing Point	-34 °C / -29 °F	
Boiling point / boiling range	250 °C / 482 °F	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit (%)	No information available	
Lower flammability limit (%):	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	1.40 1.21-1.40	
Water solubility	Miscible in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	4 cps @ 20°C	
Explosive properties	No information available	
Oxidizing properties	No information available	
Other Information		
Softening point °C	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	

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Density No information available
Bulk density 11.7 Pounds per gallon (lb/gal)

10. STABILITY AND REACTIVITY

- Stability** • Stable under recommended storage conditions
- Conditions to avoid** • Exposure to air or moisture over prolonged periods
- Incompatible materials** Reacts with many compounds, Bases, Water, Metals, Combustible material, Reducing agents, Contact with metals may evolve flammable hydrogen gas, Nitrogen containing compounds, Organics, Amines, Cyanide compounds, Styrene, Oxidizers, Incompatible with strong acids and bases, Incompatible with oxidizing agents
- Hazardous Decomposition Products** • Thermal decomposition can lead to release of irritating and toxic gases and vapors
- Possibility of Hazardous Reactions** • None under normal processing and storage

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Principle Routes of Exposure Inhalation, Skin contact, Eye contact

Inhalation May cause irritation of respiratory tract. Avoid breathing vapors or mists.

Ingestion May be harmful if swallowed.

Skin contact May cause skin irritation and/or dermatitis.

Eye contact Contact with eyes may cause irritation.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)		85 - 103 mg/m ³ (Rat) 1 h
Water 7732-18-5	> 90 mL/kg (Rat)		

Information on toxicological effects

Symptoms No information available

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

Sensitization No information available.

Germ cell mutagenicity No information available.

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid 7664-93-9	A2	Group 1	Known	X

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.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Target Organ Effects Eyes, Respiratory system, Skin, Teeth.

Aspiration hazard No information available.

Sulfuric Acid 29% - =<51.0%**Numerical measures of toxicity - Product Information**

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

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

Oral LD50 4196 mg/kg

LC50 (Dust/Mist) 0.04 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sulfuric acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50

Persistence and degradability No information available

Bioaccumulation No information available

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Disposal of wastes • This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261)

Contaminated packaging • Do not reuse container

US EPA Waste Number • D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Sulfuric acid 7664-93-9	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Proper shipping name Sulfuric Acid (with not more than 51% acid)
Hazard Class 8
UN/ID No. UN2796
Packing Group II
RQ (lbs)(dry) Sulfuric acid: RQ kg= 454.00
Description UN2796, Sulfuric Acid (with not more than 51% acid) , 8, II, RQ
Special Provisions 386, A3, A7, B2, B15, IB2, N6, N34, T8, TP2
Emergency Response Guide Number 157

Transport Canada

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Packing Group II
Description UN2796, Battery fluid, acid, 8, II

IATA

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Packing Group II
ERG Code 8L

IMDG

UN/ID No. UN2796

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Proper shipping name	Sulphuric acid
Hazard Class	8
Packing Group	II
EmS-No.	F-A, S-B

15. REGULATORY INFORMATION**US Federal Regulations****SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Sulfuric acid - 7664-93-9	1.0

U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric acid 7664-93-9	1000 lb			X

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)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ (lbs)(dry)
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

Canada**WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

WHMIS Classification

D2A - Very toxic materials

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Sulfuric acid - 7664-93-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid 7664-93-9	X	X	X
Water 7732-18-5			X

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DEA List I, List II

Chemical Name	U.S. - DEA - List I or Precursor Chemicals	U.S.- DEA - List II or Essential Chemicals
Sulfuric acid 7664-93-9	-	50 gallon, Export Volume

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 2	Physical and Chemical Properties
HMIS	Health hazards 3	Flammability 0	Physical hazards 2	Personal protection D

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Revision Note	*** Updated value on SDS.

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End of Safety Data Sheet