

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • Sulfuric Acid, Oil of Vitriol

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Agriculture Use

Details of the supplier of the safety data sheet

Manufacturer • Nyrstar Clarksville Inc.
Zinc Plant Rd PO Box 1104
Clarksville, TN 37041-1104
United States

Telephone (General) • (931) 552-4200

Emergency telephone number

Manufacturer • (931) 552-4200 - Technical Service

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Skin Corrosion 1B
Serious Eye Damage 1

Label elements

OSHA HCS 2012

DANGER



Hazard statements • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

Prevention • Do not breathe dust.
Wash thoroughly after handling.
Wear protective gloves, clothing, and eye/face protection, .

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

Specific treatment, see supplemental first aid information.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal**
- Store locked up.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Sulfuric acid	CAS:7664-93-9	93% TO 98%	Inhalation-Rat LC50 • 510 mg/m ³ 2 Hour(s) Ingestion/Oral-Rat LD50 • 2140 mg/kg	OSHA HCS 2012: Eye Dam. 1; Skin Corr. 1B	NDA

Mixtures

- Material does not meet the criteria of a mixture.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim 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. Give artificial respiration if victim is not breathing.

Skin

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.

Eye

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

Ingestion

- Immediately give large amounts of water to dilute the acid. Do NOT induce vomiting. Give patient 1 ounce of milk of magnesia. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media • LARGE FIRES: Dry chemical, CO₂, alcohol-resistant foam or water spray.
SMALL FIRES: Dry chemical, CO₂ or water spray.

Unsuitable Extinguishing Media • Direct applied solid water streams.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Containers may explode when heated.
Sulfuric acid diluted with water will liberate hydrogen when reacting with metals.

Hazardous Combustion Products • Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Ventilate enclosed areas. Do not walk through spilled material. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures • As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

Environmental precautions

- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Neutralize with agricultural lime, slaked lime, crushed limestone or sodium bicarbonate.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage • Protect containers from physical damage and water. Keep container tightly closed. Keep container/package tightly closed in a cool, well-ventilated place. Keep away from incompatible materials.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Sulfuric acid (7664-93-9)	TWAs	0.2 mg/m ³ TWA (thoracic fraction)	1 mg/m ³ TWA	1 mg/m ³ TWA

Exposure controls

Engineering Measures/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.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Splash-proof or dust resistant safety goggles must be worn to prevent eye contact with this substance. Contact lenses should not be worn.

Skin/Body

- Wear appropriate gloves. Wear protective clothing

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless, dense hygroscopic oily liquid with a marked acid taste when pure and no odor.
Color	Colorless	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	559 F(292.7778 C)	Melting Point/Freezing Point	50 F(10 C)
Decomposition Temperature	No data available	pH	< 3
Specific Gravity/Relative Density	= 1.84 @ 4 C(39.2 F) Water=1	Water Solubility	100 %
Viscosity	No data available		
Volatility			
Vapor Pressure	< 0.001 mmHg (torr)	Vapor Density	3.4 Air=1
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available

Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- May ignite other combustibles (wood, paper, oil). Violent reaction with water. Flammable, poisonous gases may accumulate in confined spaces. Runoff to sewer may create fire or explosion hazard.

Incompatible materials

- Organics, chlorates, carbides, nitrates, picrates, powdered metals, fulminates and combustible materials.

Hazardous decomposition products

- Thermal decomposition may release toxic oxides of sulfur.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Sulfuric acid (93% TO 98%)	7664-93-9	Acute Toxicity: Ingestion/Oral-Rat LD50 • 2140 mg/kg; Inhalation-Rat LC50 • 510 mg/m ³ 2 Hour(s); Irritation: Eye-Rabbit • 250 µg • Severe irritation; Reproductive: Inhalation-Rabbit TCLo • 20 mg/m ³ 7 Hour(s)(6-18D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</i>

GHS Properties	Classification
Respiratory sensitization	OSHA HCS 2012 • Data lacking
Serious eye damage/Irritation	OSHA HCS 2012 • Serious Eye Damage 1
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Dermal - Data lacking; Acute Toxicity - Inhalation - Classification Criteria Not Met; Acute Toxicity - Oral - Classification Criteria Not Met
Aspiration Hazard	OSHA HCS 2012 • Not relevant
Carcinogenicity	OSHA HCS 2012 • Data lacking
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Corrosion 1B
Skin sensitization	OSHA HCS 2012 • Data lacking
STOT-RE	OSHA HCS 2012 • Inconclusive data
STOT-SE	OSHA HCS 2012 • Inconclusive data
Toxicity for Reproduction	OSHA HCS 2012 • Inconclusive data

Germ Cell Mutagenicity

OSHA HCS 2012 • Inconclusive data

Potential Health Effects**Inhalation****Acute (Immediate)**

- May cause corrosive burns - irreversible damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin**Acute (Immediate)**

- Causes severe skin burns and eye damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye**Acute (Immediate)**

- Causes serious eye damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion**Acute (Immediate)**

- May cause irreversible damage to mucous membranes.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Carcinogenic Effects		
	CAS	IARC
Sulfuric acid	7664-93-9	Group 1-Carcinogenic

Key to abbreviations

LD = Lethal Dose

TC = Toxic Concentration

Section 12 - Ecological Information**Toxicity**

- Non-mandatory section - information about this substance not complied for this reason.

Persistence and degradability

- Non-mandatory section - information about this substance not complied for this reason.

Bioaccumulative potential

- Non-mandatory section - information about this substance not complied for this reason.

Mobility in Soil

- Non-mandatory section - information about this substance not complied for this reason.

Other adverse effects

- Non-mandatory section - information about this substance not complied for this reason.

Section 13 - Disposal Considerations**Waste treatment methods****Product waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or

international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	UN1830	Sulfuric acid with more than 51 percent acid	8	II	NDA

Special precautions for user • None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • No data available

Section 15 - Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture**

SARA Hazard Classifications • Acute

Inventory		
Component	CAS	TSCA
Sulfuric acid	7664-93-9	Yes

United States**Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Sulfuric acid 7664-93-9 Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Sulfuric acid 7664-93-9 Not Listed

Environment**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

• Sulfuric acid 7664-93-9 Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Sulfuric acid 7664-93-9 1000 lb final RQ; 454 kg final RQ

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Sulfuric acid 7664-93-9 Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Sulfuric acid 7664-93-9 1000 lb EPCRA RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Sulfuric acid 7664-93-9 1000 lb TPQ

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

1.0 % de minimis

• Sulfuric acid	7664-93-9	concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Sulfuric acid	7664-93-9	Not Listed

United States - California

Environment		
U.S. - California - Proposition 65 - Carcinogens List		
• Sulfuric acid	7664-93-9	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
• Sulfuric acid	7664-93-9	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Sulfuric acid	7664-93-9	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Sulfuric acid	7664-93-9	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Sulfuric acid	7664-93-9	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Sulfuric acid	7664-93-9	Not Listed

Section 16 - Other Information

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Disclaimer/Statement of Liability	• This safety data sheet is offered solely for your information, consideration and investigation. It provides no warranties, either expressed or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

Key to abbreviations

NDA = No Data Available