ERCO Worldwide

SAFETY DATA SHEET

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

1. Identification

Product identifier	**Sulphuric Acid**
Other means of identification	Sulphuric Acid Solution, 45-100%, H_2SO_4
Recommended use	Water treatment, metal pickling, petroleum processing, manufacture of fertilizers, explosives and other acids.
Recommended restrictions	Professional Use Only

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	ERCO Worldwide
Address	335 Carlingview Drive Unit 1 Etobicoke, M9W 5G8 Canada
Telephone	Information #: (416) 239-7111 (Monday – Friday 8:00 am – 5:00pm EST)
Website	http://www.ercoworldwide.com
E-mail	productinfo@ercoworldwide.com
Emergency phone number	Canada & USA: 1-800-424-9300 (CHEMTREC)
Supplier	Refer to Manufacturer

2. Hazard(s) Identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, inhalation	Category 2
	Skin corrosion	Category 1A
	Serious eye damage	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards Not currently regulated by OSHA, refer to Section 12 for additional information.

OSHA defined hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

Label elements

Signal word	Danger
Hazard statement	May be corrosive to metals. Fatal if inhaled. Causes severe skin burns and eye damage. May cause cancer. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe dust, fume, gas, mist, vapors, spray. Use only outdoors or in a well-ventilated area. Wear respiratory protection. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, eye protection, face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Response	Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage.
Storage	Store in corrosive resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	No OSHA defined hazard classes. Other hazards which do not result in classification: Contact with most metals will generate flammable hydrogen gas. Reacts violently with water with evolution of heat. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. In extreme cases, tooth erosion could result. Chronic skin contact with low concentrations may cause dermatitis.
Supplemental information	Ventilate the area. Keep away from heat. Remove sources of ignition. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Keep away from metals and other incompatibles. When preparing or diluting solution, always add to water, slowly and with stirring. When diluting, always add the product to water. Never add water to the product. Label containers appropriately

In case of fire: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical. Use water with caution. Contact with water will generate considerable heat. Use chemical extinguishing agents with caution. Some chemical extinguishing agents may react with this material.

In case of spills or leaks: Contact the proper local authorities.

3. Composition/Information on Ingredients

Chemical name	Common name and synonyms	CAS number	Conc. % By Weight
Sulfuric Acid	Hydrogen Sulfate, Oil of Vitriol	7664-93-9	45 - < 100 w/w%
Dihydrogen Oxide	Water	7732-18-5	Balance

Chemical name of impurities, stabilizing solvents and/or additives: None

4. First-Aid Measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should give oxygen. If breathing stops, provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give Cardiopulmonary Resuscitation (CPR) if there is no pulse AND no breathing. Call a physician or poison control center immediately.

Skin Contact

Take off immediately all contaminated clothing. Immediately flush skin with running water for at least 20 minutes. If irritation persists, repeat flushing. Cover wound with sterile dressing. Do not rub area of contact. Wash contaminated clothing before reuse. Discard heavily contaminated clothing and shoes in a manner that limits further exposure. Leather and shoes that have been contaminated with the solution may need to be destroyed. Call a physician or poison control center immediately. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport. While the patient is being transported to a medical facility, apply compresses of iced water. If medical treatment must be delayed, immerse the affected area in iced water. Do not apply ointments unless directed by a physician. If immersion is not practical, compresses of iced water can be applied. Avoid freezing tissues.

Eye Contact

Rinse cautiously with water for a minimum of 20 minutes. Hold eye lids open during flushing. If irritation persists, repeat flushing. Remove contact lenses, if present and easy to do. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Call a physician or poison control center immediately. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

Ingestion	Do not induce vomiting. Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. If victim is alert and not convulsing, rinse mouth and give 1/2 to I glass of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	May be fatal if inhaled. Can cause severe respiratory irritation. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May result in unconsciousness and possibly death. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.
Indication of immediate medical attention and special treatment needed	Immediate medical attention is required. Causes chemical burns. May be fatal if inhaled. Symptoms may be delayed.
General information	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

Suitable extinguishing media	Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical. Use water with caution. Contact with water will generate considerable heat.
Unsuitable extinguishing media	Use chemical extinguishing agents with caution. Some chemical extinguishing agents may react with this material.
Specific hazards arising from the chemical	Not considered flammable. Vapors are heavier than air and may spread along floors. Contact with most metals will generate flammable hydrogen gas. Reacts violently with water with evolution of heat. Contact with combustible material may cause fire. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Toxic fumes, gases or vapours may evolve on burning.

Special protective equipment and precautions for firefighters	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.
Firefighting equipment/instructions	Fight fire with normal precautions from a reasonable distance. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Evacuate the area promptly. Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Fight fire from upwind to avoid exposure to combustion products. Do not allow run-off from fire-fighting to enter drains or water courses. Dike for water control.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazardous combustion products	Toxic fumes, gases or vapours may evolve on burning. Sulphur oxides.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Ventilate the area. Remove sources of ignition. Stop leak if you can do so without risk. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Dilute acid with water and neutralize with Sodium Carbonate (soda ash) or lime. Clean surface thoroughly to remove residual contamination. Large Spills: Prevent entry into waterways, sewer, basements or confined areas. Restrict access to area until completion of clean up. Ventilate area. Following product recovery, flush area with water. Do not flush into surface water or sanitary sewer system. If not recoverable, dilute with water or flush to holding area and neutralize. Remove with vacuum trucks or pump to storage/salvage vessels. Place recovered materials into suitable corrosion resistant labelled containers. Ensure adequate decontamination of tools and equipment following clean up. Never return spills to original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product. For waste disposal, see section 13 of the SDS.

Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and Storage

Precautions for safe handling

Use only outdoors or in a well-ventilated area. Wear chemically resistant protective equipment during handling. Do not breathe mist. Do not taste or swallow. Avoid contact with eyes, skin and clothing. Keep away from heat. Keep away from metals and other incompatibles. When preparing or diluting solution, always add to water, slowly and with stirring. Never add water to the product. Label containers appropriately. Wash thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store away from incompatible materials (see Section 10 of the SDS). Store in original tightly closed container. Store in corrosive resistant container with a resistant inner liner.

Suitable container and packaging materials for safe storage: The resistance of metal alloys to sulphuric acid corrosion increases with increasing chromium, molybdenum, copper and silicon content. Contact product supplier for specific packaging recommendations when handling Sulphuric acid at strengths less than 77%.

CAUTION: Hydrogen, a highly flammable gas, can accumulate to explosive concentrations inside drums, or inside most types of metal containers or tanks upon storage. Metal and, specifically, carbon steel, storage tanks must be vented due to hydrogen release as noted above.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	PEL	1 mg/m^3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m^3
	STEL	3.0 mg/m^3, 15 minutes

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	TWA	1 mg/m^3

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines The NIOSH IDLH concentration for Sulphuric acid is 15 mg/m^3. The purpose of establishing an IDLH value is to ensure that the worker can escape from a given contaminated environment in the event of failure of the most protective respiratory protection equipment. In the event of failure of respiratory protection equipment every effort should be made to exit immediately.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) 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. Eye wash facilities and emergency shower must be available proximate to the work-station location when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles and face shield are recommended. Eye wash fountain is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.
Wear as appropriate: Butyl rubber, Natural rubber, Neoprene, Polyvinyl chloride (PVC), Viton™ rubber (fluor rubber).
Unsuitable material: Polyvinyl alcohol (PVA). Advice should be sought from glove suppliers.

Other Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield. A chemical protective full-body encapsulating suit may be required in some operations. Eye wash facilities and emergency shower must be available when handling this product.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134). Advice should be sought from respiratory protection specialists.

NIOSH RECOMMENDATIONS for Sulphuric acid CONCENTRATIONS IN AIR: Up to 15 mg/m^3:
SAR operated in a continuous-flow mode or powered air-purifying respirator with acid gas cartridge(s) and a high-efficiency particulate filter. Full-face piece chemical cartridge respirator with acid gas cartridge(s) and a high-efficiency particulate filter or gas mask with acid gas canister and high-efficiency particulate filter or full-face piece SCBA or full-face piece SAR.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH
CONDITIONS: Positive pressure, full-face piece SCBA or positive pressure, full-face piece SAR with an auxiliary positive pressure SCBA.
ESCAPE: Gas mask with acid gas canister and high-efficiency particulate filter; or escape-type SCBA.
Air-purifying respirators do not protect against oxygen-deficient atmospheres.

Thermal Hazards Not applicable.

General hygiene considerations Do not breathe mist. Avoid contact with eyes, skin and clothing. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Appearance	
Physical state	Liquid
Form	Oily liquid
Color	Clear. Amber to Brown.
Odor	Odorless.
Odor threshold	Not Applicable
pH	0.3 – 2.1 (at high acid concentration in water, pH scale is not applicable)
Melting point/Freezing point	- 40 to 30°F (- 40 to - 1°C)
Initial boiling point and boiling range	302 - 572 °F (150 - 300 °C)
Flash point	Not Applicable (Does not burn)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not Applicable
Flammability limit – upper (%)	Not Applicable
Explosive limit – lower (%)	Not Available
Explosive limit – upper (%)	Not Available
Vapor pressure	0.2 to 0.0003 kPa (1.2 to 0.002 mmHg) (at 20°C)

Vapor density	3.4 (Air = 1)
Relative density	1.706 - 1.844 g/cm³
Solubility (ies)	
Solubility (water)	Soluble in all proportions
Solubility (other)	Decomposes in Ethanol.
Partition coefficient (n-octanol/water)	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	644 °F (340 °C)
Viscosity	13.6 mm²/s (100%)
Viscosity temperature	77 °F (25 °C)
Other information	
Critical temperature	Mineral acid
Molecular formula	H_2SO_4
Molecular weight	98.08
Percent volatile	15 % estimated
Specific gravity	1.30 - 1.84
Surface tension	49.6 dynes/cm at 30°C (100%)

10. Stability and Reactivity

Reactivity	Reacts violently with water with evolution of heat. Contact with most metals will generate flammable hydrogen gas. Will react violently with alkalis. The concentrated acid oxidizes, dehydrates, or sulfonates most organic compounds.
Chemical stability	Material is stable under normal conditions. Decomposes at ~ 340°C to form sulphur trioxide.
Possibility of hazardous reactions	Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Acetaldehyde and allyl chloride may polymerize violently in the presence of sulfuric acid. Hazardous gases, such as hydrogen cyanide, hydrogen sulfide and acetylene, are evolved on contact with chemicals such as cyanides, sulfides and carbides.
Conditions to Avoid	Avoid high temperatures. Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Metals. Bases. Water. Strong oxidizing agents. Reducing agents. Strong acids. Alcohols. Carbides. Picrates. Chlorates. Nitrates. Acrylonitrile. Fulminates. Perchlorates. Permanganates. Epichlorohydrin. Aniline. Ethylenediamine. Cyclopentadiene. Nitromethane. 4-nitrotoluene. Phosphorus (III) oxide. Potassium. Sodium. Ethylene glycol. Isoprene. Styrene. Acetaldehyde and allyl chloride may polymerize violently in the presence of sulfuric acid. Sulfuric acid attacks plastics.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5. The following may be released during a fire: Sulphur oxides.

11.Toxicological Information

Information on likely routes of exposure

Inhalation Fatal if inhaled. Sulphuric acid is not very volatile, and therefore workplace exposures are primarily to mists or aerosols. Sulphuric acid is corrosive and can cause severe irritation or corrosive damage if inhaled. Sulphuric acid can cause severe lung damage with a life-threatening accumulation of fluid (pulmonary edema).

Skin contact Causes severe skin burns deep ulcerations and possibly permanent scarring. Not expected to be absorbed through the skin. Extensive acid burns can result in death.

Eye contact Corrosive to the eyes and may cause severe damage including blindness. Sulphuric acid mists and aerosols are expected to be irritating.

Ingestion Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). May result in unconsciousness and possibly death. Direct skin contact symptoms may include stinging, tearing, redness, swelling, and blurred vision. Ingestion symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death. May cause cancer.

Delayed and immediate effects, and chronic effects from short-term and long-term exposure

Effects of short-term (acute) exposure Very hazardous in case of skin contact (corrosive, irritant). Skin contact may produce burns. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Very hazardous in case of eye contact (irritant, corrosive). Inflammation of the eye is characterized by redness, watering, and itching. Immediate pain, severe burns and corneal damage. Inhalation of the mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Very hazardous in case of ingestion. May cause burns to mouth, throat and stomach.

Effects of long-term (chronic) exposure Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. High mist or aerosol concentrations may cause redness, irritation and burns to the skin if contact is prolonged. Can cause permanent eye damage, including blindness. Skin irritation may be aggravated in individuals with existing skin lesions. Breathing of vapours may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis. Over-exposure by inhalation may cause respiratory irritation. May be fatal if inhaled or swallowed.

Information on toxicological effects

Acute toxicity May be fatal if inhaled. The below product data is the calculated ATE values for this mixture. Individual ingredient component data appears below the product mixture ATE values.

Product	Species	Test Results
Sulphuric Acid (CAS 7664-93-9)		
Acute		
Inhalation		
LC_{50}	Rat	0.375 - 0.536 mg/l, 4 hours (mist)
Oral		
LD_{50}	Rat	2140 - 3058 mg/kg

Components	Species	Test Results
Sulphuric Acid (CAS 7664-93-9)		
Acute		
Dermal		No Data in Literature
Inhalation		
LC_{50}	Rat	0.375 mg/l, 4 hours (mist)
Oral		
LD_{50}	Rat	2140 mg/kg
Water (CAS 7732-18-5)		
Acute		
Dermal		
LD_{50}	Rabbit	Not available.
Inhalation		
LC_{50}	Rat	Not available.
Oral		
LD_{50}	Rat	> 89840 mg/kg

Skin corrosion
Hazardous by OSHA criteria.
Category 1A. Causes severe skin burns and eye damage.

Serious eye damage
Hazardous by OSHA criteria.
Category 1. Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
Not expected to be a respiratory sensitizer.

Skin sensitizer
This product is not expected to be a skin sensitizer.

Germ cell mutagenicity
Not expected to be mutagenic in humans.

Carcinogenicity
Hazardous by OSHA criteria.
Category 1A. May cause cancer. This product may form mists.
Occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans. The information located is insufficient to conclude that sulfuric acid itself is a carcinogen. IARC has concluded there is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans (Group 1). ACGIH has designated strong inorganic acid mists containing sulfuric acid as A2 (suspected human carcinogen). US NTP has listed

	strong inorganic acid mists containing sulfuric acid as a known human carcinogen. These classifications are for inorganic acid mists containing sulfuric acid and does not apply to sulfuric acid or sulfuric acid solutions. Ingredients are present on the following lists.
IARC Monographs. Overall Evaluation of Carcinogenicity	Sulfuric Acid (CAS 7664-93-9) 1 Carcinogenic to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
US. National Toxicology Program (NTP) Report on Carcinogens	Sulfuric Acid (CAS 7664-93-9) Known to be human carcinogen.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Hazardous by OSHA criteria. The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified as a specific target organ toxicity -repeated exposure.
Aspiration toxicity	Not expected to be an aspiration hazard.
Chronic effects	Chronic skin contact with low concentrations may cause dermatitis. In extreme cases, tooth erosion could result.

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. However, may be neutralized by naturally occurring alkalinity in the environment. The ingredient ecotoxicity data appearing above is expected to be primarily associated with pH.

Components		Species	Test Results
Sulfuric Acid (CAS 7664-93-9)			
Aquatic			
Acute			
Algae	EC_{50}	Green Algae (*Pseudokirchneriella subcapitata*)	> 100 mg/l, 72 hours
Crustacea	EC_{50}	Water flea (*Daphnia magna*)	29 mg/l, 24 hours
Fish	LC_{50}	Bluegill (*Lepomis macrochirus*)	16 - 28 mg/l, 96 hours

Persistence and degradability

Biodegradation is not applicable to inorganic substances.

Bioaccumulative potential

No accumulation in living organisms is expected due to high solubility and dissociation properties.

Mobility in soil

High water solubility indicates a high mobility in soil.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

UN number	UN1830
UN proper shipping name	Sulphuric Acid
Transport hazard class(es)	
Class	8
Subsidiary risk	None
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. US CERCLA Reportable Quantity (RQ): 1000 lbs / 454 kg
Special provisions	A3, A7, B3, B83, B84, IB2, N34, T8, TP2
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1830
UN proper shipping name	Sulphuric Acid
Transport hazard class(es)	
Class	8
Subsidiary risk	None
Packing group	II
Environmental hazards	No
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.
Other information	
Passenger and cargo aircraft	Allowed
Cargo aircraft only	Allowed

IMDG

UN number	UN1830
UN proper shipping name	Sulphuric Acid
Transport hazard class(es)	
Class	8
Subsidiary risk	None
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B

Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.

DOT

IATA; IMDG

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	Sulfuric Acid (CAS 7664-93-9)	Listed.
SARA 304 Emergency release notification	Sulfuric Acid (CAS 7664-93-9)	1000 LBS
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.	

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard – Yes

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Sulfuric Acid	7664-93-9	1000	1000 lbs		

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Sulfuric Acid	7664-93-9	70 - < 100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Sulfuric Acid (CAS 7664-93-9)

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sulfuric Acid (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2

Sulfuric Acid (CAS 7664-93-9) 20 % WV

Exempt Chemical Mixtures (21 CFR 1310.12(c))		
DEA Exempt Chemical Mixtures Code Number	Sulfuric Acid (CAS 7664-93-9)	6552

US state regulations

US. Massachusetts RTK - Substance List	Sulfuric Acid (CAS 7664-93-9)	
US. New Jersey Worker and Community Right-to-Know Act	Sulfuric Acid (CAS 7664-93-9)	
US. Pennsylvania Worker and Community Right-to-Know Law	Sulfuric Acid (CAS 7664-93-9)	
US. Rhode Island RTK	Sulfuric Acid (CAS 7664-93-9)	
US. California Proposition 65	California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.	
US - California Proposition 65 - CRT: Listed date/Carcinogenic substance	Sulfuric Acid (CAS 7664-93-9)	Listed: March 14, 2003

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16.Other Information

Issue date 11/18/2020
Revision # 4
Revision Indicator Updated address in Section 1.
List of abbreviations
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
DOT: Department of Transportation
DSL: Domestic Substance List
HMIS: Hazardous Materials Identification System
HPA: Hazardous Protection Act
HSDB® - Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IDLH: immediately dangerous to life or health
IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OECD: Organisation for Economic Co operation and Development
OEL: National occupational exposure limits
OSHA: Occupational Safety and Health Administration
PPE: Personal Protective Equipment
RTECS: Registry of Toxic Effects of Chemical Substances
SAR: supplied-air respirator
SARA: Superfund Amendments and Reauthorization Act
SCBA: self-contained breathing apparatus
STEL: Short Term Exposure Limit
TWA: Time Weighted Average

References
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