

Issuing Date 8/1/2011

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	SULFURIC ACID, CONC.
Product Code(s)	5172
Recommended Use	Laboratory chemicals. Industrial (not for food or food contact use). Test kit reagent.
Company	LaMotte Company, Inc. 802 Washington Avenue P.O. Box 329 Chestertown, MD 21620 USA
Emergency Telephone Number	24 Hour Emergency Number (CHEM-TEL): USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

POISON! DANGER!**Emergency Overview****CORROSIVE**

Liquid and mist can cause severe burns to all body tissue

MAY BE FATAL IF SWALLOWED

Harmful if inhaled or absorbed through skin

Reacts with water, bases, and other materials

Appearance Clear, Oily**Physical State** Liquid**Odor** Odorless

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential Health Effects

Principle Routes of Exposure Skin contact, Ingestion, Inhalation.

Acute Toxicity**Eyes**

Corrosive to the eyes and may cause severe damage including blindness. Causes burns. Causes irritation, redness, and pain.

Skin

Corrosive. Can cause redness, pain, and severe skin burns. May be fatal if absorbed through skin.

Inhalation

Depending on exposure, the effects from inhalation of corrosive mists can vary from mild irritation to serious damage to respiratory tract. Inhalation of corrosive mist may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

Ingestion

Corrosive. May be fatal if swallowed. Can cause immediate pain and burning in the mouth, throat, esophagus and GI tract. May cause nausea, vomiting, and diarrhea, and in severe cases death.

Chronic Effects

Chronic exposure to corrosive mists or vapors may cause erosion of the teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

Aggravated Medical Conditions

Hypersensitivity may occur in those with preexisting skin disorders. Respiratory disorders. Preexisting eye disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula H2SO4 in water

Chemical Name	CAS-No	Weight %
Water	7732-18-5	to 100%
Sulfuric acid	7664-93-9	>95

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Excess acid on skin can be neutralized with a 2% solution of sodium bicarbonate in water. Call a physician immediately.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and contact emergency personnel. Call a physician immediately.
Ingestion	DO NOT INDUCE VOMITING. Call a physician immediately. Drink plenty of water. Clean mouth with water. Never give anything by mouth to an unconscious person.
Protection of First-aiders	Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce 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

Flammable Properties	Reacts with organic materials and may cause ignition of finely divided materials on contact.			
Flash Point	Not applicable			
Suitable Extinguishing Media	DO NOT USE WATER. CO ₂ , dry chemical, dry sand, alcohol-resistant foam.			
Unsuitable Extinguishing Media	Water.			
Hazardous Combustion Products	Contact with metals may evolve flammable hydrogen gas			
Explosion Data				
NFPA	Health Hazard 3	Flammability 0	Stability 2	Physical and Chemical Hazards W
HMS	Health Hazard 4	Flammability 0	Stability 2	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Refer to Section 8. Use personal protective equipment. Avoid contact with skin, eyes and inhalation of vapors.
Methods for Containment	Absorb/Cover spill with sodium bicarbonate or sodium carbonate to neutralize, then place in a chemical waste container for later disposal.
Methods for Cleaning Up	Neutralize spill with alkaline material (sodium bicarbonate), being careful to prevent splattering, then containerize slurry and hold for later disposal. If local regulations permit, dilute slurry with water and rinse to drain with excess water. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling	Refer to Section 8. Use only in area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. When diluting always add acid to water, NEVER add water to acid. Do not eat, drink, or smoke when using this product.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Store away from strong bases or metals. Keep away from incompatible materials such as cyanides or sulfides. Keep away from combustible material. Keep away from water. Keep away from direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Water 7732-18-5	None Known	None Known	None Known
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection

Safety glasses with side-shields. Face-shield.

Skin and Body Protection

Impervious clothing. Impervious gloves. Gloves & Lab Coat. Chemical resistant apron.

Respiratory Protection

Use only with adequate ventilation. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear Oily	Odor	Odorless
Physical State	Liquid	pH	<1
Flash Point	Not applicable	Boiling Point/Range	ca. 290°C (ca. 554°F) (decomposes at 340°C)
Specific Gravity	1.84@20(98% Sulfuric acid)	Water Solubility	Miscible with water Liberates much heat
Vapor Pressure	1 @ 145.8°C (295°F)	Vapor Density	3.4 (air=1) for conc. Sulfuric Acid

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use and storage. Reacts violently with water.
Incompatible Products	Water. Strong bases. Metals. Organic material. Combustible materials. Strong oxidizing agents. Strong reducing agents.
Conditions to Avoid	Excessive heat. Moisture. Incompatible products.

Hazardous Decomposition Products Sulfur oxides (SOx). Hydrogen gas. Carbon oxides (COx). Reacts with sulfides and cyanides to form toxic hydrogen cyanide and hydrogen sulfide respectively.

Hazardous Reactions Reacts violently with many compounds e.g. (strong) reducers, combustible materials, organic material with risk of spontaneous ignition. Reacts violently with water.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90 mL/kg (Rat)	None Known	None Known
Sulfuric acid	2140 mg/kg (Rat)	None Known	510 mg/m ³ (Rat) 2 h

Chronic Toxicity

Chronic Toxicity Chronic exposure to corrosive mists or vapors may cause erosion of the teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

Chemical Name	ACGIH	IARC	NTP	OSHA
Water	None Known	None Known	None Known	None Known
Sulfuric acid	A2	Group 1	Known	X

IARC: (International Agency for Research on Cancer)

Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions

Target Organ Effects Skin

Other Adverse Effects Inhalation of vapor can cause pulmonary edema.

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Water	None Known	None Known	None Known
Sulfuric acid	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION

Ecotoxicity

The material may be toxic to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Water	None Known	None Known	None Known	None Known
Sulfuric acid	None Known	LC50 > 500 mg/L Brachydanio rerio 96 h	None Known	EC50 = 29 mg/L 24 h

Bioaccumulation/Accumulation

When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical Name	Log Pow
Water	None Known
Sulfuric acid	None Known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose according to federal, state, and local regulations. If permitted, neutralize reagent with sodium bicarbonate/sodium carbonate, add slurry to large volume of water to dilute, rinse to drain with excess water.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Water - 7732-18-5	None Known	None Known	None Known	None Known
Sulfuric acid - 7664-93-9	None Known	None Known	None Known	None Known

14. TRANSPORT INFORMATION

DOT

Not regulated
Proper Shipping Name SULFURIC ACID (>51% ACID)
Hazard Class 8
UN-No 1830
Packing Group II
Reportable Quantity (RQ) 1000

IATA

UN-No 1830
Proper Shipping Name SULPHURIC ACID >51%
Hazard Class 8
Packing Group II

IMDG/IMO

Proper Shipping Name SULPHURIC ACID >51%
Hazard Class 8
UN-No 1830
Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X
Sulfuric acid 7664-93-9 (>95)	Present	X	X	1-430; 1-724	X	KE-32570	X	X

U.S. Federal Regulations**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	CAS-No	Weight %	SARA 313 - Threshold Values %
Water	7732-18-5	to 100%	None Known
Sulfuric acid	7664-93-9	>95	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

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).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known
Sulfuric acid 7664-93-9 (>95)	1000 lb	None Known	None Known	X

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known
Sulfuric acid	7664-93-9	>95	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Water	None Known	None Known
Sulfuric acid	1000 lb	1000 lb

U.S. State Regulations

California Proposition 65

Warning! California Proposition 65 has classified "strong inorganic acid mists containing sulfuric acid" as a chemical known to the State of California to cause cancer. This classification applies only to "mists" containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions, as is this solution.

Chemical Name	CAS-No	California Prop. 65
Water	7732-18-5	None Known
Sulfuric acid	7664-93-9	Carcinogen

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	None Known	None Known	None Known	None Known	None Known
Sulfuric acid	X	X	X	X	X

International Regulations

Mexico - Grade

Chemical Name	Carcinogen Status	Exposure Limits
Water	None Known	None Known
Sulfuric acid	A2	Mexico: TWA= 1 mg/m ³

Canada

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

Component	WHMIS Hazard Class
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria
Sulfuric acid 7664-93-9 (>95)	1 % D1A E



Chemical Name	NPRI
Sulfuric acid	X

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol
	(Bad file name)		

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Revision Note

Initial Release

Disclaimer

The information provided on this MSDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS