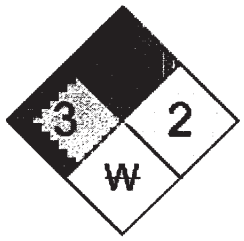
Material Safety Data Sheet

NFPA	HMIS	PPE	Symbol(s)
			Regulated 

Preparation Date August 20, 2008 **Revision Date** **Revision Number:** 0

Product Name: Sulfuric Acid, 93%

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfuric Acid, 93%

Other/Generic Names: Battery acid, sulphuric acid, oil of vitriol, hydrogen sulfate, dihydrogen sulfate

Recommended Use: Industrial.

Manufacturer

General Chemical, LLC
90 East Halsey Road
Parsippany, NJ 07054

Further information

FOR MORE INFORMATION CALL:
Customer Service US ONLY: 800-631-8050
(Monday-Friday, 9:00am - 4:30pm)

Customer Service CANADA ONLY: 866-543-3896
(Monday-Friday, 9:00am - 4:30pm)

Emergency Telephone Number

IN CASE OF EMERGENCY CALL CHEMTREC: 800-424-9300 US ONLY
24 Hours/Day, 7 Days/Week) CANADA ONLY CALL CANUTEC: 613-996-6666
(24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Oily, colorless to slightly yellow, clear to turbid liquid. Odorless. Causes severe skin burns. Causes severe eye burns. Causes burns of the mouth, throat, and stomach.

OSHA Regulatory Status

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

Potential Health Effects

Skin: Causes severe burns.

Eyes: Liquid contact can cause irritation, corneal burns, and conjunctivitis. May result in severe or permanent injury. May cause blindness.

Inhalation: Inhalation of fumes or mist can cause irritation or corrosive burns to the upper respiratory system, including the nose, mouth and throat. May irritate the lungs. May cause pulmonary edema.

Ingestion: Causes burns of the mouth, throat and stomach. May be fatal if swallowed. Hazards are also applicable to dilute solutions.

Delayed Effects: Erosion of teeth, lesions of the skin, tracheo-bronchitis, mouth inflammation, conjunctivitis and gastritis. IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen. This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions. The basis for the classifications rests on several epidemiology studies which have several deficiencies. These studies did not account for exposure to other substances, some known to be animal or potential human carcinogens, social influences (smoking or alcohol consumption) and included small numbers of subjects. Based on the overall weight of evidence from all human and chronic animal studies, no definitive causal relationship between sulfuric acid mist exposure and respiratory tract cancer has been shown.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Sulfuric acid	7664-93-9	93

4. FIRST AID MEASURES

Eye Contact Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical assistance.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing while washing. Get medical attention immediately.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably, mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting. Give victim two glasses of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flash Point:	Not applicable
FLASH POINT METHOD:	Not applicable.
Autoignition Temperature	Not applicable
UPPER FLAME LIMIT (volume % in air):	Not applicable
LOWER FLAME LIMIT (volume % in air):	Not applicable
FLAME PROPAGATION RATE (solids):	Not applicable
OSHA FLAMMABILITY CLASS:	Not flammable

Suitable Extinguishing Media Water spray or fog may be used to knock down corrosive vapor cloud. Water may be applied to the sides of the containers exposed to flames provided the water does not come in contact with the tank contents.

Unsuitable Extinguishing Media No information available.

Explosion Limits

Hazardous Combustion Products No information available

Impact sensitivity No information available
Sensitivity to static discharge No information available

Specific Hazards Arising from the Chemical
Flammable and potentially explosive hydrogen gas can be generated inside metal drums and storage tanks. Concentrated sulfuric acid can ignite combustible materials on contact.

Protective Equipment and Precautions for Firefighters
Do not use solid water streams near ruptured tanks or spills of sulfuric acid. Acid reacts violently with water and can spatter acid onto personnel. Wear approved positive-pressure self-contained breathing apparatus and protective clothing.

NFPA **Health** - **Flammability** - **Instability** -

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: Dilute small spills or leaks cautiously with plenty of water. Neutralize residue with sodium bicarbonate or other suitable neutralizing agent. When using carbonates for neutralization, adequate precautions should be taken to minimize hazards from carbon dioxide gas generation. No smoking in spill area. Major spills must be handled by a predetermined plan. Attempt to keep out of sewer.

7. HANDLING AND STORAGE

Handling Avoid contact with skin, eyes and clothing. Avoid breathing mist. Wear personal protective equipment. Do not add water to acid. When diluting, always add acid to water cautiously and with agitation. Use with adequate ventilation.

Storage Protect from physical damage. Store in a cool, well-ventilated area away from combustibles and reactive chemicals. Keep out of the sun and away from heat. Keep containers upright. No smoking in storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH TLV	OSHA PEL	Ontario TWAEV	Mexico OEL (TWA)	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m^3	TWA: 1 mg/m^3	TWA: 0.2 mg/m^3	TWA: 1 mg/m^3	15 mg/m^3

Engineering Measures Use local exhaust to keep airborne concentrations below the permissible exposure limits. Sufficient to reduce vapor and acid mists to permissible levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems. Corrosion-proof construction recommended. Closed ventilation systems (e.g. vapor hoods) are frequently used in the electronics industry.

Personal Protective Equipment

Eye/face Protection	Wear appropriate safety glasses or chemical splash goggles and faceshield where contact due to splashing or spraying is possible.
Skin Protection	Wear rubber gloves and protective clothing including boots, apron, or protective suit as appropriate to prevent skin exposure. Acid resistant boots, trousers, and jacket may be used for increased protection.
Respiratory Protection	A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.
General Hygiene Considerations	To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available
Color	Colorless to light yellow liquid
Chemical Formula	H2SO4 (various concentrations) in water
Odor	Odorless
Odor Threshold	No information available
Physical State	Liquid
pH	0.3 (1 N solution @ 25°C (75°F))
Flash Point:	Not applicable
Autoignition Temperature	Not applicable
Boiling Point/Range	~330 °C / 626 °F
Melting Point/Range	~ -1.1 °C / 30 °F
Flammability Limits in Air	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available
Evaporation Rate	Not applicable
Vapour Pressure	0.002 mmHg - basis 98% H2SO4 @ 40C (102F)
Vapour Density	3.4
Specific Gravity	1.84 - basis 98% H2SO4 @ 15C (60F)
Solubility	No information available
Partition Coefficient (n-octanol/water)	No information available
Viscosity	No information available
Molecular Weight	98.08 (H2SO4)
Water Solubility	100%
VOC Content(%)	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability	Normally stable.
Conditions to Avoid	Avoid temperatures greater than 300C: yields sulfur trioxide gas, which is toxic, corrosive, and an ozidizer.
Incompatible Products	Nitro compounds, carbides, dienes, alcohols (when heated): causes explosions. Oxidizing agents, such as chlorates and permanganates: causes fires and possible explosions. Allyl compounds and aldehydes: undergoes polymerization, possibly violent. Alkalies, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: causes strong exothermic reactions. Carbonates, cyanides, sulfides, sulfites, metals such as copper: yields toxic gases.
Hazardous Decomposition Products	Sulfur trioxide gas.

Possibility of Hazardous Reactions Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

LC50 Inhalation: **(inhal-rat): 510 mg/m³/2 hr**
(inhl-mouse): 320 mg/m³/2 hr

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg (Rat)		

Irritation No information available

Corrosivity No information available.

Sensitization No information available.

Chronic Toxicity

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
Sulfuric acid	A2	Group 1	Known	X	A2

Mutagenic Effects No information available.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

Target Organ Effects No information available

Other Adverse Effects DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as known human carcinogens. No definitive causal relationship between sulfuric acid mist exposure and respiratory cancer has been shown.

Endocrine Disruptor Information

12. ECOLOGICAL INFORMATION

Ecotoxicity
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sulfuric acid		LC50> 500 mg/L Brachydanio rerio 96 h		EC50 = 29 mg/L 24 h

Persistence and Degradability No information available.

Bioaccumulation No information available.

Mobility in Environmental Media No information available

Other adverse effects 24.5 ppm/24 hr./bluegill/lethal/fresh water;
42.5 ppm/48 hr./prawn/LC50/salt water

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated Packaging Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number No information available

Component	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Sulfuric acid - 7664-93-9				

14. TRANSPORT INFORMATION

DOT Regulated
Proper Shipping Name Sulfuric acid
Hazard Class 8
UN-No UN1830
Packing Group PGII

TDG Regulated
Hazard Class 8
UN-No UN1830
Packing Group PGII

15. REGULATORY INFORMATION

International Inventories

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

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 and Title 40n of the Code of Federal Regulations, Part 372:

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

SARA 311/312 Hazardous Categorization

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

Clean Water Act

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric acid 7664-93-9 (93)	1000 lb			X

CERCLA

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

U.S. State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

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

State Right-to-Know

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

Other International Regulations

Mexico - Grade No information available

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.

WHMIS Hazard Class
D1A Very toxic materials
E Corrosive material

16. OTHER INFORMATION

Prepared By	Kaci Rosario, Product Safety Supervisor
Preparation Date	August 20, 2008

Revision Date

Revision Summary	No information available

Disclaimer

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End of MSDS