SAFETY DATA SHEET

Sulfuric Acid

SOUTHERN STATES CHEMICAL
A Dulany Industries Company

Where reliability, consistency, and quality of product and service are our goals

1600 E. President Street; Savannah GA 31404

P 912-232-1101 F 912-232-1103

4620 Highway 421 North; Wilmington, NC 28402

P 910-762-5054 F 910-762-1600

1 IDENTIFICATION

Trade Name: SULFURIC ACID
CAS Number: 7664-93-9
Synonym: OIL OF VITRIOL
Primary Use: Industrial raw material or processing agent

Supplier:

Southern States Chemical
1600 E. President Street
Savannah GA 31404
p (912) 232-1101
f (912) 232-1103

Southern States Chemical
4620 Highway 421 North
Wilmington NC 28402
p (910) 762-5054
f (910) 762-1600

24 Hour Emergency Assistance:
Chemtrec: 800-424-9300

General Assistance: [8 AM—5 PM (M-F EST)]
Savannah GA 912-232-1101
Wilmington NC 910-762-5054

2 HAZARDS IDENTIFICATION

CLASSIFICATION: Skin Corrosion, Category 1A

LABELING: See right:

SIGNAL WORD: Danger

HAZARD PICTOGRAM: Corrosive

HAZARD STATEMENT: Causes severe skin burns and eye damage

PRECAUTIONARY STATEMENTS:

⇒ Do not breath dust/ fume/ gas/ mist/ vapors/ spray.
⇒ Wash hands, face and skin thoroughly after handling.
⇒ Wear protective gloves/ protective clothing/ eye protection/ face protection.
⇒ IF SWALLOWED: rinse mouth. DO NOT induce vomiting.
⇒ IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower.
⇒ Wash contaminated clothing before reuse.
⇒ 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.
⇒ Specific treatment (see on this label).
⇒ IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
⇒ Dispose of contents/ container in full compliance with Federal, State, and local regulations.

OTHER HAZARDS: Extremely corrosive. Harmful or fatal if swallowed. Harmful if inhaled. Severe eyes and skin irritation. Possibility of damage to the upper respiratory tract and lung tissues.

ENVIRONMENTAL HAZARDS: Strong acid. Highly toxic to plants and aquatic organisms

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	Synonym	CAS Number	Concentration
SULFURIC ACID or SULPHURIC ACID	OIL of VITROL	7664-93-9	6-100%

4 FIRST AID MEASURES

SKIN:
Immediately flush skin with plenty of water, for at least 15 minutes, while removing contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION!

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

EYE:
Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION!

INHALATION:
Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION!

INGESTION:
If victim is conscious and alert, give 1-3 glasses of water to dilute stomach contents. Rinse mouth out with water. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs keep head below hips to prevent aspiration and monitor for breathing difficulty.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION!

5 FIRE FIGHTING MEASURES

FLASH POINT Not available
FLAMMABLE LIMITS Not available
AUTOIGNITION TEMP Not available

HAZARDOUS COMBUSTION PRODUCTS: Decomposes to form sulfur dioxide and sulfur trioxide.

FIRE HAZARD Not flammable
EXPLOSION HAZARD Reacts with most metals (especially dilute concentrations): Hydrogen gas release (EXTREMELY FLAMMABLE, EXPLOSIVE). Risk of explosion if acid combined with water, organic materials or base solutions in enclosed spaces (Vacuum trucks, tanks). Mixing acids of different strengths can also pose an explosive risk in an enclosed space/container.

EXINGUISHING MEDIA ERG (Emergency Response Guidebook): Guide 137
When material is not involved in fire, do not use water on material itself.

5 FIRE FIGHTING MEASURES (CONT)

EXTINGUISHING MEDIA:

Small fire: Use carbon dioxide or dry chemical to extinguish fire.

Large fire: Flood fire area with large quantities of water, while knocking down vapors with fog. If insufficient water supply, knock down vapors only

Tank fire: Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers. Evacuate immediately if sound from safety vents or discoloration of tank. Stay clear of tanks engulfed in fire.

PROTECTIVE EQUIPMENT:

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Generates heat upon addition of water, with possibility of spattering. Wear full protective clothing. Runoff from fire control may cause pollution. Neutralize run-off with sodium bicarbonate or soda ash to prevent corrosion of metals and formation of hydrogen gas. Wear self-contained breathing apparatus if fumes or mists are present.

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Review **Fire and Explosion Hazards** [Section #5] . Take immediate steps to stop and contain release if possible.

CLEAN-UP METHODS: Soak up small spills with dry sand or diatomaceous earth. Contain large spills and cautiously dilute and neutralize with lime or soda ash. Caution should be exercised regarding personnel safety and exposure to the released product.

Notify local authorities and the National Response Center, if required. If the product is spilled and not recovered, or is recovered as a waste for treatment or disposal, the Reportable Quantity (US DOT) is 1,000 lbs (based on the sulfuric acid content of the solution spilled).

PROTECTIVE EQUIPMENT: See "Exposure Controls/Personal Protection" [Section #8].

7 HANDLING AND STORAGE

HANDLING:

DO NOT get in eyes, on skin, or on clothing. Avoid breathing vapors or mist. Wear approved respirators if adequate ventilation can not be provided. Wash thoroughly after handling. Do not eat, drink or smoke in areas of use or storage. NEVER add water to acid.

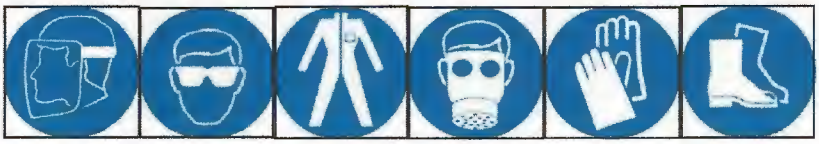
STORAGE:

Avoid contact with combustible materials, water, metals and alkalis. Store in a vented container. This material should be stored and shipped in containers specially designed for sulfuric acid. DO NOT add water or other products to contents in containers as violent reactions with resulting high heat, pressure, and/or generation of hazardous acid mists.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

PERSONAL PROTECTION:
Chemical splash goggles; Full-length face shield/chemical splash goggles combination; Acid-proof gauntlet gloves, and boots; Appropriate NIOSH approved respiratory protection if acid mist is present.



An apron can be used in place of acid proof suit if the employer's risk assessment deems it is safe for the type of handling taking place (i.e. laboratories and small quantities).
For emergencies where possibility of exposure is high, wear complete acid suit with hood, boots, and gloves.
NIOSH approved respiratory protection should be worn if acid mist is present or exposure limits are exceeded.

EXPOSURE LIMITS / HEALTH HAZARDS:
1 mg/m3 8-Hour PEL-TWA (OSHA)
0.2 mg/m3 8-Hour TLV-TWA (ACGIH) (thoracic fr.)
1 mg/m3 NIOSH REL-TWA (≤10 hours)
15 mg/m3 IDLH

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Colorless to cloudy, oily looking liquid
ODOR:	Odorless
ODOR THRESHOLD:	N/A
VAPOR PRESSURE:	<0.3 mmHg @ 75°F (77°C), <0.6 mmHg @ 100°F (38°C)
VAPOR DENSITY:	3.4
RELATIVE DENSITY:	1.84 >93%
pH:	<1.0
FREEZING POINT:	30°F- -40°F (6-85%), 46°F (85%), -20°F (93%), 5.5°F (96%), 40°F (99%)
BOILING POINT:	215° - 440°F (6-85%), 541°F (93%), 621°F (98%), 625°F (99%) @ 760 mmHg
SOLUBILITY:	100% in Water
PARTITION COEEFICIENT:	N/A
EVAPORATION RATE:	N/A
FLAMMABILITY:	N/A
UEL/LEL:	N/A
AUTO-IGNTION TEMP:	N/A
DECOMPOSITION TEMP:	340°C
VISCOSITY:	Negligible
MOLECULAR FORMULA	H_2SO_4
MOLECULAR WEIGHT	98.08
CHEMICAL FAMILY	MINERAL ACID

10 STABILITY AND REACTIVITY

STABILITY: Stable under normal, ambient conditions

REACTIVITY: Reacts violently with water, organic substances and base solutions with evolution of heat and hazardous mists.

DECOMPOSITION: Possibility of hazardous decomposition if heated and in contact with sources of ignition. Release of toxic gases and vapors (Sulfur oxides (SO_2, SO_3)).

POLYMERIZATION: Will not occur

MATERIALS TO AVOID: Water; alkaline solutions; metals, metal powder; carbides; chlorates; fulminates; nitrates; picrates; strong oxidizing, reducing or combustible organic materials. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, and carbides.

11 TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: Ingestion. Inhalation. Skin and eye contact.

CARCINOGENICITY: IARC has determined that there is sufficient evidence for the carcinogenicity of occupational exposure to strong inorganic acid mists containing sulfuric acid in humans (IARC Class 1)

ACUTE TOXICITY: ORAL acute (LD50): 2140 mg/kg (Rat).

TOXILOGICAL INFORMATION: Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: kidney, liver, teeth, respiratory and cardiovascular systems.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: attacks enamel of teeth, vomiting, clammy skin, weak and rapid pulse.

Other symptoms of exposure may include the following: shallow respiration, chronic bronchitis, lung function changes and scanty urine.

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin and respiratory system.

12 ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL MOBILITY (SOIL & AIR):

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

ECOTOXICITY:

Aquatic toxicity range—Slightly to moderately toxic

Bluegill sunfish, 48 Hour; LC50, 49 mg/L (Tap water, 20°C)
Flounder, 48 Hour; LC50, 100-330mg/L (Aerated water, conditions of bioassay not specified)
Shrimp, 48 Hour; LC50, 80-90mg/L (Aerated water, conditions of bioassay not specified)

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

This product as supplied, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261) due to its corrosiveness and reactivity. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268, 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

BILL OF LADING - BULK (U. S. DOT):

Hazardous Material - UN 1830, Sulfuric Acid, 8, PG II, RQ (use with more than 51% acid)

Hazardous Material - UN 2796, Sulfuric Acid, 8, PG II, RQ (use with not more than 51% acid)

BILL OF LADING - NON-BULK (U. S. DOT)

Hazardous Material - UN 1830, Sulfuric Acid, 8, PG II, RQ (use with more than 51% acid)

Hazardous Material - UN 2796, Sulfuric Acid, 8, PG II, RQ (use with not more than 51% acid)

U. S. DEPARTMENT OF TRANSPORTATION (DOT) REQUIREMENTS:

General Transportation Information for Bulk Shipments		
Proper Shipping Name	Sulfuric Acid	
Hazard Class	8	ERG Guide 137
UN/NA Code	UN 1830, UN 2796	
Packaging Group	PG II	
Labels Required	Corrosive	
Placards Required	Corrosive, UN 1830 (>51%), UN 2796 (≤51%)	
Reportable Quantity	See Regulatory Information [Section #15]	
General Transportation Information for Non-Bulk Shipments		
Proper Shipping Name	Sulfuric Acid	
Hazard Class	8	ERG Guide 137
UN/NA Code	UN 1830, UN 2796	
Packaging Group	PG II	
Labels Required	Corrosive	
Reportable Quantity	See Regulatory Information [Section #15]	

(The above description may not cover shipping in all cases. Please consult 49 CFR 172.101 for specific shipping information)

15 REGULATORY INFORMATION

FEDERAL REGULATIONS:
TSCA Inventory: Listed
CERCLA Section 103 Hazardous Substances
SARA Section 302 Extremely Hazardous Substance: Yes
SARA Title III, Toxic Chemicals: Immediate: X Delayed: X Fire: Pressure: Reactivity: X

Reportable Quantity (Sulfuric Acid): 1,000 pounds.

This product contains one or more components designated as hazardous substances or toxic pollutants under Section 112 of the Clean Air Act.

HCS CLASSIFICATION:
Corrosive Liquid

STATE REGULATIONS:
Based on available information this product contains components or chemicals currently known to the state of California to cause cancer. Reformulation, use or processing of this product may affect its composition and require re-evaluation.

NFPA RATINGS

	Health 3	Flammability	0	Reactivity	2	Special Hazards	W

HMIS RATINGS

Health 3	Flammability	0	Reactivity	2	

Following ingredients of this product are listed in **SARA 313**

SARA Listed Ingredient Name	CAS Number	Maximum%
SULFURIC ACID	7664-93-9	100.0

16 OTHER INFORMATION

DISCLAIMER:
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

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