

MATERIAL SAFETY DATA SHEET

Sulfuric Acid



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

1750 E. President Street; Savannah GA 31404
P 912-232-1101 F 912-232-1103

2600 Highway 421 North; Wilmington, NC 28401
P 910-762-5054 F 910-762-1600

4620 Highway 421 North; Wilmington, NC 28401
P 910-762-5054 F 910-762-1600

I CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Trade Name: SULFURIC ACID
CAS Number: 7664-93-9
Synonym: OIL OF VITRIOL
Manufacturer: Southern States Chemical, Inc.

Supplier: 100 E. President Street
Savannah GA 31404 **AND** 2600 Highway 421 North
Wilmington NC 28401 **AND** 4620 Highway 421 North
Wilmington NC 28401

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

EMERGENCY OVERVIEW: DANGER!

HEALTH HAZARD:

- ◆ CORROSIVE TO THE SKIN, EYES & RESPIRATORY TRACT.
- ◆ ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE
- ◆ CANCER HAZARD

(SEE "TOXICOLOGICAL INFORMATION" [SECTION #1 I] FOR MORE INFORMATION)

FLAMMABILITY HAZARDS: NON-COMBUSTIBLE

REACTIVITY HAZARDS: Exothermic Reaction- MAY REACT VIOLENTLY WITH WATER.
Always add acid to water, never water to acid!

POTENTIAL HEALTH EFFECTS

SKIN: CORROSIVE. Contact may cause reddening, itching, inflammation, burns, blistering and possibly severe tissue damage. Repeated or prolonged contact may result in drying, reddening, itching, pain, inflammation, cracking and possible secondary infection with tissue damage.

EYE: CORROSIVE. Exposure may cause severe burns, destruction of eye tissue and possible permanent injury or blindness. Prolonged or repeated exposure may cause irritation and conjunctivitis.

INHALATION: EXTREMELY IRRITATING AND CORROSIVE. May cause severe burns and tissue damage to the respiratory tract. Symptoms may include throat burns, constriction of the windpipe (bronchospasms), severe pulmonary edema and death, depending on the concentration and duration of exposure.
Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" [Section #1 I].
Other specific symptoms of exposure are listed under "Toxicological Information" [Section #1 I].

2 HAZARDS IDENTIFICATION, Cont.

POTENTIAL HEALTH EFFECTS

INGESTION: CORROSIVE. May cause painful irritation and burning of the mouth and throat, painful swallowing, labored breathing, burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection. Corrosive damage to the stomach and esophagus may be delayed.

Aspiration into lungs may cause chemical pneumonia and lung damage.
Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological information" [Section #11].

Other specific symptoms of exposure are listed under "Toxicological information" [Section #11].

3 COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>Concentration</u>
SULFURIC ACID	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 eye-ball 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

HAZARDOUS COMBUSTION PRODUCTS:

Decomposes to form sulfur dioxide and sulfur trioxide.

EXTINGUISHING MEDIA:

Use carbon dioxide or dry chemical to extinguish fire.

BASIC FIRE FIGHTING PROCEDURES:

Do not add water to acid. Water applied directly results in evolution of heat and splattering of acid. Acid can react with metals to liberate flammable hydrogen gas, especially when diluted with water. Evacuate area and fight fire from a safe distance. Use water spray to cool adjacent structures and to protect personnel. Do not get water inside sulfuric acid containers. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Material will not burn.

Reacts with most metals to produce hydrogen gas which can form an explosive mixture with air.

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See "Exposure Control/Personal Protection" [Section #8])

ENVIRONMENTAL PRECAUTIONS:

If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released product. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE:

Keep unnecessary people away. Isolate area for at least 50-100 meters (160-330 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).

Large spills may be neutralized with dilute alkaline solutions of soda ash or lime. Stop leak when safe to do so.

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

7 HANDLING AND STORAGE

HANDLING:

This material should be stored and shipped in plastic or plastic lined containers. Do not use with materials or equipment sensitive to acidic solutions.

Do not eat, drink or smoke in areas of use or storage.

STORAGE:

Avoid contact with combustible materials, water, metals and alkalis. Store in a vented container. Sulfuric acid reacts with most metals to produce hydrogen gas which can form an explosive mixture with air. Empty containers may contain product residue. Do not reuse without adequate precautions.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

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

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Wear chemical safety goggles and face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling. Additional protection may be necessary to prevent skin contact including use of apron, gauntlets, boots, impervious protective suit and face shield or splash goggles. Provide safety showers at any location where skin contact can occur.

Use good personal hygiene.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH/MSHA approved air purifying respirator with an appropriate acid gas cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

EXPOSURE LIMITS / HEALTH HAZARDS:

1 mg/m³ 8-Hour TWA (OSHA)

1 mg/m³ 8-Hour TWA (ACGIH)

3 mg/m³ 15-Min STEL (ACGIH)

*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

9 PHYSICAL AND CHEMICAL PROPERTIES

ODOR AND APPEARANCE:

COLORLESS TO CLOUDY OILY LOOKING LIQUID, ALMOST ODORLESS

Boiling Point	6-85% - 215°-440°F [102°-227°C], 93% - 541°F [283°C], 96% - 600°F [316°C], 99%- 625°F [329°C]
Specific Gravity	6-85% - 1.04-1.79, 93% - 1.84, 96% - 1.84, 99% - 1.84
Vapor Pressure	(6-85% - 48-<1,93%-<1,96%-<1,99%-<1) (mmHg at 100°F)
Solubility in Water	100%
pH Value	< 1
Freezing Point	6-85% = 30°-(-40°)F [-1°-(-30°)C], 85%=46°F [8°C], 93%=-20°F [-29°C], 96%= 5.5°F [-15°C], 99%=40°F [4°C]
Molecular Formula	H ₂ SO ₄
Molecular Weight	98.08
Chemical Family	MINERAL ACID

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STABILITY AND REACTIVITY

STABILITY / INCOMPATIBILITY:

Avoid contact with water.

Incompatible with combustible materials, water, metals and alkalis. See precautions under “Handling & Storage” [Section #7]

HAZARDOUS REACTIONS / DECOMPOSITION PRODUCTS

Decomposes to form sulfur dioxide and sulfur trioxide.

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TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE:

Inhalation, ingestion, skin and eye contact.

LD50

LD50: Sulfuric Acid, Rat, Oral, 2140mg/kg.

TOXICOLOGICAL 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.

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 I).

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE:

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

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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, 49mg/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):

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

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

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

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

RQ, Sulfuric Acid, 8, UN 2796, PG II (use with 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
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
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:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory. This product, as supplied, contains sulfuric acid, a Hazardous Substance as per 40 CFR Part 302.4 and an Extremely Hazardous Substance as per 40 CFR Part 344. The reportable quantity for sulfuric acid is 1,000 pounds. Any release of this product equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR Part 302.6 and 40 CFR 355.40, respectively. Failure to report may result in substantial civil and criminal penalties. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. This product contains one or more components designated as hazardous substances or toxic pollutants under Section 112 of the Clean Air Act.

There may be specific regulations at the local, regional or state/provincial level that pertain to this product.

HCS CLASSIFICATION:

Oxidizing material, Highly toxic material, Corrosive material, Carcinogen, Target organ effects.

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.

SARA TITLE III RATINGS

Immediate Hazard: X Delayed Hazard: X Fire Hazard: Pressure Hazard: Reactivity Hazard: X

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.



A Dulany Industries Company

PO Box 546
Savannah, GA 31402

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