

Distributed By:
SAL Chemical
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Weirton, WV 26062
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MATERIAL SAFETY DATA SHEET
PRODUCT: SULFURIC ACID

SECTION 1 - MANUFACTURER INFORMATION

MANUFACTURER/DISTRIBUTOR:

PVS CHEMICAL SOLUTIONS, INC.
55 Lee Street
Buffalo, New York 14210
Telephone: (716) 825-5762 (product information and emergencies)
Fax: (716) 825-6454

Distributed By: PVS NOLWOOD CHEMICALS, INC. 10900 Harper Avenue Detroit, MI. 48213 (313) 925-0300	
PVS ITEM #	PVS MSDS #

***FOR TRANSPORTATION EMERGENCY ONLY, DAY OR NIGHT, CALL ***
CHEMTREC, 1-800-424-9300

PREPARATION/REVISION DATE: 02/22/07
CONTACT: Manager of Environmental Affairs

SECTION 2 -- PRODUCT IDENTITY/HAZARDOUS INGREDIENTS INFORMATION

Product name: Sulfuric Acid
Chemical name/synonyms: Sulphuric Acid, Oil of Vitriol
Chemical formula: H₂SO₄
CAS number: 7664-93-9
Product Code: N/A

HAZARDOUS INGREDIENTS: Yes

<u>Component</u>	<u>CAS No.</u>	<u>% by wt.</u>
Sulfuric Acid	7664-93-9	75-100%
Exposure limits:		
OSHA PEL:	1 mg/m ³ , 8-hr TWA	
ACGIH TLV:	1 mg/m ³ , 8-hr TWA	
	3 mg/m ³ , STEL	
NIOSH	15 mg/m ³ , IDLH	

NON-HAZARDOUS INGREDIENTS: Yes

<u>Component</u>	<u>CAS No.</u>	<u>% by wt.</u>
Water	7732-18-5	1-25%

OSHA 29 CFR 1910.1200 EVALUATION: Hazardous

SECTION 3 -- PHYSICAL/CHEMICAL CHARACTERISTICS

APPEARANCE AND ODOR:	Clear to slightly cloudy, oily liquid; Odorless to slightly pungent.
BOILING POINT:	77.7% = 193 °C; 93% = 279 °C; 96% = 308 °C; 98% = 327 °C; 99% = 310 °C
FREEZING POINT:	77.7% = -11.4 °C; 93% = -29 °C; 96% = -14 °C; 98% = -1 °C; 99% = 4.4 °C
VAPOR PRESSURE (REID):	93.2% = 0.0016 mm Hg; 98% = 0.002 mm Hg
VAPOR DENSITY (AIR = 1):	3.4
SPECIFIC GRAVITY (WATER = 1):	77.7% = 1.706; 93.2% = 1.835; 96% = 1.843; 98% = 1.844; 99% = 1.842
PERCENT VOLATILE BY WEIGHT:	no information
EVAPORATION RATE (BUTYL ACETATE = 1):	<1
pH:	<1
SOLUBILITY IN WATER:	Completely miscible, liberates heat

SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP METHOD): Not flammable. May ignite combustible materials.

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: Use dry chemical or CO₂ fire extinguishers to fight surrounding fire. Do not use water on acid itself. Apply from farthest possible distance.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and full protective clothing. Cool exterior of storage tanks.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Violent reaction with water. Evolution of explosive hydrogen gas on contact with most metals. Will react with organic material with evolution of heat and dense white fumes.

SECTION 5 -- REACTIVITY DATA

STABILITY: Stable under ordinary conditions

HAZARDOUS POLYMERIZATION: will not occur

INCOMPATIBILITY (CONDITIONS AND MATERIALS TO AVOID): Material is stable when properly handled. Reactive with materials such as metals, metal oxides, hydroxides, nitrates, amines, carbonates and other alkaline materials. Reacts with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively. Reactions can generate a great deal of heat as does the dilution of acid with water. Concentrated

acid is a strong oxidizing agent. May cause ignition of combustible materials on contact with generation of sulfur dioxide fumes. Avoid open flames or sparks.
HAZARDOUS DECOMPOSITION PRODUCTS: Explosive hydrogen gas is generated by the action of acid on most metals and may accumulate in metal containers. Releases Sulfur Dioxide at extremely high temperatures.

SECTION 6 -- HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Inhalation, ingestion, direct contact

HEALTH EFFECTS (ACUTE AND CHRONIC):

INHALATION: Inhalation of concentrated vapor or mist may damage respiratory tract.

INGESTION: Swallowing may be fatal.

DIRECT CONTACT: Contact with liquid, mist, or vapor can cause immediate irritation or corrosive burns to all human tissue. Severity of the burn is generally determined by the concentration of the solution and duration of exposure.

EYE CONTACT: Contact with eyes may result in permanent visual loss unless removed quickly by thorough irrigation with water.

TOXICITY DATA (ANIMAL):

Oral LD₅₀, rat: 2140 mg/kg

Skin and eye irritation (rabbit): (FHSA) Corrosive

Inhalation 1 hour LC₅₀, rat: 347 ppm

The International Agency of Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a Category 1 carcinogen, a substance that is "carcinogenic to humans". This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions.

CARCINOGENS (NTP, IARC, OR OSHA): None of the components of this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Repeated skin contact with dilute solutions may cause dermatitis. May cause dental erosion.

SECTION 7 -- FIRST AID

INHALATION: Remove victim to fresh air. If not breathing, perform artificial respiration. Get medical attention.

INGESTION: Drink copious amounts of water or milk. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

DIRECT CONTACT: Wipe off excess. Flush immediately with water for at least 15 minutes while removing contaminated clothing. Get immediate medical attention. Wash clothing before re-use. Destroy contaminated shoes.

DIRECT EYE CONTACT: Flush immediately with water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye/lid tissue. Get immediate medical attention.

SECTION 8 -- PRECAUTIONS FOR SAFE STORAGE, HANDLING AND USE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store away from sources of ignition. Do not add water to concentrated acid. When diluting, slowly add acid to water while stirring, to avoid spattering, boiling, and eruption. Keep container closed and protect from contact with water. Protect container from physical damage. Do not strike containers or fittings with tools. Wash thoroughly after handling. Emptied container will retain vapor and product residue.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Utilize full protective clothing, including boots and protective equipment. Contain spill in order to prevent contamination of sewage system or waterway. Pump into marked containers for reclamation or disposal. If possible, neutralize on a dry basis with suitable alkali such as lime or soda ash; then flush with water in accordance with applicable regulations.

WASTE DISPOSAL METHODS: Dispose of spilled, neutralized, or waste product, contaminated soil and other materials in accordance with all local, state and federal regulations.

SECTION 9 -- EXPOSURE CONTROL INFORMATION

VENTILATION: Provide ventilation to control exposure levels below airborne exposure limits. Use local exhaust ventilation. Reference NFPA Standard 91 for design of exhaust systems.

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved, full face respirator with canister approved for sulfuric acid vapor and mist. Consult respirator manufacturer to determine appropriate equipment. If concentrations are high or unknown, use self-contained breathing apparatus.

PROTECTIVE GLOVES: Wear impervious rubber gloves.

EYE PROTECTION: Wear splash proof chemical safety goggles. Eyewash fountains recommended in all storage and handling areas. Do not wear contact lenses.

OTHER PROTECTIVE EQUIPMENT: Wear protective clothing to prevent skin contact. Full face shield and rubber footwear should be used. Acid-resistant hood and full body suit recommended. Safety shower recommended in all storage and handling areas.

WORK/HYGIENIC PRACTICES: Avoid breathing fumes. Use gloves when handling. Remove and change contaminated clothing immediately.

OTHER PRECAUTIONS: None

SECTION 10 -- REGULATORY INFORMATION

USDOT:

Proper shipping name: Sulfuric acid
Hazard Class: 8
UN Number: UN1830
Packing Group: II

SARA TITLE III HAZARD CLASSIFICATIONS:

ACUTE: Yes
CHRONIC: Yes
FIRE: No
PRESSURE: No
REACTIVITY: Yes

Sulfuric Acid (aerosol forms only) is a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. Sulfuric Acid is an Extremely Hazardous Substance as listed in 40 CFR 355, SARA Title III Section 302.

OTHER RATINGS:

(hazard index key: 4=severe, 3=serious, 2=moderate, 1=slight, 0=minimal)

HMIS: Health=3, Flammability=0, Reactivity=2

NFPA: Health=3, Flammability=0, Reactivity=2

OTHER INFORMATION:

RCRA 261.33: No

TSCA 8(d): Yes

SULFURIC ACID, CERCLA: RQ = 1000 lbs.

SULFURIC ACID, SARA Sec. 302 (EHS): TPQ = 1000 lbs.

WHMIS Classification: Class E – Corrosive, Class D1A – Very Toxic

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