

Material Safety Data Sheet (MSDS) of Sulphuric Acid

I. CHEMICAL IDENTITY

Chemical Name	Sulfuric Acid		Chemical Classification	Inorganic Acid	
Synonyms	Oil of Vitriol, Battery Acid, Chamber Acid, Spent Sulfuric Acid		Trade Name		
Formula	H₂SO₄	CAS No.	7664-93-9	UN No.	1830
Regulated Identification	Shipping Name	Sulfuric Acid			
	Codes / Label	Corrosive, Class 8			
	Hazardous Waste Identification Number	16	Hazchem Code	2 P	
Hazardous Ingredients		CAS No.	Hazardous Ingredients		CAS No.
1.	Sulfuric Acid	7664-93-9	3.		
2.			4.		

II. PHYSICAL AND CHEMICAL DATA

Boiling Point (°C)	290	Physical State	Liquid
Melting / Freezing Point (°C)	10.49	Appearance	Colourless, Oily
Vapour Density (Air = 1)	3.4	Odour	Odourless
Specific Gravity (Water = 1) (20°C)	1.84	Others	Miscible with Alcohol
Vapour Pressure @ 145 °C (mm Hg)	1 mm		
Solubility in Water @ 30 °C	Miscible		
Ph	< 2		

III. FIRE AND EXPLOSION HAZARD DATA

Flammability	Yes	<input type="checkbox"/>	Flash Point (Open Cup) (°C)	<i>NP</i>	LEL (%)	<i>NP</i>
			Flash Point (Closed Cup) (°C)	<i>NP</i>	UEL (%)	<i>NP</i>
	No	<input checked="" type="checkbox"/>	TDG Flammability Classification	8	Auto-Ignition Temperature(°C)	<i>NP</i>
Explosion Sensitivity to Impact			Stable	<input checked="" type="checkbox"/>	Unstable	<input type="checkbox"/> Data Not Available <input type="checkbox"/>
Explosion Sensitivity to Static Electricity			Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/> Data Not Available <input type="checkbox"/>
Hazardous Polymerization			May Occur	<input type="checkbox"/>	Will Not Occur	<input checked="" type="checkbox"/> Data Not Available <input type="checkbox"/>
Hazardous Combustion Products			<i>Emits Toxic Fumes of SO₂</i>			
Combustible Liquid		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Oxidiser		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Flammable Material		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Organic Peroxide		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Explosive Material		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Corrosive Material		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Pyrophoric Material		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Others		Yes <input type="checkbox"/> No <input type="checkbox"/>

IV. REACTIVITY DATA

Chemical Stability	Stable	<input checked="" type="checkbox"/>	Conditions to Avoid: <i>No contacts with Metals and Organic Compounds</i>
	Unstable	<input type="checkbox"/>	Hazardous Decomposition Products :
Incompatibility	Water	<input checked="" type="checkbox"/>	Materials to Avoid : <i>Organic Chlorates, Carbides, Fulminates, Picrates, Metals</i>
	Air	<input type="checkbox"/>	
	Others	<input type="checkbox"/>	
Reactivity	<i>Reacts violently with combustible and reducing materials. Reacts with many metals, water, organic compounds. Attacks clothing, wood and many other materials. Powerful Acidic Oxidizer, ignites or explodes on contact with many materials like Acetic Acid, Acetone, Cyanohydrin, (Acetone+HNO₃), (Acetone+K₂CR₂O₃), Acetonitrile, Acrolein, Acrylonitrile.</i>		
Hazardous Reaction Products		<i>Hydrogen. Toxic and Corrosive fumes</i>	

V. HEALTH HAZARD DATA

Routes of Entry	Inhalation <input checked="" type="checkbox"/> Skin Contact <input checked="" type="checkbox"/> Eye Contact <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/>			
Effects of Exposure / Symptoms	Inhalation : <i>Pungent, sore throat, coughing, shortness of breathing, labored breathing.</i> Skin Contact : <i>Corrosive, redness, pain, skin burns.</i> Eye Contact : <i>Corrosive, redness, pain, blurred vision.</i> Ingestion : <i>Corrosive, sore throat, abdominal pain.</i>			
Emergency Treatment	<i>Seek Medical Aid immediately for all types of exposures. Observe victim for delayed pulmonary reaction. Move the victim to fresh air. Give artificial respiration if necessary.</i>			
LD 50 (Oral –Rat)	2140		LC 50	
Permissible Exposure Limit	TWA	NL	ppm	1 mg/m ³
	STEL	NL	ppm	mg/m ³
Threshold Limit Value (ACGIH)	TWA	NL	ppm	1 mg/m ³
	STEL	NL	ppm	mg/m ³
Odour Threshold	> 0.25		ppm	1 mg/m ³
NEPA Hazard Signals	Health	Flammability	Reactivity	Special
	3	0	2	

VI. PREVENTIVE MEASURES

Personal Protective Equipment	<i>Ventilation, local exhaust or breathing protection, protective gloves, protective clothing, face shield.</i>
Handling and Storage Precautions	<i>Store in a dry ventilated area, separated from all substances.</i>

VII. EMERGENCY / FIRST AID MEASURES

Fire	Extinguishing Media	<i>Dry Chemical or Carbon Dioxide. Do not use water</i>
	Special Procedure	<i>Keep the containers cool by spraying water if exposed to heat or flame.</i>
	Unusual Hazards	<i>Though not combustible many reactions may cause fire and explosions, Poisonous gas may be produced</i>
Exposure	First Aid Measures	<p>Inhalation : <i>Fresh Air, rest, half upright position and transport to hospital.</i></p> <p>Skin Contact : <i>Remove contaminated clothes, rinse skin with plenty of water or shower and sent to a doctor.</i></p> <p>Eye Contact : <i>First rinse with plenty of water and transport to hospital immediately.</i></p> <p>Ingestion :</p>
	Antidotes / Dosages	<i>Not Available</i>
Spills	Steps to be taken	<i>Collection of leaking liquid in sealable containers, wash away remainder with large amount of water.</i>
	Waste Disposal Method	<i>Do not put in to the drains.</i>

VIII. ADDITIONAL INFORMATION / REFERENCES

Inhalation of vapour and of fumes may cause shortness of breath (lung oedema). The symptoms of lung oedema often do not become manifest until a few hours have passed, and they are aggravated by physical effort. Rest and hospitalization are therefore essential. Before this manifestation, administration of a corticosteroid containing spray, by a doctor or a person authorized by him or her, should be considered. Store in unbreakable packaging, breakable packing put into unbreakable container. Never pour water into acid; when diluting, always pour sulfuric acid into water.


IX. MANUFACTURERS / SUPPLIERS DATA

Name of Firm				Contact Person in Emergency
Mailing Address				
Telephone	Mobile	Fax	Email	
Local Bodies Involved				
Standard Packing	<i>Jerry Cans</i>		Tremcard Details /Ref.	<i>TEC (R) - 10b</i>
Others				Compiled On
				14

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NA: Not Available ND: No Data NL: Not Listed NP: Not Pertinent : Applicable

	<p>This Material Safety Data Sheet is compiled by the Safety and Health Information Bureau (SHIB), C-2/9/3:2, Sector - 16, Vashi, Navi Mumbai - 400 703. (E-mail: shib@vsnl.com Telephone: +91 22 27665975) The information contained herein is based on data considered accurate. However, Safety and Health Information Bureau assumes no responsibility for personal injury or property damage to users or third parties caused by the material. Such users or third parties assume all risks associated with the use of the material.</p>
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