

OLEUM

OLM

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION
Common Synonyms Fuming sulfuric acid	Oily liquid	Colorless to cloudy	Sharp, choking odor	4.1 Flash Point: Not flammable	7.1 Grades of Purity: 20% (104.5% sulfuric acid) to 65% (114.6% sulfuric acid)
			Mixes and reacts with water producing heat. Irritating mist is produced.	4.2 Flammable Limits in Air: Not flammable	7.2 Storage Temperature: Ambient
			Evacuate. Keep people away. AVOID CONTACT WITH LIQUID AND MIST. Wear chemical protective suit with self-contained breathing apparatus. Stay upwind and use water spray to "knock down" mist. Notify local health and pollution control agencies. Protect water intakes.	4.3 Fire Extinguishing Agents: Not pertinent	7.3 Inert Atmosphere: No requirement
Fire	Not flammable. May cause fire on contact with combustibles. Flammable gas may be produced on contact with metals. Wear chemical protective suit with self-contained breathing apparatus. DO NOT USE WATER ON ADJACENT FIRES.			4.4 Fire Extinguishing Agents Not to Be Used: Avoid use of water on adjacent fires.	7.4 Venting: Open
Exposure	CALL FOR MEDICAL AID. MIST Irritating to eyes, nose and throat. If inhaled, will cause coughing or difficult breathing. Move to fresh air. If breathing has stopped, give artificial respiration (but NOT mouth to mouth). If breathing is difficult, give oxygen. LIQUID Will burn skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.			4.5 Special Hazards of Combustion Products: Toxic and irritating vapors are generated.	7.5 IMO Pollution Category: C
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			4.6 Behavior in Fire: Not pertinent	7.6 Ship Type: 2
				4.7 Auto Ignition Temperature: Not flammable	7.7 Barge Hull Type: 3
				4.8 Electrical Hazards: Not pertinent	8. HAZARD CLASSIFICATIONS
				4.9 Burning Rate: Not flammable	8.1 49 CFR Category: Corrosive material
				4.10 Adiabatic Flame Temperature: Currently not available	8.2 49 CFR Class: 8
				4.11 Stoichiometric Air to Fuel Ratio: Not pertinent.	8.3 49 CFR Package Group: I
				4.12 Flame Temperature: Currently not available	8.4 Marine Pollutant: No
				4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.	8.5 NFPA Hazard Classification:
				4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	Category Classification Health Hazard (Blue)..... 3 Flammability (Red)..... 0 Instability (Yellow)..... 2
					8.6 EPA Reportable Quantity: Not listed.
					8.7 EPA Pollution Category: Not listed.
					8.8 RCRA Waste Number: Not listed
					8.9 EPA FWPCA List: Not listed
1. CORRECTIVE RESPONSE ACTIONS				5. CHEMICAL REACTIVITY	9. PHYSICAL & CHEMICAL PROPERTIES
Dilute and disperse Stop discharge	2. CHEMICAL DESIGNATIONS			5.1 Reactivity with Water: Vigorous reaction with water; spatters.	9.1 Physical State at 15° C and 1 atm: Liquid
	2.1 CG Compatibility Group: 0; Unassigned cargoes			5.2 Reactivity with Common Materials: May react with cast iron with explosive violence. Attacks many metals, releasing flammable hydrogen gas. Capable of igniting finely divided combustible material on contact. Extremely hazardous in contact with many materials.	9.2 Molecular Weight: Not pertinent
	2.2 Formula: SO ₃ -H ₂ SO ₄			5.3 Stability During Transport: Normally stable	9.3 Boiling Point at 1 atm: Decomposes
	2.3 IMO/UN Designation: 8.0/1831			5.4 Neutralizing Agents for Acids and Caustics: Cautious dilution with water, with protection against violent spattering. Diluted acid may be neutralized with lime or soda ash.	9.4 Freezing Point: Not pertinent
	2.4 DOT ID No.: 1831			5.5 Polymerization: Not pertinent	9.5 Critical Temperature: Not pertinent
	2.5 CAS Registry No.: 8014-95-7			5.6 Inhibitor of Polymerization: Not pertinent	9.6 Critical Pressure: Not pertinent
	2.6 NAERG Guide No.: 137				9.7 Specific Gravity: 1.91-1.97 at 15°C (liquid)
	2.7 Standard Industrial Trade Classification: 52232				9.8 Liquid Surface Tension: Not pertinent
					9.9 Liquid Water Interfacial Tension: Not pertinent
					9.10 Vapor (Gas) Specific Gravity: Not pertinent
					9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
					9.12 Latent Heat of Vaporization: Not pertinent
					9.13 Heat of Combustion: Not pertinent
					9.14 Heat of Decomposition: Not pertinent
					9.15 Heat of Solution: Not pertinent
					9.16 Heat of Polymerization: Not pertinent
					9.17 Heat of Fusion: Currently not available
					9.18 Limiting Value: Currently not available
					9.19 Reid Vapor Pressure: Low
					NOTES
3.1 Personal Protective Equipment: Respirator approved for acid mists; rubber gloves; splashproof goggles; eyewash fountain and safety shower; rubber footwear; face shield.	3. HEALTH HAZARDS				
3.2 Symptoms Following Exposure: Acid mist is irritating to eyes, nose and throat. Liquid causes severe burns of skin and eyes.					
3.3 Treatment of Exposure: INGESTION: have victim drink water or milk; do NOT induce vomiting. EYES: flush with plenty of water for at least 15 min.; call a doctor. SKIN: flush with plenty of water.					
3.4 TLV-TWA: 1 mg/m ³					
3.5 TLV-STEL: 3 mg/m ³					
3.6 TLV-Ceiling: Not listed.					
3.7 Toxicity by Ingestion: Severe burns of mouth and stomach.					
3.8 Toxicity by Inhalation: Currently not available.					
3.9 Chronic Toxicity: None.					
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of eye and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.					
3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second-and third-degree burns on short contact; very injurious to the eyes.					
3.12 Odor Threshold: 1 mg/m ³					
3.13IDLH Value: 15 mg/m ³					
3.14 OSHA PEL-TWA: 1 mg/m ³					
3.15 OSHA PEL-STEL: Not listed.					
3.16 OSHA PEL-Ceiling: Not listed.					
3.17 EPA AEGL: Not listed					

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
59	119.200	68	0.330		NOT PERTINENT		CURRENTLY NOT AVAILABLE

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	MISCELLANEOUS			NOT PERTINENT	NOT PERTINENT		NOT PERTINENT