

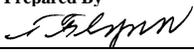
ORION MATERIAL SAFETY DATA SHEET

a subsidiary of Thermedics Inc.
a Thermo Electron Company

Sheet 1 OF 2

Orion Research, Inc
500 Cummings Center
Beverly, MA 01915-6199 USA
Telephone 978-232-6000

I. PRODUCT IDENTIFICATION

Product Name: Sulfuric Acid Reagent - 1% Sulfuric Acid	Catalog No. 193030 (Part of 193032)	Effective Date 3/5/99
Hazardous DOT Shipment Labeling: Corrosive/Sulfuric Acid UN 1830	IATA Corrosive/ Sulphuric Acid UN 1830	
Prepared By 	Title Quality Assurance Chemist	
Approved By 	Title Director Regulatory Matters	

II. HAZARDOUS INGREDIENTS (IDENTIFY INFORMATION)

Hazardous Components * Specific Chemical Identity: Common Name(s)	CAS NO.	%	OSHA PEL	ACGIH TLV	LD ₅₀ mg/Kg
Sulfuric Acid (H ₂ SO ₄)	7664-93-9	1	1mg/m ³	1mg/m ³	135 (UNR-MAN)
Steol CS-460 (Wetting Agent)	*NA	<1	NA	NA	NA
**Deionized Water (H ₂ O)	7732-18-5	>98	NA	NA	629,000 (ORL-DOG)

III. PHYSICAL DATA

Boiling Point 750mm Hg >100°C	Freezing Point <0°C
Specific Gravity (H₂O=1) 1.0	Vapor Pressure @ NA
pH @ 25 °C (1.0 - 1.5)	Solubility In Water, % by Wt @ Miscible
Volatiles % By Wt. NA	Evaporation Rate (BUTYL, ACETATE = 1) NA
Vapor Density (AIR = 1) NA	
Appearance and Odor Colorless odorless liquid.	

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) NA	Autoignition Temperature NA
Flammable Limits in air, % by volume:	Lower NA Upper NA
Extinguishing Media Dry chemical	
Special Fire-Fighting Procedures Self-contained breathing apparatus should be worn	
Unusual Fire and Explosion Hazards This solution is not combustible but will react with other chemicals (Hyroxides) and even water.	

*Chemicals which are not classified as hazardous per U.S. OSHA guidelines (29CFR Parts 1915.2 or 1916.2) or the Massachusetts Substance List (105CMR670.000 Appendix A) will not necessarily be listed on this form even though one or more may be a constituent of this product

* NA Not available/not applicable

** Non-hazardous component

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated. Safe use of the materials is the responsibility of the user.

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Sheet 2 OF 2

**PRODUCT NAME: Sulfuric Acid Reagent
1% Sulfuric Acid**

**Catalog No.: 193030
(Part of 193032)**

V. REACTIVITY DATA

Stability: Unstable	Stable	X	Conditions to Avoid NA
Incompatibility (Materials to avoid)	Organic acids, metals, fulminates		
Hazardous Decomposition Products	Toxic gases and vapors may be released when sulfuric acid decomposes		
Hazardous Polymerization: May Occur	Will Not Occur	X	Condition to Avoid NA

VI. HEALTH HAZARD DATA

Route(s) Of Entry:	Inhalation? Yes	Skin? Yes	Ingestion? Yes
Health Hazards (acute and chronic) Because of low concentration, this product is only moderately hazardous via inhalation. Acute: irritation of eyes, nose, throat, and skin. Chronic: may cause burns, erode teeth, cause the mouth to become sore, chronic irritation or inflammation of the nose and throat.			
Carcinogenicity:	NTP? Not found on these lists.	IARC Monographs?	OSHA Regulated?
Signs and Symptoms of Exposure Irritation of skin, sores or burns on skin, excessive watering of eyes.			
Medical Conditions Generally Aggravated by Exposure		Diseases of the skin	
Emergency And First Aid Procedures Eyes: Irrigate with water at least 15 minutes. Skin: wash with water. Ingestion: give large quantities of water. Get medical attention immediately. Inhalation: fresh air and artificial respiration. Consult physician for all modes of exposure.			

VII. PRECAUTIONS (SAFE HANDLING AND USE)

Steps To be Taken In Case Material Is Released or Spilled Vacuum up and set aside for waste disposal.
Waste Disposal Method Consult and observe all Federal, State, and local laws when disposing of this product.
Precautions To Be Taken In Handling and Storing <u>NFPA Rating:</u> Scale (0-4); Health - 2, Fire - 0 Reactivity - 0, Specific - Acid.
Other Precautions H ₂ SO ₄ is a <u>CERCLA</u> hazard RQ = 1,000 lbs and it is subject to Sections 302, 304 and 313 of <u>SARA Title III</u> : Not found on <u>CAL Prop 65</u> . H ₂ SO ₄ is found in EPA TSCA inventory.

VIII. CONTROL MEASURES

Respiratory Protection (specify type)		Escape; GMAG HI EP; SCRA	
Ventilation	Local Exhaust Control to exposure limits	Special None	
Ventilation	Mechanical (General) None	Other None	
Protective Gloves	Yes - rubber	Eye Protection	Safety Glasses
Other Protective Clothing Or Equipment Lab coat			
Work/Hygienic Practices Emergency eye wash must be available.			