

OFI TESTING EQUIPMENT, INC.
MATERIAL SAFETY DATA SHEET

Effective Date:02/25/02

SECTION I - PRODUCT IDENTIFICATION	
Chemical Name:	SULFURIC ACID SOLUTION (<1%) WITH PROPYLENE GLYCOL
Trade Name:	SULFURIC ACID STANDARDIZED SOLUTION, N/10 & N/50, with ANTIFREEZE GRADE
OFI Part No.	230-09,230-05,230-07,230-09-1,230-09-5,230-01,230-11,230-03,230-01-1,230-01-5
Chemical Family:	Sulfuric Acid:Propylene Glycol
Formula:	H ₂ SO ₄ : H ₂ O
SECTION II - HAZARDOUS CONSTITUENTS	
CAS #:	CHEMICAL NAME
7664-93-9	Sulfuric Acid 0.1 to 1.0%
57-55-6	Propylene Glycol < 40%
SECTION III - PHYSICAL PROPERTIES	
Appearance / Odor:	Clear, Colorless Liquid / Odorless
Solubility:	Miscible in Water
Specific Gravity:	1.0 to 1.02
pH:	0.1 N solution (ca. 0.5% w/w) =1.2; 0.01N solution (ca. 0.05% w/w)=2.1
% Volatiles by Vol.:	> 95
Melting Point:	3 °C (100%), -32 °C (93%), -64 °C (65%)
Boiling Point:	No Information Found
Vapor Density (Air=1):	No Information Found
Vapor Pressure (mmHg):	No Information Found
SECTION IV - FIRE, EXPLOSION AND REACTIVITY	
Fire:	Not Combustable, but Substance is a Strong Oxidizer and its Heat of Reaction with Reducing Agents or Combustables may Cause Ignition. Flash Point (PMCC): >230 °F (>110 °C), Auto Ignition Temperature: > 780 °F (>415 °C).
Explosion:	Contact with Most Metals Causes Formation of Flammable and Explosive Hydrogen Gas.
Fire Extinguishing Media:	Dry Chemical, Foam or Carbon Dioxide. Concentrated Solutions are Water Sensitive. In the Event of Fire, Wear Full Protective Clothing and NIOSH-Approved Self-Contained
Special Information:	Breathing Apparatus with Full Facepiece Operated in the Pressure Demand or Other Positive Pressure Mode. Structural Firefighter's Protective Clothing is Ineffective for Fires Involving this Material. Stay Away from Sealed Containers.
General Reactivity:	Stable Under Ordinary Conditions of Use and Storage.
Hazardous Decomposition:	Toxic Fumes of Oxides Sulfur when Heated to Decomposition. Will React with Water or Steam to Produce Toxic and Corrosive Fumes. Reacts with Carbonates to Generate Carbon Dioxide Gas, and with Cyanides and Sulfides to Form Poisonous Hydrogen Cyanide and H ₂ S.
Incompatibilities:	Bases, Organic Material, Halogens, Metal Acetylides, Oxides and Hydrides, Metals (yields Hydrogen Gas), Strong Oxidizing and Reducing Agents and many other Reactive
Hazardous Polymerization:	Substances. Will Not Occur.
SECTION V - HEALTH HAZARD INFORMATION	
Inhalation:	Effects Should be Less Severe than from Exposure to Higher Concentrations of Sulfuric Acid. Symptoms may Include Irritation of the Nose and Throat, and Labored Breathing as Well as Lung Edema, Damage to the Mucous Membranes and Upper Respiratory Tract.
Ingestion:	Should be Less Severe than from Exposure to Higher Concentrations of Sulfuric Acid. Symptoms may Include Severe Burns of the Mouth, Throat, and Stomach. Circulatory Collapse with Clammy Skin, Weak and Rapid Pulse, Shallow Respirations, and Scanty Urine may Follow Ingestion or Skin Contact. Circulatory Shock is Often the Immediate cause of Death. May Cause Sore Throat, Vomiting, and Diarrhea.
Skin:	Effects Should be Less Severe than from Exposure to Higher Concentrations of Sulfuric Acid. Symptoms my Include Redness, Pain, and Burns to the Skin. Circulatory Collapse with Clammy Skin, Weak and Rapid Pulse, Shallow Respirations, and Scanty Urine may Follow Skin Contact or Ingestion.
Eye Contact:	Symptoms may Include Blurred Vision, Redness, Pain and Burns to Eye Tissue. Concentrated Solutions can Cause Blindness.
Chronic Exposure:	Long-Term Exposure to Mist or Vapors may Cause Damage to Teeth. Chronic Exposure to Mists Containing Sulfuric Acid is a Cancer Hazard.

SECTION V - HEALTH, HAZARD INFORMATION (cont.)	
Carcinogenic References:	The International Agency for Research on Cancer (IARC) has Classified "Strong Inorganic Acid Mists Containing Sulfuric Acid" as a known Human Carcinogen. This Classification applies only
Aggravated by Exposure:	to Mists Containing Sulfuric Acid and Not to Sulfuric Acid or Sulfuric Acid Solutions. Persons with Pre-Existing skin Disorders or Eye Disease May be more Susceptable to the Effects of this Substance.
SECTION VI - EMERGENCY & FIRST AID PROCEDURES	
Inhalation:	Remove to Fresh Air. If not Breathing, Give Artificial Respiration. If Breathing is Difficult, Give Oxygen. Get Medical Attention.
Ingestion:	DO NOT INDUCE VOMITING! Give Large Quantities of Water. Never Give Anything by Mouth to an Unconscious Person. Get Medical Attention Immediately.
Skin:	Immediately Flush Skin with Plenty of Water for at Least 15 Minutes while Removing Contaminated Clothing and Shoes. Wash Clothing Before Reuse. Excess Acid can be Neutralized with a 2% Solution of Bicarbonate of Soda. Call a Physician Immediately.
Eyes:	Immediately Flush Eyes with Gentle but Large Stream of Water for at Least 15 Minutes, Lifting Lower and Upper Eyelids Occasionally. Get Medical Attention Immediately.
SECTION VII - INDUSTRIAL HYGIENE MEASURES	
Ventilation System:	A System of Local and/or General Exhaust is Recommended to Keep Employee Exposures Below the Airborne Exposure Limits. Local Exhaust Ventilation is Generally Preferred Because it can Control the Emissions of the Contaminant at its Source, Preventing Dispersion of it into the General Work Area.
Airborne Exposure Limits:	OSHA Permissible Exposure (PEL) 1 mg/m ³ (Ceiling)-ACGIH (TLV) 1 mg/m ³ (TWA), 3 mg/m ³
Personal Respirators: (NIOSH APPROVED)	If the Exposure Limit is Exceeded, a Full Facepiece Respirator with an Acid Gas Cartridge may be Worn up to 50 times the Exposure Limit or the Maximum use Concentration Specified by the Appropriate Regulatory Agency or Respirator Supplier, Whichever is Lowest. Emergencies Where Exposure Limits are Not Known, use Full-Facepiece Positive-Pressure Air Supplied Respirator.
Skin Protection:	Wear Impervious Protective Clothing, Including Boots, Apron, Gloves, Lab Coat or Coveralls, as Appropriate, to Prevent Skin Contact.
Eye Protection:	Use Chemical Safety Goggles and/or Full Face Shield where Splashing is Possible. Maintain Eye Wash Fountain and Quick-Drench Facilities in Work Area.
SECTION VIII - INDUSTRIAL HYGIENE MEASURES	
Accidental Release:	Ventilate area of Leak or Spill. Wear Appropriate Personal Protective Equipment as Specified in Section 7. Isolate Hazard Area. Keep Unnecessary and Unprotected Personnel from Entering. Contain and Recover Liquid when Possible. Neutralize with Alkaline Material (Soda-Ash, Lime), then Absorb with an Inert Material (e.g., Vermiculite, Dry Sand, Earth), and place in a Chemical Waste Container. Do Not Use Combustible Materials, such as Saw Dust. Do Not Flush to Sewer! US Regulations (CERCLA) Require Reporting Spills and Releases to Soil,
Disposal:	Water and Air in Excess of Reportable Quantities.
Environmental Fate:	When Released into the Soil, this Material may Leach into Groundwater.
SECTION IX - SPECIAL PRECAUTIONS	
Handling and Storage:	Store in a Cool, Dry, Ventilated Storage Area with Acid Resistant Floors and Good Drainage. Protect from Physical Damage. Keep Out of Direct Sunlight and Away from Heat, Water, and Incompatible Materials. Do Not Wash out Container and Use it for Other Purposes. Never Use Hot Water and Never Add Water to Acid when Diluting. Water Added to Acid can Cause Uncontrolled Boiling and Splashing.
SECTION X - DOT SHIPPING REQUIREMENTS	
Shipping Name:	Sulfuric Acid
Hazard Class:	8
Identification No.:	UN2796, Packing Group II
NFPA Rating:	HEALTH-3, FLAMMABILITY-1, REACTIVITY-0
SECTION XI - IN CASE OF EMERGENCY	
(713) 880 - 9884	OFI TESTING EQUIPMENT, INC. - Regular Business Hours
(713) 880 - 9885	OFI TESTING EQUIPMENT, INC. - After Regular Business Hours

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