

OFI TESTING EQUIPMENT, INC.
MATERIAL SAFETY DATA SHEET

Effective Date:02/25/02

SECTION I - PRODUCT IDENTIFICATION	
Chemical Name:	SULFURIC ACID SOLUTION (10 to 51%) WITH METHANOL
Trade Name:	SULFURIC ACID VOLUMETRIC SOLUTION,5N With ANTIFREEZE (AF)
OFI Part No.	230-13-X
Chemical Family:	Sulfuric Acid
Formula:	H ₂ SO ₄ : CH ₃ OH : H ₂ O
SECTION II - HAZARDOUS CONSTITUENTS	
CAS #:	CHEMICAL NAME
7664-93-9	Sulfuric Acid 1.0 to 14.0%
67-56-1	Methyl Alcohol < 40.0% by Volume
SECTION III - PHYSICAL PROPERTIES	
Appearance / Odor:	Clear, Colorless Liquid / Slight Alcohol Like Odor
Solubility:	Miscible in Water.
Specific Gravity:	< 1.0
pH:	0.1N solution (ca. 0.5% w/w) = 1.2; 0.01N solution (ca. 0.05% w/w) = 2.1
% Volatiles by Vol.:	> 95
Melting Point:	No Information Found.
Boiling Point:	147 ° F (64 °C) - Methanol
Vapor Density (Air=1):	1.1 - Methanol
Vapor Pressure (mmHg):	96 @ 77 °F (25 °C) - Methanol
SECTION IV - FIRE, EXPLOSION AND REACTIVITY	
Fire:	Flash Point: 52 °F (11 °C) CC, Auto Ignition Temperature: 867 °F (464 °C) Flammable Limits in Air % by Volume: lel 6.0, uel 36.0. Listed Fire Data is for Methyl Alcohol (major component).
Explosion:	Above Flash Point, Vapor-Air Mixtures are Explosive within Flammable Limits noted above. Sensitive to Static Discharge. Vapors can Flow Along Surfaces to Distant Ignition Source and Flash Back. Containers can Build Up Pressure if Exposed to Heat and/or Fire.
Fire Extinguishing Media:	Alcohol-Resistant Foam, Dry Chemical, Foam or Carbon Dioxide. Water Spray may be used to Keep Fire Exposed Containers Cool, Dilute Spills to Nonflammable Mixtures, Protect Personnel Attempting to Stop Leak and Disperse Vapors.
Special Information:	In the Event of Fire, Wear Full Protective Clothing and NIOSH-Approved Self-Contained Breathing Apparatus with Full Facepiece Operated in the Pressure Demand or Other Postitive Pressure Mode.
General Reactivity:	Stable Under Ordinary Conditions of Use and Storage. Heat can Contribute to Instability. Toxic Fumes of Oxides of Sulfur when Heated to Decomposition. Will React with Water and Steam to Produce Toxic and Corrosive Fumes. Carbon Dioxide, Carbon Monoxide, and Formaldehyde may Form when Heated to Decomposition.
Hazardous Decomposition:	
Incompatibilities:	Bases, Organic Material, Halogens, Metal Acetylides, Oxides, Reducing Agents, Nitric Acid, and Potassium Tertbutoxide.
Hazardous Polymerization:	Will Not Occur.
SECTION V - HEALTH HAZARD INFORMATION	
Inhalation:	CORROSIVE! Effects Should be Less Severe than from Exposure to Higher Concentrations of Sulfuric Acid. Inhalation of Vapors Irritates the Respiratory Tract. Exposure to High Concentrations has a Narcotic Effect, Producing Symptoms of Dizziness, Drowsiness, Headache, Staggering, Unconsciousness and Possibly Death.
Ingestion:	CORROSIVE! Should be Less Severe than from Exposure to Higer Concentrations of Sulfuric Acid. Symptoms may Include Severe Burns to the Mouth, Throat, and Stomach. May Cause Respiratory Tract Irritation. May Cause Respiratory Failure. May Cause Vascular Collapse and Damage. May Cause Kidney Failure.
Skin:	CORROSIVE!May Cause Irritation with Redness and Pain. May be Absorbed Through the Skin with Possible Systemic Effects.
Eye Contact	CORROSIVE! Vapors Cause Eye Irritation. Splashes Cause Severe Irritation, Possible Corneal Burns to Eye Tissue and Permanent Eye Damage.
Chronic Exposure:	Chronic Exposures may Cause Skin Effects. May Cause Damage to Teeth.

SECTION V - HEALTH, HAZARD INFORMATION (cont.)	
Carcinogenic References:	IARC has Classified "Strong Inorganic Mists " Containing Sulfuric Acid as a Known Carcinogen.
Aggravated by Exposure:	Persons with Pre-Existing Skin Disorders or Eye Problems or Impaired Respiratory Function, or Impaired Liver or Kidney Function may be More Susceptible to the Effects of this Agent.
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 Amounts of Water to Drink. Never Give Anything by Mouth to an Unconscious Person. Get Medical Attention.
Skin:	Immediately Flush Skin with Plenty of Water for at Least 15 Minutes. Call a Physician if Irritation Develops.
Eyes:	Immediately Flush Eyes with Plenty of Water for at Least 15 Minutes, Lifting Upper and Lower 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 Limit (PEL) 200 ppm (TWA) ACGIH Threshold Limit (TLV) 200 ppm (TWA), 200 ppm (STEL). Methyl Alcohol.
Personal Respirators: (NIOSH APPROVED)	A Full-Face piece Organic Vapor Respirator 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. For Emergencies or Instances Where the Exposure Levels are Not Known, Use a Full-Facepiece Positive-Pressure, Air Supplied Respirator.
Skin Protection:	Wear Impervious Protective Clothing, Including Boots, Gloves, Lab Coat, Apron or Coveralls, as Appropriate, to Prevent Skin Contact. Neoprene and Nitrile Rubber are Recommended.
Eye Protection:	Use Chemical Safety Goggles and/or a 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 or Leak or Spill. Remove all Sources of Ignition. 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. Use Non-Sparking Tools and Equipment. Neutralize with Soda Ash or Lime and 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, Water and Air.
Disposal:	When Released to the Soil and Water, this Material may Evaporate to Moderate Extent. When Released into the Soil, This Material may Leach into Groundwater. When Released into the Water, This Material is Expected to have a Half Life Between 1 and 10 Days.
Environmental Fate:	
SECTION IX - SPECIAL PRECAUTIONS	
Handling and Storage:	Keep in a Tightly Closed Container, Stored in a Cool, Dry, Ventilated Area. Protect against Physical Damage and where a Fire Hazard May be Acute. Storage and Use should be No Smoking Areas. Do Not Pressurize, Cut, Weld, Braze, Solder, Drill, Grind or Expose Containers to Heat, Sparks, Flame, Static Electricity or Other Sources of Ignition. Containers of this Material may be Hazardous when Empty since they Retain Product Residues.
SECTION X - DOT SHIPPING REQUIREMENTS	
Shipping Name:	FLAMMABLE LIQUIDS, CORROSIVE, n.o.s. (Methanol, Sulfuric Acid)
Hazard Class:	3
Identification No.:	UN2924, Packing Group: II
NFPA Rating:	HEALTH-3, FLAMMABILITY-3, REACTIVITY-1
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