

OFI TESTING EQUIPMENT, INC.
MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT AND COMPANY IDENTIFICATION	
Chemical Name:	SULFURIC ACID SOLUTION (<51%)
Trade Name:	SULFURIC ACID VOLUMETRIC SOLUTION, 5N
OFI Part No.	230-12, 230-12-2, 230-12-3, 230-12-5, 230-13, 230-13-1, 230-14, 230-15, 230-15-01
Chemical Family:	Sulfuric Acid
Formula:	H ₂ SO ₄ : H ₂ O
Manufacturer:	OFI Testing Equipment, Inc. 1006 West 34 th Street Houston, TX 77018 U.S.A. (713) 880-9885
In Case of Emergency Spills, Leaks, Fire, Exposure or Accident:	In the USA, call INFOTRAC at 1-800-535-5053 day or night Outside the USA, call collect, (352) 323-3500
SECTION II - COMPOSITION/ INFORMATION ON INGREDIENTS	
CAS #:	CHEMICAL NAME
7664-93-9	Sulfuric Acid 10-51%
SECTION III - HAZARD IDENTIFICATION	
Emergency Overview:	Poison! Danger! Corrosive. Liquid and mist cause severe burns to all body tissue. May be fatal if swallowed or contacted with skin. Harmful if inhaled. Affects teeth. Water reactive. Cancer hazard. Strong inorganic acid mists containing sulfuric acid can cause cancer. Risk of cancer depends on duration and level of exposure.
Inhalation:	Corrosive! Effects should be less severe than from exposure to higher concentrations of sulfuric acid. Symptoms may include irritation of the nose and throat, labored breathing, as well as lung edema, damage to mucous membranes and upper respiratory tract.
Ingestion:	Corrosive! Effects should be less severe than from exposure to higher concentrations of sulfuric acid. Symptoms 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.
Skin:	Corrosive! Can cause Redness, Pain, and Severe Skin Burns. Circulatory Collapse with Clammy Skin, Weak and Rapid Pulse, Shallow Respirations, and Scanty Urine may Follow Skin Contact or Ingestion. Circulatory Shock is Often the Immediate cause of Death.
Eye Contact:	Corrosive! Contact can cause Blurred Vision, Redness, Pain and Severe Tissue Burns. 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.
Aggravated by Exposure:	Persons with Pre-Existing skin Disorders or Eye Disease May be more Susceptible to the Effects of this Substance.
SECTION IV - FIRST AID MEASURES	
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
Ingestion:	Do Not Induce Vomiting. Give large quantities of water. Never give anything by mouth anything by mouth to an unconscious person. Call a physician immediately.
Skin Contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Excess acid on skin can be neutralized with a 2% solution of bicarbonate of soda. Call a physician immediately.
Eye Contact:	Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

SECTION V - FIRE FIGHTING MEASURES	
Fire:	Not Combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.
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 reactive.
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 Positive Pressure Mode. Structural Firefighter's Protective Clothing is Ineffective for Fires Involving this Material. Stay Away from Sealed Containers.
SECTION VI - ACCIDENTAL RELEASE MEASURES	
Accidental Release:	Ventilate area of Leak or Spill. Wear Appropriate Personal Protective Equipment as Specified in Section 8. 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.
SECTION VII - HANDLING AND STORAGE	
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 VIII- EXPOSURE CONTROL/ PERSONAL PROTECTION	
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 (TWA)-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 IX -PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Clearer oily liquid.
Odor:	Odorless
Solubility:	Miscible with water, liberates much heat.
Specific Gravity:	1.40 (50%) 1.07 (10%)
pH:	1 N solution (ca. 5% w/w) = 0.3; 0.1 N solution (ca. 0.5% w/w) = 1.2; 0.01 N solution (ca. 0.05% w/w) = 2.1.
% Volatiles by volume @21C (70F):	No information Found
Boiling Point:	ca. 290°C (ca. 554°F) (decomposes at 340°C)
Melting Point:	3°C (100%), -32°C (93%), -38°C (78%), -64°C (65%).
Vapor Density (Air=1):	3.4
Vapor Pressure (mm Hg):	1 @ 145.8°C (295°F)
Evaporation Rate (BuAc=1):	No information found.

SECTION X -STABILITY AND REACTIVITY											
General Reactivity:	Concentrated Solutions react Violently with Water, Spattering and Liberating Heat.										
Hazardous Decomposition:	Toxic Fumes of Oxides of Sulfur when Heated to Decomposition. Will React with Water or Steam to Produce Toxic and Corrosive Fumes.										
Incompatibilities:	Reacts with Carbonates to Generate Carbon Dioxide Gas, and with Cyanides and Sulfides to form Poisonous Hydrogen Cyanide and H ₂ S. Water, Bases, Organic Material, Halogens, Metal Acetylides, Oxides and Hydrides, Metals (yields Hydrogen Gas), Strong Oxidizing and Reducing Agents and many other Reactive Substances.										
Hazardous Polymerization:	Will Not Occur.										
SECTION XI - TOXICOLOGICAL INFORMATION											
Carcenogenic 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 to Mists Containing Sulfuric Acid and Not to Sulfuric Acid or Sulfuric Acid Solutions.										
SECTION XII - ECOLOGICAL INFORMATION											
Environmental Fate:	When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.										
Environmental Toxicity:	LC50 Flounder 100 to 330 mg/l/48 hr aerated water/Conditions of bioassay not specified; LC50 Shrimp 80 to 90 mg/l/48 hr aerated water /Conditions of bioassay not specified; LC50 Prawn 42.5 ppm/48 hr salt water /Conditions of bioassay not specified. This material may be toxic to aquatic life.										
SECTION XIII -DISPOSAL CONSIDERATIONS											
Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.											
SECTION XIV -TRANSPORT INFORMATION											
Shipping Name:	SULFURIC ACID SOLUTION										
Hazard Class:	8										
Identification No.:	UN2796 , Packing Group II										
SECTION XV -REGULATORY INFORMATION											
Chemical Inventory Status – Part 1:	<table border="0"> <thead> <tr> <th>Ingredient</th> <th>TSCA</th> <th>EC</th> <th>Japan</th> <th>Australia</th> </tr> </thead> <tbody> <tr> <td>Sulfuric Acid (7664-93-9)</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> </tbody> </table>	Ingredient	TSCA	EC	Japan	Australia	Sulfuric Acid (7664-93-9)	Yes	Yes	Yes	Yes
Ingredient	TSCA	EC	Japan	Australia							
Sulfuric Acid (7664-93-9)	Yes	Yes	Yes	Yes							
Chemical Inventory Status – Part 2:	<table border="0"> <thead> <tr> <th>Ingredient</th> <th>Korea</th> <th>DSL</th> <th>NDSL</th> <th>Phil.</th> </tr> </thead> <tbody> <tr> <td>Sulfuric Acid (7664-93-9)</td> <td>Yes</td> <td>Yes</td> <td>No</td> <td>Yes</td> </tr> </tbody> </table>	Ingredient	Korea	DSL	NDSL	Phil.	Sulfuric Acid (7664-93-9)	Yes	Yes	No	Yes
Ingredient	Korea	DSL	NDSL	Phil.							
Sulfuric Acid (7664-93-9)	Yes	Yes	No	Yes							
Federal, State & International Regulations – Part 1:	<table border="0"> <thead> <tr> <th>Ingredient</th> <th>-SARA RQ</th> <th>302-TPQ</th> <th>-SARA List</th> <th>313- Chemical Catg.</th> </tr> </thead> <tbody> <tr> <td>Sulfuric Acid (7664-93-9)</td> <td>1000</td> <td>1000</td> <td>Yes</td> <td>No</td> </tr> </tbody> </table>	Ingredient	-SARA RQ	302-TPQ	-SARA List	313- Chemical Catg.	Sulfuric Acid (7664-93-9)	1000	1000	Yes	No
Ingredient	-SARA RQ	302-TPQ	-SARA List	313- Chemical Catg.							
Sulfuric Acid (7664-93-9)	1000	1000	Yes	No							
Federal, State & International Regulations – Part 2:	<table border="0"> <thead> <tr> <th>Ingredient</th> <th>CERCLA</th> <th>-RCRA- 261.33</th> <th>-TSCA- 8(d)</th> </tr> </thead> <tbody> <tr> <td>Sulfuric Acid (7664-93-9)</td> <td>1000</td> <td>No</td> <td>No</td> </tr> </tbody> </table>	Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)	Sulfuric Acid (7664-93-9)	1000	No	No		
Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)								
Sulfuric Acid (7664-93-9)	1000	No	No								
Chemical Weapons Convention:	No										
TSCA 12 (b):	No										
CDTA:	Yes										
SARA 311/312:	Acute:Yes Chronic:Yes Fire:No Pressure:No Reactivity:Yes(Pure/Liquid)										
Australian Hazchem Code:	2P										
Poison Schedule:	None Allocated										
SECTION XVI - OTHER INFORMATION											
NFPA Rating:	HEALTH-3, FLAMMABILITY-0, REACTIVITY-2										
Disclaimer:	The information contained herein is based upon data believed to be reliable and reflects our best professional judgment. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein and assume no responsibility regarding the suitability of this information for the user's intended purpose or for the consequence of its use. Each individual should make a determination as to the suitability of the information for his/her particular purpose(s).										