

OFI TESTING EQUIPMENT, INC.
MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT AND COMPANY IDENTIFICATION	
Chemical Name:	AMMONIUM HYDROXIDE SOLUTION (10% - 35% NH ₃)
Trade Name:	AMMONIUM HYDROXIDE CONCENTRATED SOLUTION
OFI Part No.	212-00
Chemical Family:	Ammonium hydroxide solutions; ammonia aqueous; ammonia solutions
Formula:	NH ₄ OH: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
1336-21-6	Ammonium Hydroxide 21.0 to 72.0% (10 to 35% ammonia)
7732-18-5	Water 28-79%
SECTION III - HAZARD IDENTIFICATION	
Emergency Overview:	Poison! Danger! Corrosive. May be fatal if swallowed or inhaled. Mist and vapor cause burns to every area of contact.
Inhalation:	Vapors and mists cause irritation to the respiratory tract. Higher concentrations can cause burns, pulmonary edema and death. Brief exposure to 5000 ppm can be fatal.
Ingestion:	Toxic! May cause corrosion to the esophagus and stomach with perforation and peritonitis. Symptoms may include pain in the mouth, chest, and abdomen, with coughing, vomiting and collapse. Ingestion of as little as 3 to 4 ml may be fatal.
Skin:	Causes irritation and burns to the skin.
Eye Contact:	Vapors cause irritation. Splashes cause severe pain, eye damage, and permanent Blindness.
Chronic Exposure:	Repeated exposure may cause damage to tissues of the mucous membranes, upper respiratory tract, eyes and skin.
Aggravated by Exposure:	Persons with pre-existing eye disorders or impaired respiratory function may be more susceptible to the effects of this material.
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:	If swallowed, 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. Call a physician, immediately. Wash clothing before reuse.
Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper Eyelids occasionally. Get medical attention immediately.
SECTION V - FIRE FIGHTING MEASURES	
Fire:	Autoignition Temperature: 1204 °F (651 °C), Flammable Limits in Air % by Volume: 1el-16, uel-25.
Explosion:	Flammable Vapors may Accumulate in Confined Spaces.
Fire Extinguishing Media:	Use any means Suitable for Extinguishing Surrounding Fire. Use Water Spray to Blanket Fire, Cool Fire Exposed Containers, and to Flush Non-Ignited Spills or Vapors away from Fire.
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.

SECTION VI - ACCIDENTAL RELEASE MEASURES	
	Ventilate Area of Leak or Spill. Keep Unnecessary and Unprotected People away from Area of Spill. Wear Appropriate Personal Protective Equipment as Specified in Section 8. Contain and Recover Liquid when Possible. Do Not Flush Caustic Residues to the Sewer. Residues from Spills can be Diluted with Water, Neutralized with Dilute Acid such as Acetic, Hydrochloric or Sulfuric. Absorb Neutralized Caustic Residue on Clay, Vermiculite or other Inert Substance and Package in a Suitable Container for Disposal. US Regulations (CERCLA) require Reporting Spills and Releases to Soil, Water and Air in Excess of Reportable Quantities.
SECTION VII - HANDLING AND STORAGE	
	Keep in Tightly Closed Container, Stored in a Cool, Dry, Ventilated Area. Protect Against Physical Damage. Separate from Incompatibilities. Store below 77 °F (25 °C). Protect from Direct Sunlight. Containers of this Material May be Hazardous when Empty Since they Retain Product Residues (Vapors, Liquid).
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 Limit (PEL): 50 ppm NH ₃ (STEL), ACGIH Threshold Limit Value (TLV): 25 ppm NH ₃ (TWA) 35 ppm (STEL).
Personal Respirators: (NIOSH APPROVED)	If the Exposure Limit is Exceeded, a Full-Facepiece Respirator with an Ammonia/Methylamine 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. 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 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 / Odor:	Clear Colorless Liquid / Ammonia Odor
Solubility:	Infinitely Soluble
Specific Gravity:	0.9 (28% NH ₄ OH)
pH:	11.6
% Volatiles by Vol.:	No Information Found.
Melting Point:	-98 ° F (-72 °C)
Boiling Point:	ca. 97 ° F (36 °C)
Vapor Density (Air=1):	0.60 NH ₃
Vapor Pressure (mmHg):	115 @ 68 °F (20 °C)
SECTION X - STABILITY AND REACTIVITY	
General Reactivity:	Stable Under Ordinary Conditions of Use and Storage.
Hazardous Decomposition:	Burning may Produce Ammonia, Nitrogen Oxides.
Incompatibilities:	Acids, Acrolein, Dimethyl Sulfate, Halogens, Silver Nitrate, Propylene Oxide, Nitromethane, Silver Oxide, Silver Permanganate, Oleum, Beta-Propiolactone. Most Common Metals.
Hazardous Polymerization:	Will Not Occur.
SECTION XI - TOXICOLOGICAL INFORMATION	
Carcinogenic References:	IARC Category- None, NTP Carcinogen - Known: No
SECTION XII - ECOLOGICAL INFORMATION	
Environmental Fate:	This Material is Not Expected to Significantly Bioaccumulate.
Environmental Toxicity:	This material is expected to be very toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l. The EC50/48-hour values for daphnia are less than 1 mg/l.

SECTION XIII - DISPOSAL CONSIDERATIONS					
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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:	AMMONIA, SOLUTIONS (WITH 10 - 35% AMMONIA)				
Hazard Class:	8				
Identification No.:	UN2672, Packing Group III				
SECTION XV - REGULATORY INFORMATION					
Chemical Inventory Status – Part 1:	Ingredient	TSCA	EC	Japan	Australia
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	Ammonium Hydroxide (1336-21-6)	Yes	Yes	Yes	Yes
	Water (7732-18-5)	Yes	Yes	Yes	Yes
Chemical Inventory Status – Part 2:	Ingredient	Korea	--Canada--		Phil.
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	Ammonium Hydroxide (1336-21-6)	Yes	Yes	No	Yes
	Water (7732-18-5)	Yes	Yes	No	Yes
Federal, State & International Regulations – Part 1:	Ingredient	-SARA RQ	302-TPQ	-----SARA List	313----- Chemical Catg.
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	Ammonium Hydroxide (1336-21-6)	No	No	No	No
	Water (7732-18-5)	No	No	No	No
Federal, State & International Regulations – Part 2:	Ingredient	CERCLA	-RCRA-		-TSCA-
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	Ammonium Hydroxide (1336-21-6)		1000	No	No
	Water (7732-18-5)		No	No	No
Chemical Weapons Convention:	No				
TSCA 12 (b):	No				
CDTA:	No				
SARA 311/312:	Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No (Mixture / Liquid)				
Australian Hazchem Code:	2P				
Poison Schedule:	S6				
SECTION XI - IN CASE OF EMERGENCY					
NFPA Rating:	HEALTH-3, FLAMMABILITY-1, REACTIVITY-0				
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).				