



Safety Data Sheet
According to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Ammonium Hydroxide, 1:1 Volumetric Solution
NCL Catalog Number	A-25
Product Description	Laboratory chemical, for cleaning silver anodes on YSI DO Probes.
Supplier	
NCL of Wisconsin, Inc.	Telephone: 1-800-648-7836 Fax: 715-449-2454
P.O. Box 8	Emergency Contact: 1-800-424-9300 (Chemtrec)
Biramwood, WI 54414	Email: nclabs@nclabs.com

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification

Skin Corrosion	Category 1C
Serious Eye Damage	Category 1
Specific Target Organ Toxicity	Single Exposure Category 3
Aquatic Acute	Category 2



Signal Word Danger

Hazard Statements

H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.

Precautionary Statements

P260	Do not breathe mist/vapors/spray.
P264	Wash exposed skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363	Wash contaminated clothing before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to comply with local, state, and federal regulations.

Other Hazards Not Contributing to the Classification None under normal conditions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity Not applicable

Common Name Not applicable

Mixture

Name	CAS #	Approximate %
Water	7732-18-5	85
Ammonium Hydroxide, 28-30% w/w	1336-21-6	15

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General First Aid Measures Never give anything by mouth to an unconscious person. Seek medical advice if you feel unwell.

If Inhaled Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor if you feel unwell.

In Case of Skin Contact Remove contaminated clothing and shower/wash exposed skin with mild soap and water. Rinse with warm water. Immediately call a POISON CENTER or doctor.

In Case of Eye Contact Immediately flush eyes with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

If Swallowed Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

Most Important Symptoms/Effects Acute and Delayed

Symptoms/Injuries Causes severe skin burns and eye damage.

After Inhalation May cause respiratory irritation.

After Eye Contact Causes serious eye damage.

Indication of Immediate Medical Attention and Special Treatment Needed

Seek medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media Foam. Dry powder. Sand. Carbon dioxide. Water spray.

Unsuitable Extinguishing Media Do not use high pressure water stream.

Special Hazards Arising from the Chemical Thermal decomposition generates corrosive vapors.

Special Protective Actions for Fire-Fighters Wear self-contained breathing apparatus and protective clothing. Keep exposed containers cool with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment (see section 8). Safety glasses, gloves, gas/dust mask. Evacuate area of non-essential personnel. Eliminate ignition sources.

Environmental Precautions Prevent entry to surface and ground waters.

Methods and Materials for Containment and Cleaning Up Clean up spill with inert absorbent material. Collect spillage. Store away from other materials. Ensure compliance with local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling Avoid contact with eyes and skin. Avoid breathing vapors. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Conditions for Safe Storage Including any Incompatibilities Keep in a tightly closed container, stored in a cool, dry, ventilated area. Store away from sunlight, which can contribute to instability. Store away from strong oxidizers,

strong bases, and strong acids.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ammonium Hydroxide, 28-30% w/w (1336-21-6)		
USA ACGIH	ACGIH TWA (ppm)	25 ppm
USA ACGIH	ACGIH TWA (mg/m ³)	17 mg/m ³
USA ACGIH	ACGIH STEL (ppm)	35 ppm
USA ACGIH	ACGIH STEL (mg/m ³)	24 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	35 mg/m ³

Appropriate Engineering Controls

Material should be handled or transferred in a fume hood or with equivalent ventilation. Maintain eye-wash fountain and quick-drench facilities in work area.

Individual Protection Measures

Avoid all unnecessary exposure.

Eye/Face Protection

Use chemical safety goggles and /or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye-wash fountain and quick-drench facilities in work area.

Skin Protection

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

Respiratory Protection

Wear appropriate mask.

Other Information

Do not eat, drink, or smoke when using this product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Colorless
Odor	Ammonia odor
Odor Threshold	Not determined
pH	Not determined
Melting Point/Freezing Point	Not determined
Initial Boiling Point and Boiling Range	Not determined
Flash Point	Not determined
Evaporation Rate	Not determined
Flammability (Solid, Gas)	Not determined
Upper/Lower Flammability/Explosive Limits	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Relative Density	Not determined
Solubility	Soluble in water.
Partition Coefficient: n-octanol/water	Not determined
Auto-Ignition Temperature	Not determined
Decomposition Temperature	Not determined
Viscosity	Not determined

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Thermal decomposition generates nitric oxide fumes and gaseous ammonia.
Chemical Stability	Stable under ordinary conditions of use and storage.
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	Extremely high or low temperatures. Heat and sunlight can contribute to instability.
Incompatible Materials	Acids, acrolein, dimethyl sulfate, halogens, silver nitrate, propylene oxide, nitromethane, silver oxides, silver permanganate, oleum, beta-propiolactone.
Hazardous Decomposition Products	Thermal decomposition generates nitric oxide fumes and gaseous ammonia.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity	Not classified
Ammonium Hydroxide, 28-30% w/w (1336-21-6)	
LD50 oral rat	350 mg/kg
Water (7732-18-5)	
LD50 oral rat	≥90000 mg/kg
Skin Corrosion/Irritation	Causes severe skin burns.
Serious Eye Damage/Irritation	Causes serious eye damage.
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive Toxicity	Not classified
Specific Target Organ Toxicity (Single Exposure)	May cause respiratory irritation.
Specific Target Organ Toxicity (Repeated Exposure)	Not classified
Aspiration Hazard	Not classified
Potential Adverse Human Health Effects and Symptoms	No data available.
Symptoms/Injuries After Inhalation	May cause respiratory irritation.
Symptoms/Injuries After Eye Contact	Causes serious eye damage.
Likely Routes of Exposure	Inhalation, skin, and eye contact.
Other Information	Not available

SECTION 12: ECOLOGICAL INFORMATION

Ecology – Water Toxicity Toxic to aquatic life.

Ammonium Hydroxide, 28-30% w/w (1336-21-6)	
LC50 fishes 1	0.16-1.1 mg/l (96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>) Solution ≥50%)
LC50 other aquatic organisms	1-10 mg/l (96 h; Solution ≥50%)
LC50 fish 2	0.75-3.4 mg/l (96 h; <i>Pimephales promelas</i> ; Solution ≥50%)
TLM fish 1	47 ppm (48 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>); Cool water)
TLM fish 2	1-10 mg/l (96 h; Solution ≥50%)

Persistence and Degradability	Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No test data on the mobility of the components of the mixture available. Ozonation in the air.
Bioaccumulative Potential	Not established
Mobility in Soil	Not established
Other Adverse Effects	Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of Disposal

Disposal Recommendations Dispose of contents/containers in accordance with local, state and federal regulations.

Other Information Avoid release to the surrounding environment.

SECTION 14: TRANSPORT INFORMATION

UN Number UN2672

UN Shipping Name Ammonia Solution

Transport Hazard Class(es) Not determined

Packing Group Not applicable

Environmental Hazards Not applicable

Transport in Bulk Not applicable

Other Precautions Not applicable

SECTION 15: REGULATORY INFORMATION

Ammonium Hydroxide, 28-30% w/w (1336-21-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
RQ (Reportable quantity)	1000 lb
Ammonium Hydroxide, 50% v/v	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

SECTION 16: OTHER INFORMATION

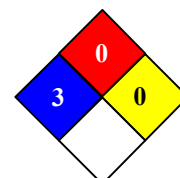
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NFPA Hazards

Health Hazard 3: Short exposure could cause serious temporary or moderate residual injury.

Fire Hazard 0: Materials that will not burn under typical fire conditions.

Reactivity/Instability 0: Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health 3: Major injury likely unless prompt action is taken and medical treatment is given.

Flammability 0: Materials that will not burn.

Physical Hazard 0: Materials that are normally stable, even under fire conditions, and will not react with water.

Personal Protection H

A-25	
Health	3
Flammability	0
Physical Hazard	0
Personal Protection	H

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, NCL of Wisconsin, Inc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for their conditions of use. Accordingly, NCL of Wisconsin, Inc. will not be responsible for damages of any kind resulting from the use of or reliance upon such information.

END OF SAFETY DATA SHEET