



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

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name Ammonium Chloride-Ammonium Hydroxide Buffer Solution
NCL Catalog Number A-18B
Product Description Laboratory chemical
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 Irritation Category 2
Eye Irritation Category 2A
Aquatic Acute Category 2



Signal Word Warning

Hazard Statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H401 Toxic to aquatic life.

Precautionary Statements

P264 Wash exposed skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
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	92.7
Ammonium Chloride	12125-02-9	5.3
Ammonium Hydroxide, 28-30% w/w	1336-21-6	2

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. Allow victim to rest. Get medical attention if you feel unwell.
In Case of Skin Contact	Remove contaminated clothing and wash exposed skin with mild soap and water. Rinse with warm water. Get medical attention if irritation develops.
In Case of Eye Contact	Immediately flush eyes with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops.
If Swallowed	Rinse mouth. Do NOT induce vomiting. Get medical attention if you feel unwell.

Most Important Symptoms/Effects Acute and Delayed

After Skin Contact	Causes skin irritation.
After Eye Contact	Causes serious eye irritation.

Indication of Immediate Medical Attention and Special Treatment Needed

No additional information available.

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

No additional information available.

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. 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 acids.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

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

Ammonium Chloride (12125-02-9)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 (mg/m ³)
USA OSHA	OSHA PEL STEL (mg/m ³)	20 (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.

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	Clear, 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	Not determined
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	No data available
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	Strong acids.
Hazardous Decomposition Products	When heated to decomposition, can emit toxic gases, carbon dioxide, carbon monoxide, gaseous ammonia and hydrogen chloride.

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
Ammonium Chloride (12125-02-9)	
LD50 oral rat	1650 mg/kg

Skin Corrosion/Irritation	Causes skin irritation.
Serious Eye Damage/Irritation	Causes serious eye irritation.
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive Toxicity	Not classified
Specific Target Organ Toxicity (Single Exposure)	Not classified
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 Skin Contact	Causes skin irritation.
Symptoms/Injuries After Eye Contact	Causes serious eye irritation.
Likely Routes of Exposure	Inhalation. Skin and eye contact.
Other Information	Not available

SECTION 12: ECOLOGICAL INFORMATION

Ecology – Water Toxicity Harmful to aquatic life.

Ammonium Hydroxide, 28-30% w/w (1336-21-6)	
LC50 fish 1	0.16-1.1 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss) Solution \geq 50%)
LC50 other aquatic organisms	1-10 mg/l (96 h; Solution \geq 50%)
LC50 fish 2	0.75-3.4 mg/l (96 h; Pimephales promelas; Solution \geq 50%)
TLM fish 1	47 ppm (48 h; Salmo gairdneri (Oncorhynchus mykiss); Cool water)
TLM fish 2	1-10 mg/l, (96 h; Solution \geq 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 applicable
Packing Group	Not applicable
Environmental Hazards	Not applicable
Transport in Bulk	Not applicable
Other Precautions	Not applicable

SECTION 15: REGULATORY INFORMATION

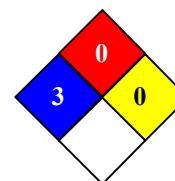
Ammonium Chloride (12125-02-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Ammonium Hydroxide, 28-30% w/w (1336-21-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific Toxic Chemical Listings)	
RQ (Reportable quantity)	1000 lb
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

SECTION 16: OTHER INFORMATION

Revision Date: 01/21/2015

NFPA Hazards

Health Hazard	3: Short exposure could cause serious temporary or moderate residual injury.
Fire Hazard	0: Materials that will not burn.
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.
Personal Protection	B

A-18B	
Health	3
Flammability	0
Physical Hazard	0
Personal Protection	B

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