



# Ammonium Hydroxide, 5-19.9% Ammonia

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations (WHMIS 2015)

Revision Date: 01/30/20

Version: 2.2

### SECTION 1: IDENTIFICATION

#### Product Identifier

**Product Name:** Ammonium Hydroxide, 5-19.9% Ammonia

**Synonyms:** Aqua Ammonia, Ammonium Hydroxide

**Intended Use of the Product** Not available

#### Name, Address, and Telephone of the Responsible Party

##### Company

LSB Chemical L.L.C.

1080 Industrial Drive

Cherokee, AL 35616

T (256) 359-7000 – F (256) 359-4450

#### Emergency Telephone Number

**Emergency number** : 1-800-424-9300 (CHEMTREC)

### SECTION 2: HAZARDS IDENTIFICATION

#### Classification of the Substance or Mixture

##### Classification (GHS-US)

Acute Tox. 4 (Oral) H302

Skin Corr. 1B H314

Eye Dam. 1 H318

STOT SE 3 H335

Aquatic Acute 1 H400

Aquatic Chronic 2 H411

#### Label Elements

##### GHS-US Labeling

##### Hazard Pictograms (GHS-US)



##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H400 - Very toxic to aquatic life  
H411 - Toxic to aquatic life with long lasting effects

##### Precautionary Statements (GHS-US)

: P260 - Do not breathe vapors, mist, spray.  
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, eye protection, respiratory protection.  
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
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/physician.

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P312 - Call a POISON CENTER/doctor/physician if you feel unwell.  
P321 - Specific treatment (see section 4).  
P330 - If swallowed, rinse mouth.  
P363 - Wash contaminated clothing before reuse.  
P391 - Collect spillage.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container to local, regional, national, territorial, provincial, and international regulations.

### Other Hazards

**Other Hazards Not Contributing to the Classification:** Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. Ammonium hydroxide is very volatile and may release anhydrous ammonia as a gas. Anhydrous ammonia is flammable, toxic by inhalation and corrosive. Take all appropriate precautions.

**Unknown Acute Toxicity (GHS-US)** Not available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Substances

#### Mixture

Name	Product identifier	% (w/w)	Classification (GHS-US)
Ammonium hydroxide	(CAS No) 1336-21-6	100	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 1, H400
Contains	Product identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	80.1 - 95	Not classified
Ammonia*	(CAS No) 7664-41-7	5 – 10, 10 - 30	Flam. Gas 2, H221 Compressed gas, H280 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary due to varying composition.

\*WHMIS concentration ranges are prescribed, the actual concentration of Ammonia (CAS No 7664-41-7) is 5.0 – 19.9%

Full text of H-phrases: see section 16

## SECTION 4: FIRST AID MEASURES

### Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call for medical assistance.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash contaminated clothing before reuse. Immediately call for medical assistance.

**Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call for medical assistance.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Immediately call for medical assistance.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation.

**Inhalation:** May cause respiratory irritation. Inhalation may cause immediate severe irritation progressing quickly to chemical burns. May cause drowsiness or dizziness. May release ammonia gas which can be fatal in high enough concentrations.

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**Skin Contact:** Causes severe irritation which will progress to chemical burns.

**Eye Contact:** Causes serious eye damage. Causes severe irritation which will progress to chemical burns.

**Ingestion:** Swallowing a small quantity of this material will result in serious health hazard.

**Chronic Symptoms:** Not available

### **Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, get medical advice and attention.

## **SECTION 5: FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

**Suitable Extinguishing Media:** Water spray, fog, carbon dioxide, foam, dry chemical.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Not considered flammable but escaping ammonia gas can burn in the range of 16-25% in air.

**Explosion Hazard:** Can form explosive compounds with many heavy metals (Silver, lead, zinc, etc.) and their salts.

**Reactivity:** Thermal decomposition generates : Corrosive vapors. Toxic Gas. Ammonium hydroxide reacts with many heavy metals and their salts forming explosive compounds. It attacks many metals forming flammable/explosive gas. The solution in water is a strong base, it reacts violently with acids.

### **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Ammonia. Nitrogen oxides.

**Other information:** Do not allow the product to be released into the environment. Do not allow run-off from fire fighting to enter drains or water courses.

### **Reference to Other Sections**

Refer to section 9 for flammability properties.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Do not allow product to spread into the environment. Do NOT breathe (vapors, mist, spray). Avoid all contact with skin, eyes, or clothing.

#### **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

### **Environmental Precautions**

Prevent entry to sewers and public waters. Avoid release to the environment.

### **Methods and Material for Containment and Cleaning Up**

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Use only non-sparking tools. As an immediate precautionary measure, isolate spill or leak area in all directions.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Collect spillage. Absorb and/or contain spill with inert material, then place in suitable container. Contact competent authorities after a spill.

### **Reference to Other Sections**

See section 8, Exposure Controls and Personal Protection.

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### SECTION 7: HANDLING AND STORAGE

#### Precautions for Safe Handling

**Additional Hazards When Processed:** Ammonium hydroxide is very volatile and may release anhydrous ammonia as a gas. Anhydrous ammonia is flammable, toxic by inhalation and corrosive. Take all appropriate precautions. Ammonium hydroxide reacts with many heavy metals and their salts forming explosive compounds. It attacks many metals forming flammable/explosive gas. The solution in water is a strong base, it reacts violently with acids. Use only non-sparking tools. Pressure may build in closed containers and flammable vapors may accumulate, open containers with care. Easily corrodes some metals (i.e. copper, copper alloys, zinc, brass).

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Always wash your hands immediately after handling this product, and again before leaving the workplace.

#### Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely high or low temperatures, heat, direct sunlight, ignition sources, incompatible materials. Store locked up.

**Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Heavy metals.

**Specific End Use(s)** Not available

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control Parameters

Ammonia (7664-41-7)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	18 mg/m <sup>3</sup>
Mexico	OEL TWA (ppm)	25 ppm
Mexico	OEL STEL (mg/m <sup>3</sup> )	27 mg/m <sup>3</sup>
Mexico	OEL STEL (ppm)	35 ppm
USA ACGIH	ACGIH TWA (ppm)	25 ppm
USA ACGIH	ACGIH STEL (ppm)	35 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	35 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	50 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	18 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	25 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	27 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (ppm)	35 ppm
USA IDLH	US IDLH (ppm)	300 ppm
Alberta	OEL STEL (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>
Alberta	OEL STEL (ppm)	35 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	25 ppm
British Columbia	OEL STEL (ppm)	35 ppm
British Columbia	OEL TWA (ppm)	25 ppm
Manitoba	OEL STEL (ppm)	35 ppm
Manitoba	OEL TWA (ppm)	25 ppm
New Brunswick	OEL STEL (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>
New Brunswick	OEL STEL (ppm)	35 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	25 ppm
Newfoundland & Labrador	OEL STEL (ppm)	35 ppm
Newfoundland & Labrador	OEL TWA (ppm)	25 ppm
Nova Scotia	OEL STEL (ppm)	35 ppm
Nova Scotia	OEL TWA (ppm)	25 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>

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Nunavut	OEL STEL (ppm)	35 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	25 ppm
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>
Northwest Territories	OEL STEL (ppm)	35 ppm
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>
Northwest Territories	OEL TWA (ppm)	25 ppm
Ontario	OEL STEL (ppm)	35 ppm
Ontario	OEL TWA (ppm)	25 ppm
Prince Edward Island	OEL STEL (ppm)	35 ppm
Prince Edward Island	OEL TWA (ppm)	25 ppm
Québec	VECD (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>
Québec	VECD (ppm)	35 ppm
Québec	VEMP (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>
Québec	VEMP (ppm)	25 ppm
Saskatchewan	OEL STEL (ppm)	35 ppm
Saskatchewan	OEL TWA (ppm)	25 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	30 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	40 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	18 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	25 ppm

### Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Use explosion-proof equipment. Gas detectors should be used when flammable gases/vapours may be released.

**Personal Protective Equipment:** Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection. Protective goggles.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Corrosion-proof clothing.

**Hand Protection:** Wear chemically resistant protective gloves.

**Eye Protection:** Chemical goggles or face shield.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Colorless
Odor	: Pungent
Odor Threshold	: Not available
pH	: ~ 11.6 (1 N NH <sub>3</sub> solution)
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: -9.4 °C (15°F, 10% solution)
Freezing Point	: Not available
Boiling Point	: 71.1 °C (160°F, 10% solution)
Flash Point	: Not available
Auto-ignition Temperature	: Not available

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<b>Decomposition Temperature</b>	: Not available
<b>Flammability (solid, gas)</b>	: Not available
<b>Lower Flammable Limit</b>	: 16 % (NH <sub>3</sub> )
<b>Upper Flammable Limit</b>	: 25 % (NH <sub>3</sub> )
<b>Vapor Pressure</b>	: 130 mm Hg (@26.7°C (80°F), 10% solution)
<b>Relative Vapor Density at 20 °C</b>	: 0.6 (@0°C(32°F)) air=1
<b>Relative Density</b>	: Not available
<b>Specific Gravity</b>	: 0.96 (20°C (68°F), water=1)
<b>Solubility</b>	: Complete.
<b>Viscosity</b>	: Not available
<b>Explosion Data – Sensitivity to Mechanical Impact</b>	: Not available
<b>Explosion Data – Sensitivity to Static Discharge</b>	: Not available
<b>Volatility</b>	: 100%

### SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Thermal decomposition generates : Corrosive vapors. Toxic Gas. Ammonium hydroxide reacts with many heavy metals and their salts forming explosive compounds. It attacks many metals forming flammable/explosive gas. The solution in water is a strong base, it reacts violently with acids.

**Chemical Stability:** Stable at normal temperatures and pressure, above ambient temperature ammonia gas may be released.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Halogens. Heavy metals. Bleaching agents. Copper. Zinc.

**Hazardous Decomposition Products:** Thermal decomposition generates : Corrosive vapors. Toxic gases. Ammonia. Nitrogen oxides.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Information on Toxicological Effects - Product

**Acute Toxicity:** Harmful if swallowed.

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Causes severe skin burns and eye damage. **pH:** ~ 11.6 (1 N NH<sub>3</sub> solution)

**Serious Eye Damage/Irritation:** Causes serious eye damage. **pH:** ~ 11.6 (1 N NH<sub>3</sub> solution)

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Teratogenicity:** Not available

**Carcinogenicity:** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** May cause respiratory irritation.

**Aspiration Hazard:** Not classified

**Potential Adverse Human Health Effects and Symptoms:** Harmful if swallowed.

**Symptoms/Injuries After Inhalation:** May cause respiratory irritation. Inhalation may cause immediate severe irritation progressing quickly to chemical burns. May cause drowsiness or dizziness. May release ammonia gas which can be fatal in high enough concentrations.

**Symptoms/Injuries After Skin Contact:** Causes severe irritation which will progress to chemical burns.

**Symptoms/Injuries After Eye Contact:** Causes serious eye damage. Causes severe irritation which will progress to chemical burns.

**Symptoms/Injuries After Ingestion:** Swallowing a small quantity of this material will result in serious health hazard.

#### Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

<b>Water (7732-18-5)</b>	
LD50 Oral Rat	> 90000 mg/kg
<b>Ammonia (7664-41-7)</b>	
LC50 Inhalation Rat (mg/l)	5.1 mg/l (Exposure time: 1 h)

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LC50 Inhalation Rat (ppm)	2000 ppm/4h (Exposure time: 4 h)
<b>Ammonium hydroxide (1336-21-6)</b>	
LD50 Oral Rat	350 mg/kg

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

**Ecology - General:** Very toxic to aquatic life with long lasting effects.

<b>Ammonia (7664-41-7)</b>	
LC50 Fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)
EC50 Daphnia 1	25.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	0.26 - 4.6 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

<b>Ammonium hydroxide (1336-21-6)</b>	
LC50 Fish 1	8.2 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.66 mg/l (Exposure time: 48 h - Species: water flea)
EC50 Daphnia 2	0.66 mg/l (Exposure time: 48 h - Species: Daphnia pulex)

### Persistence and Degradability

<b>Ammonium Hydroxide (5-19.9% Ammonia)</b>	
Persistence and Degradability	May cause long-term adverse effects in the environment.

### Bioaccumulative Potential

<b>Ammonium Hydroxide (5-19.9% Ammonia)</b>	
Bioaccumulative Potential	Not established.

<b>Ammonia (7664-41-7)</b>	
Log Pow	-1.14 (at 25 °C)

**Mobility in Soil** Not available

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Flammable vapors may accumulate in the container.

**Ecology – Waste Materials:** This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

## SECTION 14: TRANSPORT INFORMATION

### For >10 to 19.9% Ammonia Solutions

#### 14.1 In Accordance with DOT

**Proper Shipping Name** : AMMONIA SOLUTION  
**Hazard Class** : 8  
**Identification Number** : UN2672  
**Label Codes** : 8  
**Packing Group** : III  
**Marine Pollutant** : Marine pollutant  
**ERG Number** : 154



#### 14.2 In Accordance with IMDG

**Proper Shipping Name** : AMMONIA SOLUTION  
**Hazard Class** : 8  
**Identification Number** : UN2672  
**Packing Group** : III  
**Label Codes** : 8  
**EmS-No. (Fire)** : F-A  
**EmS-No. (Spillage)** : S-B



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**Marine pollutant** : Marine pollutant

### 14.3 In Accordance with IATA

**Proper Shipping Name** : AMMONIA SOLUTION

**Packing Group** : III

**Identification Number** : UN2672

**Hazard Class** : 8

**Label Codes** : 8

**ERG Code (IATA)** : 8L



### 14.4 In Accordance with TDG

**Proper Shipping Name** : AMMONIA SOLUTION

**Packing Group** : III

**Hazard Class** : 8

**Identification Number** : UN2672

**Label Codes** : 8

**Marine Pollutant (TDG)** : Marine pollutant



### For 5 to 10% Ammonia Solutions

#### 14.1 In Accordance with DOT

**Proper Shipping Name** : CORROSIVE LIQUID, N.O.S.(contains ammonia)

**Hazard Class** : 8

**Identification Number** : UN1760

**Label Codes** : 8

**Packing Group** : III

**Marine Pollutant** : Marine pollutant

**ERG Number** : 154



#### 14.2 In Accordance with IMDG

**Proper Shipping Name** : CORROSIVE LIQUID, N.O.S.(contains ammonia)

**Hazard Class** : 8

**Identification Number** : UN1760

**Packing Group** : III

**Label Codes** : 8

**EmS-No. (Fire)** : F-A

**EmS-No. (Spillage)** : S-B

**Marine pollutant** : Marine pollutant



#### 14.3 In Accordance with IATA

**Proper Shipping Name** : CORROSIVE LIQUID, N.O.S. (contains ammonia)

**Packing Group** : III

**Identification Number** : UN1760

**Hazard Class** : 8

**Label Codes** : 8

**ERG Code (IATA)** : 8L



#### 14.4 In Accordance with TDG

**Proper Shipping Name** : CORROSIVE LIQUID, N.O.S.(contains ammonia)

**Packing Group** : III

**Hazard Class** : 8

**Identification Number** : UN1760

**Label Codes** : 8

**Marine Pollutant (TDG)** : Marine pollutant





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### SECTION 15: REGULATORY INFORMATION

#### US Federal Regulations

<b>Ammonium Hydroxide (5-19.9% Ammonia)</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard
<b>Water (7732-18-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Ammonia (7664-41-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 302 (Specific toxic chemical listings) Listed on SARA Section 313 (Specific toxic chemical listings)	
<b>SARA Section 302 Threshold Planning Quantity (TPQ)</b>	500
<b>SARA Section 311/312 Hazard Classes</b>	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard
<b>SARA Section 313 - Emission Reporting</b>	1.0 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)
<b>Ammonium hydroxide (1336-21-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

#### US State Regulations

<b>Ammonia (7664-41-7)</b>
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728) U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min) U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr) U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities U.S. - Delaware - Accidental Release Prevention Regulations - Toxic Endpoints U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities U.S. - Florida - Essential Chemicals List U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs) U.S. - Idaho - Occupational Exposure Limits - TWAs U.S. - Louisiana - Reportable Quantity List for Pollutants U.S. - Maine - Air Pollutants - Criteria Pollutants U.S. - Massachusetts - Allowable Ambient Limits (AALs) U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs) U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2 RTK - U.S. - Massachusetts - Right To Know List U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs) U.S. - Massachusetts - Toxics Use Reduction Act U.S. - Michigan - Occupational Exposure Limits - STELs

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U.S. - Michigan - Polluting Materials List  
U.S. - Michigan - Process Safety Management Highly Hazardous Chemicals  
U.S. - Minnesota - Chemicals of High Concern  
U.S. - Minnesota - Hazardous Substance List  
U.S. - Minnesota - Permissible Exposure Limits - STELS  
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour  
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Environmental Hazardous Substances List  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)  
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria  
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)  
U.S. - New Mexico - Precursor Chemicals  
U.S. - New York - Occupational Exposure Limits - TWAs  
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances  
U.S. - North Carolina - Control of Toxic Air Pollutants  
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour  
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour  
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities  
U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities  
U.S. - Oregon - Permissible Exposure Limits - TWAs  
U.S. - Oregon - Precursor Chemicals  
RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour  
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour  
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual  
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria  
U.S. - Rhode Island - Water Quality Standards - Acute Saltwater Aquatic Life Criteria  
U.S. - Rhode Island - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria  
U.S. - Rhode Island - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria  
U.S. - Tennessee - Occupational Exposure Limits - STELS  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Vermont - Permissible Exposure Limits - STELS  
U.S. - Virginia - Water Quality Standards - Acute Freshwater Aquatic Life  
U.S. - Virginia - Water Quality Standards - Acute Saltwater Aquatic Life  
U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life  
U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life  
U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits  
U.S. - Virginia - Water Quality Standards - Surface Waters Not Used for the Public Water Supply Effluent Limits  
U.S. - Washington - Permissible Exposure Limits - STELS  
U.S. - Washington - Permissible Exposure Limits - TWAs  
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet  
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet  
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater  
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet  
U.S. - Wyoming - Process Safety Management - Highly Hazardous Chemicals  
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water  
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water  
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Marine Water

# Ammonium Hydroxide, 5-19.9% Ammonia

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U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water

U.S. - Alaska - Ambient Air Quality Standards

### Ammonium hydroxide (1336-21-6)

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities

U.S. - Louisiana - Reportable Quantity List for Pollutants

U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1

U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2

U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity

U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1

U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2

RTK - U.S. - Massachusetts - Right To Know List

U.S. - Massachusetts - Toxics Use Reduction Act

U.S. - Michigan - Polluting Materials List

U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New Jersey - Special Health Hazards Substances List

U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

RTK - U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

### Canadian Regulations

#### Ammonium Hydroxide (5-19.9% Ammonia)

WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material
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#### Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
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#### Ammonia (7664-41-7)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Listed on the Canadian Ingredient Disclosure List

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class E - Corrosive Material
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#### Ammonium hydroxide (1336-21-6)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Listed on the Canadian Ingredient Disclosure List

WHMIS Classification	Class E - Corrosive Material Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

# Ammonium Hydroxide, 5-19.9% Ammonia

## Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations (WHMIS 2015)

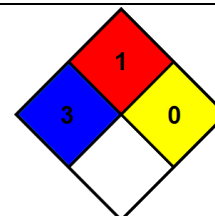
### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision date** : 01/30/2020  
**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### GHS Full Text Phrases:

Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Compressed Gas	Gases under pressure Compressed gas
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Flam. Gas 2	Flammable gases Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H221	Flammable gas
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

**NFPA Health Hazard** : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.  
**NFPA Fire Hazard** : 1 - Must be preheated before ignition can occur.  
**NFPA Reactivity** : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



#### Party Responsible for the Preparation of This Document

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

North America GHS US 2012 & WHMIS