SAFETY DATA SHEET

This SAFETY DATA SHEET complies with the Canadian Controlled Product Regulations and the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard.

1. Product and Supplier Identification

Product:	Ammonia
Chemical Name:	Ammonia, Anhydrous, Azane
Synonyms:	Ammonia, Liquefied
Formula:	NH_3
Chemical Family:	Ammonia

Company Identification: OCI Beaumont, LLC
5740 N. Twin City Hwy
Nederland, Texas 77627

Non-Emergency Telephone: (409) 723-1947

Emergency Telephone: 1-800-424-9300
CHEMTREC (Canada & US)

Note: CHEMTREC number to be used only in the event of chemical emergencies involving a spill, leak fire, exposure, or accident involving chemicals.

2. Hazards Identification

GHS Classifications

Environmental	Health	Physical
Acute Aquatic Toxicity, Category 1	Acute Toxicity, Inhalation, Category 3 Serious Eye Damage, Category 1 Skin Corrosion, Category 1B	Flammable Gases, Category 2 Gases Under Pressure (Compressed Gas)

GHS Labels

 Corrosion	 Skull and Crossbones
DANGER	DANGER
H314: Causes severe skin burns and eye damage.	H330: Fatal if inhaled.

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

 Gas cylinder	 Environment
WARNING	WARNING
H280: Contains gas under pressure, may explode if heated.	H400: Very toxic to aquatic life.
WARNING	
H221: Flammable gas.	

PRECAUTIONARY STATEMENT(S)

Prevention:

P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P271: Use only outdoors or in well-ventilated area.
P273: Avoid release to the environment.
P284: Wear respiratory protection.

Response:

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352: IF ON SKIN: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P304+P341: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391: Collect spillage.

Storage:

P405: Store locked up.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard Description: This product is a toxic, corrosive gas and may be fatal if inhaled, ingested or absorbed through skin. Contact with gas or liquefied gas may cause burns, severe injury, and/or frostbite. Skin and respiratory related diseases aggravated by exposure. Not recognized by OSHA as a carcinogen. Not listed in the National Toxicology Program annual report. Not listed as a carcinogen by the International Agency for Research on Cancer (IARC). Please read

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

the entire contents of Section 2 of this Safety Data Sheet (SDS) for details.

Signs and Symptoms: Contact with this material in high concentrations can cause burns to the skin, eyes and mucous membranes. Cough, shortness of breath, headache, nausea, vomiting. Be aware that symptoms of lung edema (shortness of breath from excess collection of fluid) may develop up to 24 hours after exposure.

Routes of Exposure: Inhalation. Skin contact. Eye contact.

Target Organs: Eyes, skin, digestive tract, and mucous membranes.

Effects of Short-Term (Acute) Exposure:

Eye Contact: Causes eye burns. Direct contact with liquefied gas may cause eye damage from frostbite. May cause blindness.

Skin Contact: Causes skin burns. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

Inhalation: Can cause severe respiratory irritation. May cause lung edema. Harmful if inhaled in high concentration. Vapors are extremely irritating and corrosive. Fire will produce irritating, corrosive and/or toxic gases.

Ingestion: Harmful if swallowed. However, this material is a gas under normal atmospheric conditions and ingestion is unlikely.

Effects of Long-Term (Chronic) Exposure: May cause damage to the liver and kidneys. May cause central nervous system effects.

3. Hazards Identification

Chemical Name	Mol. Wt.	Vol. %	CAS	EINECS	Classification
Ammonia	17.03	99	7664-41-7	200-827-9	R10, R23, R34, R50

*Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

4. First Aid Measures

Eye Contact: Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

contaminated clothing and shoes. If frostbite occurs, immerse affected area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Get medical attention immediately. Chemical burns must be treated by a physician.

Inhalation: Move victim to fresh air. Call 911 or emergency medical service Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device Administer oxygen if breathing is difficult.

Ingestion: Call a physician or poison control center immediately. DO NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration. This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Notes to Physician: Signs and symptoms of CNS depression, confusion and convulsions should be considered in the assessment and treatment of victims of exposure. Be aware that symptoms of lung edema (shortness of breath from excess collection of fluid) may develop up to 24 hours after exposure. Lung injury may appear as a delayed phenomenon; pulmonary edema may follow chemical bronchitis. Supportive treatment with necessary ventilation actions, including oxygen, may warrant consideration.

General Advice: Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire Fighting Measures

Lower Explosive Limit: 15%

Upper Explosion Limit: 28%

Flammable Properties: Containers can burst violently when heated, due to excess pressure build-up.

Suitable Extinguishing Media:

Small Fire - Dry chemical or CO_2.
Large Fire - Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.

Unsuitable Extinguishing Media: Not applicable.

Hazardous Combustion Products: Upon decomposition, this product may yield poisonous gases including oxides of nitrogen, hydrogen gas and ammonia. Decomposition temperature may be lowered to 575 °F (302 °C) by contact with certain metals, such as nickel.

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Protection of Firefighters: Must wear protective clothing and respiratory protection. See "Protective Equipment and Precautions for Firefighters" within this section for more information.

Specific Hazards Arising from the Chemical: Flammable gas - may cause flash fire. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

Protective Equipment and Precautions for Firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Chemical protective clothing is needed if contact with vapor or liquid is anticipated.

Firefighting Equipment/Instructions: Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Chemical protective clothing is needed if contact with vapor or liquid is anticipated.

Firefighting Equipment: Precautions for Fire Involving Tanks or Car/Trailer Loads - Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Use a fog, spray pattern and never put directly onto the leak point. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. Isolate for 1600 meters (1 mile) in all directions; also consider initial evacuation for 1600 meters (1 mile) in all directions. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Fire Explosion: This material may burn, but will not ignite readily. This product may react violently with water. Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices and ruptured cylinders may rocket. Containers may explode when heated.

Specific Methods: Evacuate area. Cool containers exposed to flames with water until well after the fire is out. Do not get water inside container. Remove pressurized gas cylinders from the immediate vicinity. Close the valve if no risk is involved. Do not extinguish a leaking gas fire unless leak can be stopped. If leak cannot be stopped and no danger to surrounding area allow the fire to burn out. Fight fire from a protected location.

6. Accidental Release Measures

Small Spill: For emergency information and procedures to follow in the case of an accidental release, call the Emergency Telephone Number(s) listed in Section 1 of this SDS. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). If possible, turn leaking containers so that gas escapes rather than liquid. As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material.

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Large Spill: Use similar response procedures as indicated under Small Spill. Consider initial downwind evacuation for at least 500 meters (1/3 mile).

Personal Precautions: If leakage cannot be stopped, evacuate area. Avoid contact with cold gas. Avoid inhalation and contact with skin and eyes. In aqueous solution: Avoid contact with spilled material. Wear appropriate personal protective equipment.

Methods for Containment: Stop leak if you can do so without risk. Use water spray to reduce vapors or divert vapor cloud drift. **DO NOT** put water directly on leak, spill area or inside container. In aqueous solution: Collect runoff for disposal as potential hazardous waste. Prevent entry into waterways, sewer, basements or confined areas.

Methods for Cleaning Up: Ventilate well, stop flow of gas or liquid if possible. Allow gas to evaporate. Remove sources of ignition. Beware of the explosion danger. Vapor can be controlled using a water fog. In aqueous solution: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place it into a container for later disposal.

Other information: Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling: Avoid inhalation and contact with skin and eyes. Do not get in eyes, on skin, on clothing. Do not breathe gas. Use only with adequate ventilation. Open valve slowly. Ensure that cylinders are not exposed to heat. When using, do not eat, drink or smoke. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Observe good industrial hygiene practices.

Storage: Compressed gas storage. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Store in a cool and well-ventilated place. Secure cylinders in an upright position at all times; close all valves when not in use. Secure cylinders from falling or being knocked over.

8. Exposure Controls, Personal Protection

Engineering Controls: Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation. If engineering measures are not sufficient to maintain concentrations below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. An eye wash and safety shower must be available in the immediate work area.

General Hygiene Considerations: Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands after handling.

Eye/Face Protection: Wear approved, tight fitting safety goggles where splashing is probable.

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Gas-proof goggles are recommended. Use of a full-face respirator with a canister or cartridge approved for NH_3 is best practice.

Skin Protection: Thermally protective gloves are recommended. Suitable gloves can be recommended by the glove supplier. Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory Protection: Respirator type: Chemical respirator with specific cartridge and full-face piece providing protection against the compound of concern. Seek advice from supervisor on the company's respiratory protection standards. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)						
		EXPOSURE LIMITS				
		OSHA PEL		ACGIH TLV		NIOSH
Chemical Name		**ppm**	**mg/m^3**	**ppm**	**mg/m^3**	**ppm**
Ammonia	**TWA**	50	35	25	18	25
	STEL	NE	NE	35	27	35
	IDLH					300

9. Physical and Chemical Properties

Appearance:	Compressed liquefied gas	**Color:**	Colorless
Odor:	Pungent/Irritating	**Odor Threshold:**	5 ppm
Physical State:	Gas compressed, liquefied	**Form:**	Compressed liquefied gas
pH:	11.7 (approximate)	**Melting Point:**	- 30.8°F (- 34.9°C)
Freezing Point:	- 30.8°F (- 34.9°C)	**Boiling Point:**	- 28.1°F (- 33.4°C)
Flash Point:	11°C	**Evaporation Rate:**	Not available
Vapor Pressure:	124 PSIA at 68°F (20°C) 1822 mmHg	**Vapor Density:**	0.6 at 32°F (0°C) (Air = 1)
Specific Gravity:	0.633 at 39°F (4°C) (Water = 1)	**Solubility (Water):**	34% at 68°F (20°C)
Auto-Ignition Temp.:	1203.8°F (651°C)	**Viscosity:**	0.266 cP at - 29°F (- 34°C)
Bulk Density:	620 kg/m^3 at - 9°F (16°C)	**Percent Volatile:**	100%

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Molecular Weight:	17.03 g/mol	**Molecular Formula:**	NH_3

10. Stability and Reactivity

Chemical Stability: Stable under normal temperature conditions and recommended use.

Polymerization: This product is not anticipated to cause hazardous reactions or polymerizations under normal ambient storage and handling conditions of temperature and pressure.

Conditions to Avoid: Heat, sparks, flames, elevated temperatures. Heat may cause the containers to explode. May form explosive mixtures with air. Contact with acids will cause evolution of heat.

Incompatible Materials: Acids. Halogens. Oxidizing agents. Mercury, silver oxide or hypochlorite can form explosive compounds.

Hazardous Decomposition Products: Upon decomposition, this product may yield poisonous gases including oxides of nitrogen, hydrogen gas and ammonia. Decomposition temperature may be lowered to 575 °F (302 °C) by contact with certain metals, such as nickel.

Possibility of Hazardous Reactions: May react with evolution of heat on contact with water. Hazardous polymerization does not occur.

11. Toxicological Data

Chemical Name	Oral LD_{50} (rat)	Dermal LD_{50} (rabbit)	Inhalation LC_{50} (rat)
Ammonia	No Data Available	No Data Available	2000 ppm (4 hours)

Eyes: Causes eye burns. Direct contact with liquefied gas may cause eye damage from frostbite. May cause blindness.

Skin: Causes skin burns. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

Inhalation: Can cause severe respiratory irritation. May cause lung edema. Harmful if inhaled in high concentration. Vapors are extremely irritating and corrosive. Fire will produce irritating, corrosive and/or toxic gases.

Ingestion: Harmful if swallowed. However, this material is a gas under normal atmospheric conditions and ingestion is unlikely.

Chronic Effects: May cause damage to the liver and kidneys. May cause central nervous

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

system effects.

Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

Sensitization: Not Established.

Neurotoxcity: Not Established.

Genetic Effects: Not Established.

Reproductive Effects: Not Established.

Teratogenic Effects: Not Established.

Mutagenicity: Not Established.

Synergistic Materials: Not Established.

Interactive Effects: Not Established.

12. Ecological Information

Environmental Precautions: In aqueous solution: Avoid release to the environment. Do not contaminate water.

Ecotoxicological Information: This product has no known eco-toxicological effects.

Terrestrial/Microorganism Toxicity:

Acute: Ecological data does not exist.
Chronic: Ecological data does not exist.

Bioaccumulation/Accumulation: Not Established.

Aquatic Toxicity: This product is expected to be very toxic to aquatic life.

Chemical Fate Information: Persistence & Degradability – Readily biodegradable.

General Comments: Any other adverse environmental effects, such as environmental fate (exposure), ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and global warming potential are indicated in this section if data exists. Otherwise, this data has not been established.

13. Disposal Considerations

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

14. Labeling and Shipping

Hazard Class: 2.2 (Nonflammable Gas) (U.S. Domestic)
2.3 (Poison Gas) (International)

Proper Shipping Description: Ammonia, Anhydrous, 2.2, UNI1005, RQ, Inhalation Hazard (U.S. Domestic)
Ammonia, Anhydrous, 2.3, UNI1005, RQ, Poison-Inhalation Hazard Zone "D" (International)

Placard/Label: Nonflammable Gas (U.S. Domestic)
Poison Gas, Corrosive (Subsidiary) (International)

Identification No.: UN1005

15. Regulatory Information

United States

DOT Label Symbol and Hazard Classification

SARA Title III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories: Fire, Pressure Generating, Immediate (Acute) Health Effects, Chronic Health Effects

Fire: Yes **Pressure Generating:** Yes **Reactivity:** No **Acute:** Yes **Chronic:** Yes

EPCRA Section 313 Supplier Notification

Chemical Name	Vol. %	CAS
Ammonia	99	7664-41-7

EPCRA Section 313 Supplier Notification

Chemical Name	Vol. %	CERCLA RQ

P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

Ammonia	99	100

TSCA (Toxic Substance Control Act)

Chemical Name	CAS
Ammonia	7664-41-7

TSCA Regulatory: (TSCA 8b) - All components are listed or exempted.

Clean Air Act

Chemical Name	Vol. %	CAS
Ammonia	99	7664-41-7

States with Special Requirements

Chemical Name	Requirements
Ammonia	CA Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New Jersey TCPA EHS New York Hazardous Substance North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment

Canada

WHMIS Hazard Symbol and Classification (CEPA, Domestic Substances List)

WHMIS CLASS: Class A, Compressed Gas
Class B2, Flammable and Combustible Material
Class D1, Materials Causing Immediate & Serious Toxic Effects
Class E, Corrosive Material

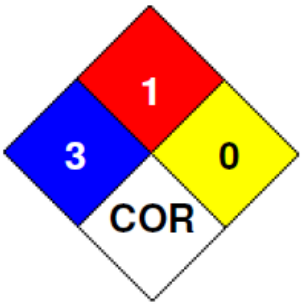
P.O. Box 1647 • 5470 N. Twin City Hwy. • Nederland, Texas 77627 • 409.723.1900

16. Additional Information

HMIS RATING

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	K

NFPA CODES



Relevant R-Phrases:
R10: Flammable.
R23: Toxic by inhalation.
R34: Causes burns.
R50: Very toxic to aquatic organisms.

Preparation Date: July 29, 2013

Prepared By: Total Safety d/b/a EHS Services for
OCI Beaumont, LLC,
P.O. Box 1647, 5470 N. Twin City Hwy.
Nederland, Texas 77627

Total Safety d/b/a EHS Services SDS No.: OCIB101-001

Disclaimer: The information above is believed to be accurate and represents the best information currently available to us. Users should make their own investigation to determine the suitability of the information for their particular purposes. This document is intended as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

OCI Beaumont, LLC and its subsidiaries make no representations or warranties, either express or implied, including without limitation any warranties of merchantability; fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, OCI Beaumont will not be responsible for damages resulting from the use of or reliance upon this information.

Revisions: This SDS replaces the 12/13/2011 SDS issued by OCI Beaumont, LLC.