According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations and According to The Hazardous Products Regulation (February 11, 2015) and their amendments.

Section 1: IDENTIFICATION

Product Name:	Anhydrous Ammonia
Synonyms:	Ammonia.
Product Use:	Agricultural and industrial use.
Restrictions on Use:	Not available.
Manufacturer/Supplier:	LSB Chemical, LLC 3503 NW 63rd Street Suite 500 Oklahoma, OK 73116
Website:	www.lsbindustries.com
Email:	lsbproductsupport@lsbindustries.com
Phone Number:	(405) 235-4546
Emergency Phone:	24 Hour Emergency Telephone Number: 1-800-424-9300 (CHEMTREC)
Date of Preparation of SDS:	January 15, 2026

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification:
Flammable Gases, Category 2
Gases Under Pressure - Compressed Gas
Acute Toxicity - Inhalation, Category 3
Skin Corrosion, Category 1B
Eye Damage, Category 1
Health Hazards Not Otherwise Classified, Category 1

LABEL ELEMENTS

Hazard Pictogram(s):

Signal Word: Danger

Hazard Statements:
H221: Flammable gas.
H280: Contains gas under pressure; may explode if heated.
H331: Toxic if inhaled.
H314: Causes severe skin burns and eye damage.
Causes burns to the respiratory tract.

Precautionary Statements

Prevention:
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe gas.
P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves, protective clothing, eye protection and face protection.

Response: 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 or shower.
P304 + P340: IF INHALED: Remove person to fresh air and keep 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.
P363: Wash contaminated clothing before reuse.
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381: In case of leakage, eliminate all ignition sources.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P410: Protect from sunlight.

Disposal: P501: Dispose of contents and container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% vol./vol.
Ammonia	Not available.	7664-41-7	99.5 - 99.8
Hazardous Ingredient(s)			
Water	H2O	7732-18-5	0.2 - 0.5

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Toxic if inhaled. Causes burns to the respiratory tract. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Very high exposure to Ammonia may cause irritation of the nose, throat, and eyes, chemical pneumonitis, acute pulmonary edema, and sudden death (particularly in confided spaces). Exposures to lower

concentrations produce irritation of the nose, and respiratory tract, coughing, a risk of chemical bronchitis and after an apparent arrest in the symptoms the victim may have a risk of acute pulmonary edema.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result. Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision. Eye exposure to Ammonia may result in temporary or permanent blindness.

Skin Contact: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. If on skin (or hair): Rinse skin with water or shower. Immediately call a poison center or doctor. Thaw frosted parts with lukewarm water. Do not rub affected area. Wash contaminated clothing before reuse. Remove non-adhering contaminated clothing. Do not remove adherent material or clothing.

Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Ingestion: Not a normal route of exposure.

Acute and delayed symptoms and effects: Not a normal route of exposure. Contact with gas escaping the container can cause burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Flammable gas. Contains gas under pressure; may explode if heated. Some may burn but none ignite readily. Vapors from liquefied gas are initially heavier than air and spread along ground. Some of these materials may react violently with water. Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical or CO2.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Do not get water inside containers. Damaged cylinders should be handled only by specialists.

Unsuitable Extinguishing Media: Do not direct water at spill or source of leak. Do not use straight streams.

Products of Combustion: Oxides of nitrogen.

Protection of Firefighters: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources. TOXIC; may be fatal if inhaled. Vapors are extremely irritating and corrosive. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch or walk through spilled

material. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Do not direct water at spill or source of leak. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.

Methods for Clean-Up: Isolate area until gas has dispersed.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not breathe gas. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.

Storage:
Limit quantity of material in storage. Restrict access to storage area. Post appropriate warning signs. Keep storage area separate from populated work areas. Consider leak detection and alarm systems, as required. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Ammonia [CAS No. 7664-41-7]

ACGIH: 25 ppm (TWA); 35 ppm (STEL); (1976);
OSHA: 50 ppm (TWA), 35 mg/m³ (TWA);
35 ppm (STEL) [Vacated];

Water [CAS No. 7732-18-5]

ACGIH: No TLV established.

OSHA: No PEL established.

PEL: Permissible Exposure Limit
TLV: Threshold Limit Value
TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection:	Wear chemical safety goggles, and full face shield. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3:20 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
Hand Protection:	Wear protective gloves. Wear cold insulating gloves. Consult manufacturer specifications for further information.
Skin and Body Protection:	Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20-2017 standards is recommended in areas where material is stored or handled. Clothing with full length sleeves and pants should be worn.
Respiratory Protection:	If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-18, with ammonia gas cartridge and particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Compressed colorless gas.
Color:	Colorless.
Odor:	Pungent.
Odor Threshold:	~ 5 ppm
Physical State:	Gas.
pH (1N solution of water):	11.6
Melting Point / Freezing Point:	-77.7 °C (-107.86 °F)
Initial Boiling Point:	-33.4 °C (-28.12 °F)

Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability:	Flammable gas. See Section 5.
Lower Flammability Limit:	16 %
Upper Flammability Limit:	25 %
Vapor Pressure:	4802.9 mmHg at 15.6 °C (60 °F)
Relative Vapor Density:	0.6 (Air = 1) at 0 °C (32 °F)
Relative Density:	0.62 (Water = 1) at 15.6 °C (60 °F)
Solubility:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Kinematic Viscosity:	Not available.
Percent Volatile, wt. %:	100
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.
Particle Characteristics:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. May be corrosive to metals. Mixtures of ammonia with mercury, gold oxides, and silver can be shock sensitive. Easily dissolves in water, poisonous vapor cloud can be produced.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	Ammonia reacts with hypochlorite or other halogen sources to form explosive compounds that are sensitive to pressure or increases in temperature. Reaction with sulfuric acid or other strong mineral acids is exothermic; mixture becomes boiling hot.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition. Exposure to heat. Exposure to sun. Exposure to extremely low temperatures.
Incompatible Materials:	Strong acids. Strong oxidizers. Metals. Aluminum. Copper. Chlorine. Halogens. Fluorine containing compounds. Metal salts. Sodium hypochlorite (bleach). Mercury.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: 7000 mg/kg (rabbit)

Inhalation: 2000 ppm (rat); 4H

Component Toxicity

Component	CAS No.	LD_{50} oral	LD_{50} dermal	LC_{50}
Ammonia	7664-41-7	Not available.	7000 mg/kg (rabbit)	2000 ppm (rat); 4H

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

Target Organs: Skin. Eyes. Respiratory system. Lungs.

Symptoms (including delayed and immediate effects)

Inhalation: Toxic if inhaled. Causes burns to the respiratory tract. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Very high exposure to Ammonia may cause irritation of the nose, throat, and eyes, chemical pneumonitis, acute pulmonary edema, and sudden death (particularly in confided spaces). Exposures to lower concentrations produce irritation of the nose, and respiratory tract, coughing, a risk of chemical bronchitis and after an apparent arrest in the symptoms the victim may have a risk of acute pulmonary edema.

Eye: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result. Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision. Eye exposure to Ammonia may result in temporary or permanent blindness.

Skin: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Ingestion: Not a normal route of exposure. Contact with gas escaping the container can cause burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Respiratory system. Lungs.

Chronic Effects: Prolonged or repeated exposure to Ammonia may cause eye, liver, kidney, or lung damage.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects
Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: May cause long-term adverse effects in the environment.

Daphnia magna: EC50 = 25.4 mg/L, 48 hr;
Lepomis macrochirus: LC50 = 0.26 - 4.6 mg/L, 96 hr.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: log Pow = -1.14 at 25 °C (77 °F)

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1005, AMMONIA, ANHYDROUS, 2.2

Class: 2.2

UN Number: UN1005

Packing Group: Not applicable.

Placard(s):

ERG Guide: 125

Marine Pollutant: Yes.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1005, AMMONIA, ANHYDROUS, 2.3 (8)

Class: 2.3 (8)

UN Number: UN1005

Packing Group: Not applicable.

Placard(s):

ANHYDROUS AMMONIA, INHALATION HAZARD

ERG Guide: 125

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)
The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)
The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States
This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Ammonia	500	100	100	313	Not listed.	10000

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Ammonia	7664-41-7	E

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Ammonia	7664-41-7	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Ammonia	7664-41-7	E

Note: E = Environmental Hazard

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Any party handling, transferring, transporting, storing, applying or otherwise using this product should review thoroughly all applicable laws, rules, regulations, standards and good engineering practices. Such thorough review should occur before the party handles, transfers, transports, stores, applies or otherwise uses this product.

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Version:	1.1
GHS SDS Prepared by:	**Aegis Regulatory Inc.**
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