Safety Data Sheet

SECTION 1 IDENTIFICATION

Anhydrous Ammonia

Recommended Use: Manufacture of Chemical Products, Fertilizer
Restrictions on Use: Consult supplier when used other than those specified.
Other means of identification: Anhydrous Ammonia Fertilizer 82-0-0
Company Identification
Sherritt
P.O. Box 3388
Fort Saskatchewan, ALBERTA T8L2T3
Canada

Transportation Emergency Response
24-hour Emergency International: 44 (0)1235-239-670
Health Emergency
24-hour Emergency International: 44 (0)1235-239-670
Product Information
SDS Requests: sdsinfo@sherritt.com
Technical Information: 001-780-992-7444

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION:
- Flammable gas: Category 2.
- Gas under pressure: Liquefied gas.
- Acute inhalation toxicant: Category 3.
- Serious eye damage: Category 1.
- Skin corrosion: Category 1.
- Acute aquatic toxicant: Category 1.
- Chronic aquatic toxicant: Category 2.

Signal Word: Danger
Physical Hazards:
- Flammable gas (H221).
- Contains gas under pressure; may explode if heated (H280).

Health Hazards:
- Causes severe skin burns and eye damage (H314).
- Toxic if inhaled; Corrosive to respiratory tract. (H331).

Environmental Hazards:
- Very toxic to aquatic life (H400).
- Toxic to aquatic life with long lasting effects (H411).

PRECAUTIONARY STATEMENTS:
Prevention:

• Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking (P210).
• Keep cool (P235).
• Do not breathe gas (P260).
• Wash thoroughly after handling (P264).
• Use only outdoors or in a well-ventilated area (P271).
• Avoid release to the environment (P273).
• Wear protective gloves, protective clothing, eye protection, and face protection (P280).

Response:
• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting (P301+P330+P331).
• IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower (P303+P361+P353).
• IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340).
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
• Immediately call a POISON CENTER, doctor, or physician (P310).
• Wash contaminated clothing before reuse (P363).
• Leaking gas fire: Do not extinguish, unless leak can be stopped safely (P377).
• In case of leakage, eliminate all ignition sources (P381).
• Collect spillage (P391).

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

Disposal:
• Dispose of contents and container in accordance with applicable local, regional, national, and international regulations (P501).

OTHER HAZARDS: Contact with water forms corrosive ammonium hydroxide.

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Ammonia, anhydrous	7664-41-7	80 - 100 %wt/wt

Note that the actual concentration or concentration range of some or all of the above ingredients is considered confidential business information and is being withheld as permitted by WHMIS 2015.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get immediate medical attention. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. Skin contact with the liquid may result in frostbite and burns. Soak contact area in tepid water to alleviate the immediate effects and get medical attention.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. No specific first aid measures are required because this material is a gas.

Inhalation: During an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes permanent damage, including blindness. Because the liquid product evaporates quickly, it can have a severe chilling effect on eyes and can cause local freezing of tissues (frostbite). Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes permanent damage, including burns and scarring. Symptoms may include pain, itching, discoloration, swelling, and blistering. Because the liquid product evaporates quickly, it can have a severe chilling effect on skin and can cause local freezing of tissues (frostbite). Contact with the skin is not expected to cause an allergic skin response.
Ingestion: Material is a gas and cannot usually be swallowed. May be severely irritating and cause permanent damage to the mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, diarrhea, and, in severe cases, collapse, shock, and death.
Inhalation: Toxic; may be harmful or fatal if inhaled. Corrosive to the respiratory tract. Symptoms may include severe irritation or corrosive lung damage with life-threatening accumulation of fluid (pulmonary edema) which can present as coughing and shortness of breath. Symptoms can be delayed until hours or days after exposure.

DELAYED OR CHRONIC HEALTH EFFECTS: Not expected to cause delayed or chronic effects from short-term or long-term exposure

Indication of any immediate medical attention and special treatment needed
Note to Physicians: Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Allow gas to burn if flow cannot be shut off safely. Apply water from a safe distance to cool container, surrounding equipment and structures. Container areas exposed to direct flame contact should be cooled with large quantities of water (500 gallons water per minute flame impingement exposure) to prevent weakening of container structure. Do not use water spray or a direct stream of water.
UNSUITABLE EXTINGUISHING MEDIA: No data available

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs). SPECIAL NOTES: In case of fire do not extinguish. Stop flow of fuel and allow fire to burn out.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: Do not extinguish. Stop flow of fuel and allow fire to burn out. If flames are accidentally extinguished, explosive reignition may occur. Eliminate ignition sources. Keep people away. Isolate fire area and deny unnecessary entry. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. For unignited vapor cloud, use water spray to knock down and control dispersion of vapors. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out and danger of reignition has passed. This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will evolve when this material undergoes combustion. Combustion may form oxides of: Ammonia, Nitrogen.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Observe all relevant local and international regulations. Eliminate all sources of ignition in vicinity of released gas. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. For large releases, warn public of downwind explosion hazard. Eliminate all sources of ignition in vicinity of spilled material. Keep out unnecessary and unprotected personnel. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions and wear appropriate personal protective equipment as indicated in Section 8.
Spill Management: Stop the source of the release if you can do it without risk. Observe precautions in Exposure Controls/Personal Protection section of the SDS. All equipment used when handling the product must be grounded. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Do not direct water at spill or source of leak. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: This material presents a fire hazard. Gas can catch fire and burn with explosive force. Invisible gas spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Gases are heavier than air and may travel along the ground or into drains to possible distant ignition sources that may cause an explosive flashback. Do not store in open or unlabeled containers. Keep only in the original container in a cool, well-ventilated place.
Do not get in eyes, on skin, or on clothing. Use or store only in a well-ventilated area. Keep container closed when not in use. Clean up spills immediately. Do not taste or swallow. Wash thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Keep cool. Do not breathe gas. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves, protective clothing, eye protection, and face protection.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal

protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE information below.

Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

ENGINEERING CONTROLS:
Use explosion-proof ventilation equipment. Use general ventilation, local exhaust ventilation, or a combination of both.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear eye protection such as safety glasses, chemical goggles, or faceshields if engineering controls or work practices are not adequate to prevent eye contact.
Skin Protection: Wear protective clothing if engineering controls or work practices are not adequate to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include:

Chemical Glove Material	Thickness (mm)	Typical Breakthrough Time (minutes)
Neoprene	--	--
Nitrile Rubber	--	--

Respiratory Protection: A site-specific risk assessment should be conducted by an Occupational Hygienist or a Safety Professional to determine the type and use of respiratory protective equipment. When a site-specific risk assessment determines that respiratory protection is required, use an approved respirator such as:

Air purifying respirator -
If airborne concentration limits exceed the applicable occupational exposure limit but are below the maximum use concentration. Vapors only: organic vapor cartridge (filter type A3 per EN 529:2005).
Vapors and particulates (including generated mists): both an organic vapor cartridge & particulate filter (AP3 filter per EN 529:2005).
Refer to respirator manufacturers to obtain service life of cartridge / filter.

Positive pressure air-supplying respirator -
If airborne concentration limits exceed the maximum use concentration offered from an air purifying respirator.

Refer to EN 529:2005, USA OSHA 1910.134, and/or other applicable local/regional/national/international standards for regulatory requirements.

Occupational Exposure Limits:

Component	Country/ Agency	Form	TWA	STEL	Ceiling	Notation
Ammonia, anhydrous	ACGIH	--	25 ppm	35 ppm	--	--

NOTE ON OCCUPATIONAL EXPOSURE LIMITS: Consult local authorities for acceptable provincial values in Canada. Consult the Canadian Standards Association Standard Z94.4-2011 Selection, Use and Care of Respirators.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless
Physical State: Gas
Odor: Pungent
pH: 12; 10%volume
Vapor Pressure: 6610 mmHg @ 20 °C (68 °F)
Relative Vapor Density: 0.6
Initial Boiling Point / Boiling Range: -33.5°C (-28.3°F)
Solubility: Completely Soluble
Melting Point / Freezing Point: -77.7°C (-107.9°F)
Relative Density: 0.63 @ 15°C (59°F) H20=1
Particle Characteristics: Not applicable
Density: Not available
Kinematic Viscosity: Not available
Coefficient of Therm. Expansion / °F: Not available
Decomposition temperature: 450°C (842°F)
Partition coefficient n-octanol/water (logarithmic value): Not available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): Flammable - Category 2

Flashpoint: Not Applicable
Auto-ignition temperature: 651 °C (1204 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 16 Upper: 25

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid: Avoid contact with metals. Avoid contact with heat, sparks, fire and oxidizing agents Avoid contact with halogens.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur. May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Contact with water forms corrosive ammonium hydroxide solutions.
Incompatibility With Other Materials: Strong acids
Hazardous Decomposition Products: Hydrogen gas (Elevated temperatures), Nitrogen (Elevated temperatures)
Sensitivity to Mechanical Impact: No.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure: Exposure may occur via ingestion, inhalation, or skin and eye contact.

Information on toxicological effects
Serious Eye Damage/Irritation: This material causes serious eye damage. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Corrosion/Irritation: This material causes severe skin burns and eye damage. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: This material is toxic if inhaled. The product has not been tested. The statement is based on evaluation of data for similar materials or product components. For additional information on the acute toxicity of the components, call the technical information center.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure:
The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.
Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes permanent damage, including blindness. Because the liquid product evaporates quickly, it can have a severe chilling effect on eyes and can cause local freezing of tissues (frostbite). Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes permanent damage, including burns and scarring. Symptoms may include pain, itching, discoloration, swelling, and blistering. Because the liquid product evaporates quickly, it can have a severe chilling effect on skin and can cause local freezing of tissues (frostbite). Contact with the skin is not expected to cause an allergic skin response.
Ingestion: Material is a gas and cannot usually be swallowed. May be severely irritating and cause permanent damage to the mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, diarrhea, and, in severe cases, collapse, shock, and death.
Inhalation: Toxic; may be harmful or fatal if inhaled. Corrosive to the respiratory tract. Symptoms may include severe irritation or corrosive lung damage with life-threatening accumulation of fluid (pulmonary edema) which can present as coughing and shortness of breath. Symptoms can be delayed until hours or days after exposure.

DELAYED OR CHRONIC HEALTH EFFECTS: Not expected to cause delayed or chronic effects from short-term or long-term exposure

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Partition coefficient n-octanol/water (logarithmic value): No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of hazardous waste as defined by USEPA under RCRA (40CFR261), Environment Canada, or other State, Provincial, and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

TC Shipping Description: UN1005, AMMONIA, ANHYDROUS, Class 2.3 (8)

IMO/IMDG Shipping Description: UN1005, AMMONIA, ANHYDROUS, Class 2.3 (8); MARINE POLLUTANT

ICAO/IATA Shipping Description: FORBIDDEN FOR TRANSPORT BY AIR.

DOT Shipping Description: UN1005, AMMONIA, ANHYDROUS, Class 2.3 (8)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AIIC (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: This is a new Safety Data Sheet.
No revision information

Revision Date: May 12, 2025

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
WHMIS - Workplace Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the WHMIS 2015 by Sherritt.

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