ALEXANDER CHEMICAL CORPORATION

SAFETY DATA SHEET

1. Identification

Product identifier **ANHYDROUS AMMONIA**

Other means of identification Not available.

Recommended use ANHYDROUS AMMONIA is an excellent acid neutralizer.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Alexander Chemical Corporation

Address 7593 S. First Road,
Kingsbury, Indiana 46345 USA

Fax 219-393-5364

Toll Free (800) 348-8827

E-mail qc@alexchem.com

Website www.alexanderchemical.com

Contact person Keith Bonner

Emergency number

Call CHEMTREC at
CHEMTREC®, USA: 001 (800) 424-9300
CHEMTREC®, Mexico (Toll-Free - must be dialed from within country): 001-800-13-203-9987
CHEMTREC®, Other countries: 001 (703) 527-388

2. Hazard(s) identification

Physical hazards

Flammable gases	Category 2
Gases under pressure	Liquefied gas

Health hazards

Acute toxicity, inhalation	Category 3
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Flammable gas. Contains gas under pressure; may explode if heated. Toxic if inhaled. Causes severe skin burns and eye damage. Very toxic to aquatic life.

Precautionary statement

Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe gas. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment.
Response	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Collect spillage.
Storage	Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Anhydrous Ammonia		7664-41-7	>99.5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Skin contact Frostbite: Do not remove clothes, but flush with copious amounts of lukewarm water. Call an ambulance and continue to flush during transportation to hospital.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

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.

Most important symptoms/effects, acute and delayed Symptoms include itching, burning, redness, and tearing of eyes. Contact with liquefied gas may cause frostbite. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Signs and symptoms of CNS depression, confusion and convulsions should be considered in the assessment and treatment of victims of exposure.

5. Fire-fighting measures

Suitable extinguishing media Carbon dioxide or dry powder.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

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.

Special 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.

Fire-fighting equipment/instructions Evacuate area. Remove pressurized gas cylinders from the immediate vicinity. Allow gas to burn if flow cannot be shut off immediately. Apply water from safe distance to cool container and protect surrounding area.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up

Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel. For waste disposal, see Section 13 of the SDS.

Environmental precautions

Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

7. Handling and storage

Precautions for safe handling

Use only with adequate ventilation. Avoid inhalation and contact with skin and eyes. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place. Secure cylinders in an upright position at all times, close all valves when not in use. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage. Store away from incompatible materials (See Section 10).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Anhydrous Ammonia (CAS 7664-41-7)	PEL	35 mg/m3
		50 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Anhydrous Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Anhydrous Ammonia (CAS 7664-41-7)	STEL	27 mg/m3
		35 ppm
	TWA	18 mg/m3
		25 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. The engineering controls also need to keep gas, vapor, or dust concentrations below any lower explosive limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear approved safety glasses or goggles.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear protective clothing appropriate for the risk of exposure.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance	Colorless liquefied gas.
Physical state	Gas.
Form	Liquefied gas.
Color	Colorless.
Odor	Strong pungent.
Odor threshold	Not available.
Melting point/freezing point	-110 - -30 °F (-78.89 - -34.44 °C)
Initial boiling point and boiling range	-28 °F (-33.33 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	7.52 mm Hg at 100 °F / 37 °C
Vapor density	0.596 at 32 °F / 0 °C
Relative density	0.68 ± 0.03
Relative density temperature	77 °F (25 °C)
Solubility(ies)	
Solubility (water)	Soluble in water.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur.
Conditions to avoid	In a fire or if heated, a pressure increase will occur and the container may burst or explode.
Incompatible materials	Oxidizing agents. Reducing agents. Acids.
Hazardous decomposition products	Nitrous gases.

11. Toxicological information

Information on likely routes of exposure

Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Inhalation	Toxic if inhaled.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms include itching, burning, redness, and tearing of eyes. Contact with liquefied gas may cause frostbite. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

Information on toxicological effects

Acute toxicity	Toxic if inhaled. Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn").

Components	Species	Test Results
Anhydrous Ammonia (CAS 7664-41-7)		
Acute		
Inhalation		
LC50	Rat	4000 ppm, 1 Hours
		2000 ppm, 4 Hours

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization Not a skin sensitizer.

Germ cell mutagenicity No data available.

Carcinogenicity This product is not considered to be a carcinogen by NTP, IARC, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure No data available.

Specific target organ toxicity - repeated exposure No data available.

Aspiration hazard Not classified.

12. Ecological information

Ecotoxicity Very toxic to aquatic organisms.

Components		Species	Test Results
Anhydrous Ammonia (CAS 7664-41-7)			
Aquatic			
Fish	LC50	Silver carp (Hypophthalmichthys molitrix)	0.38 mg/l, 96 hours
Acute			
Algae	EC50	Chlorella vulgaris	< 2700 mg/l, 432 hours
Crustacea	EC50	Daphnia	25.4 mg/l, 48 hours
	NOEC	Daphnia	< 0.79 mg/l
Fish	LC50	Rainbow Trout	0.16 - 1.1 mg/l, 96 Hours
	NOEC	Rainbow Trout	< 1.2 mg/l
Chronic			
Crustacea		Daphnia	0.79 mg/l, 4 days
Fish		Ictalurus punctatus	0.048 mg/l, 31 days

Persistence and degradability No data available.

Bioaccumulative potential No data available.

Mobility in soil The product is water soluble and may spread in water systems.

Other adverse effects No data available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. Empty containers may contain product residues. Do not puncture or incinerate even when empty. This material and/or its container must be disposed of as hazardous waste. Return the empty cylinder to the supplier. Dispose of in accordance with local regulations.

Hazardous waste code Waste codes should be assigned by the user based on the application for which the product was used.

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1005
UN proper shipping name	Ammonia, anhydrous
Transport hazard class(es)	
Class	2.3
Subsidiary risk	8
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	13, T50
Packaging exceptions	None
Packaging non bulk	304
Packaging bulk	314, 315

DOT BULK

BULK

UN number	UN1005
UN proper shipping name	Ammonia, anhydrous
Transport hazard class(es)	
Class	2.2
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	13, T50
Packaging exceptions	None
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1005
UN proper shipping name	Ammonia, anhydrous
Transport hazard class(es)	
Class	2.3
Subsidiary risk	8
Label(s)	2.3, 8
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	2CP
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1005
UN proper shipping name	AMMONIA, ANHYDROUS
Transport hazard class(es)	
Class	2.3
Subsidiary risk	8
Label(s)	2.3, 8
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-C, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable. This product is a compressed or liquefied gas and when transported in bulk is covered under IGC code.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Anhydrous Ammonia (CAS 7664-41-7) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Anhydrous Ammonia	7664-41-7	100	500 lbs		

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Anhydrous Ammonia	7664-41-7	>99.5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Anhydrous Ammonia (CAS 7664-41-7)

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Anhydrous Ammonia (CAS 7664-41-7)

US. New Jersey Worker and Community Right-to-Know Act

Anhydrous Ammonia (CAS 7664-41-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Anhydrous Ammonia (CAS 7664-41-7)

US. Rhode Island RTK

Anhydrous Ammonia (CAS 7664-41-7)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 11-July-2014

Revision date 05/20/2020

Version # 02

NFPA ratings

References

Registry of Toxic Effects of Chemical Substances (RTECS)
GESTIS Substance Database

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