Ammonia - US

Safety Data Sheet P-4562

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Issue date: 01/01/1981 Revision date: 02/03/2022 Supersedes: 08/28/2019

Version: 1.0

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Substance

Substance name : Ammonia - US

CAS-No. : 7664-41-7

Formula : NH3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use; Use as directed.

1.3. Details of the supplier of the safety data sheet

Linde Inc.
10 Riverview Drive
Danbury, CT 06810-6268, USA
www.lindeus.com

Linde Inc. 1-844-44LINDE (1-844-445-4633)

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24 hr/day 7 days/week
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
(collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Gas 2	H221
Press. Gas (Liq.)	H280
Acute Tox. 4 (Inhalation:gas)	H332
Skin Corr. 1B	H314
Eye Dam. 1	H318
STOT SE 3	H335
Aquatic Acute 1	H400

2.2. Label elements

GHS US labelling

Hazard pictograms (GHS US) :

GHS04 GHS05 GHS07 GHS09

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H221 - FLAMMABLE GAS
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
H332 - HARMFUL IF INHALED
H400 - VERY TOXIC TO AQUATIC LIFE
CGA-HG01 - MAY CAUSE FROSTBITE.
CGA-HG22 - CORROSIVE TO THE RESPIRATORY TRACT.

Precautionary statements (GHS US) : P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 - Do not breathe gas
P262 - Do not get in eyes, on skin, or on clothing.
P273 - Avoid release to the environment.
P280+P284 - Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face protection.
P271+P403 - Use and store only outdoors or in a well-ventilated place.
P501 - Dispose of contents/container in accordance with container Supplier/owner instructions
P303+P361+P353 - IF ON SKIN OR (HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P336 - Thaw frosted parts with lukewarm water. Do not rub affected area.
P363 - Wash contaminated clothing before reuse.
P310 - Immediately call a POISON CENTER/doctor.
P332+P313 - IF SKIN IRRITATION OCCURS: Get medical advice/attention.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a poison center/doctor if you feel unwell
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P377 - LEAKING GAS FIRE: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P391 - Collect spillage.
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG20+CGA-PG10 - Use only with equipment of compatible materials of construction and rated for cylinder pressure.
CGA-PG12 - Do not open valve until connected to equipment prepared for use.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

2.3. Other hazards

Other hazards which do not result in classification : Contact with liquid may cause cold burns/frostbite.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Ammonia - US
CAS-No. : 7664-41-7

Name	Product identifier	%
Ammonia	(CAS-No.) 7664-41-7	99.5 – 100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. . If not breathing, give artificial respiration, with supplemental oxygen given by qualified personnel. If breathing is difficult, qualified personnel should give oxygen. Call a physician.

First-aid measures after skin contact : In case of contact, immediately flush affected areas with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes. The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Treat with corticosteroid spray as soon as possible after inhalation. Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog.

5.2. Special hazards arising from the substance or mixture

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.

Protection during firefighting : **DANGER! Corrosive liquid and gas under pressure.**. Suffocation hazard by lack of oxygen.

Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Other information : Heat of fire can build pressure in cylinder and cause it to rupture. No part of a cylinder should be subjected to a temperature higher than 125oF (52oC). Cylinders are equipped with a pressure-relief device. (Exceptions may exist where authorized by DOT, in this case where cylinders contain less than 165 pounds of product.) If leaking or spilled product catches fire, do not extinguish flames. Flammable and toxic vapors may spread from leak and could explode if reignited. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device. Reverse flow into cylinder may cause rupture. To protect persons from cylinder fragments and toxic fumes if a rupture occurs, totally evacuate the area if the fire cannot be brought under immediate control.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition. if safe to do so. Reverse flow into cylinder may cause rupture. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable gas may spread from leak. Before entering the area, especially a confined area, check the atmosphere with an appropriate device.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not breathe gas/vapour. Avoid all contact with skin, eyes, or clothing. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.

Wear leather safety gloves and safety shoes when handling cylinders. Protect containers from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonia - US (7664-41-7)		
ACGIH	ACGIH OEL TWA [ppm]	25 ppm
ACGIH	ACGIH OEL STEL [ppm]	35 ppm
USA OSHA	OSHA PEL TWA [1]	35 mg/m³
USA OSHA	OSHA PEL TWA [2]	50 ppm
USA IDLH	IDLH [ppm]	300 ppm

Ammonia (7664-41-7)		
ACGIH	ACGIH OEL TWA [ppm]	25 ppm
ACGIH	ACGIH OEL STEL [ppm]	35 ppm
USA OSHA	OSHA PEL TWA [1]	35 mg/m³
USA OSHA	OSHA PEL TWA [2]	50 ppm

8.2. Exposure controls

Appropriate engineering controls : USE ONLY IN A CLOSED SYSTEM. An explosion-proof, corrosion-resistant, forced-draft fume hood is preferred.

Eye protection	:	Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.
Skin and body protection	:	Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible.
Respiratory protection	:	When workplace conditions warrant respirator use, follow a respiratory protection program that meets or exceeds the requirements of the appropriate Health and Safety Regulations. Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Thermal hazard protection	:	Wear cold insulating gloves when transfilling or breaking transfer connections.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Colourless gas. Liquid under pressure.
Molecular mass	:	17 g/mol
Colour	:	Colourless.
Odour	:	Ammoniacal.
Odour threshold	:	No data available
pH	:	Not applicable.
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	Not applicable.
Melting point	:	-77.7 °C
Freezing point	:	No data available
Boiling point	:	-33.4 °C
Flash point	:	No data available
Critical temperature	:	132.4 °C
Auto-ignition temperature	:	650 °C
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	≥ 16 vol % 25
Vapour pressure	:	860 kPa
Critical pressure	:	11350 kPa
Relative vapour density at 20 °C	:	No data available
Relative density	:	0.7
Density	:	0.682 g/cm³ (at -33 °C)
Relative gas density	:	0.6
Solubility	:	Water: 517000 mg/l
Partition coefficient n-octanol/water (Log Pow)	:	Not applicable.
Partition coefficient n-octanol/water (Log Kow)	:	Not applicable.
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Explosive properties	:	Not applicable.
Oxidizing properties	:	None.
Explosive limits	:	No data available

9.2. Other information

Gas group	:	Press. Gas (Liq.)
Additional information	:	None.

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

May occur.

10.4. Conditions to avoid

Avoid prolonged exposure to air or moisture. Avoid moisture in installation systems.

10.5. Incompatible materials

Gold, silver, mercury, Oxidizing agents, Halogens, Halogenated compounds, Acids, Copper, Zinc, Copper/Zinc alloys (Brass), Chlorates.

10.6. Hazardous decomposition products

Hydrogen may be formed at temperatures above 1544°F (840°C).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Ammonia - US (\f)7664-41-7	
LC50 Inhalation - Rat [ppm]	7338 ppm/1h
ATE US (gases)	3669 ppmv/4h

Ammonia (7664-41-7)	
LC50 Inhalation - Rat [ppm]	7338 ppm/1h
ATE US (gases)	3669 ppmv/4h

Skin corrosion/irritation : Causes severe skin burns.

pH: Not applicable.

Serious eye damage/irritation : CAUSES SERIOUS EYE DAMAGE.

pH: Not applicable.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : MAY CAUSE RESPIRATORY IRRITATION.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : VERY TOXIC TO AQUATIC LIFE. No ecological damage caused by this product.

Ammonia - US (7664-41-7)	
LC50 - Fish [1]	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)
EC50 - Crustacea [1]	25.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	2.43 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

Ammonia (7664-41-7)	
LC50 - Fish [1]	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)
EC50 - Crustacea [1]	25.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Ammonia (7664-41-7)	
LC50 - Fish [2]	2.43 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

12.2. Persistence and degradability

Ammonia - US (7664-41-7)	
Persistence and degradability	The substance is readily biodegradable. Unlikely to persist.

Ammonia (7664-41-7)	
Persistence and degradability	The substance is readily biodegradable. Unlikely to persist.

12.3. Bioaccumulative potential

Ammonia - US (7664-41-7)	
Partition coefficient n-octanol/water (Log Pow)	Not applicable.
Partition coefficient n-octanol/water (Log Kow)	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). See section 9.

Ammonia (7664-41-7)	
Partition coefficient n-octanol/water (Log Pow)	Not applicable.
Partition coefficient n-octanol/water (Log Kow)	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). See section 9.

12.4. Mobility in soil

Ammonia - US (7664-41-7)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

Ammonia (7664-41-7)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.

Effect on the ozone layer : None.

Effect on global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not attempt to dispose of residual or unused quantities. Return container to supplier.

SECTION 14: Transport information

In accordance with DOT

Transport document description (DOT) : UN1005 Ammonia, anhydrous, 2.2

UN-No.(DOT) : UN1005

Proper Shipping Name (DOT) : Ammonia, anhydrous

Class (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

Hazard labels (DOT) : 2.2 - Non-flammable gas

DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada

DOT Special Provisions (49 CFR 172.102) : 13 - The words Inhalation Hazard shall be entered on each shipping paper in association with the shipping description, shall be marked on each non-bulk package in association with the proper shipping name and identification number, and shall be marked on two opposing sides of each bulk package. Size of marking on bulk package must conform to 172.302(b) of this subchapter. The requirements of 172.203(m) and 172.505 of this subchapter do not apply.
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

Marine pollutant : Yes

Additional information

Emergency Response Guide (ERG) Number : 125 (UN1005);154 (UN2672)

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1005

Proper Shipping Name (IMDG) : AMMONIA, ANHYDROUS

Class (IMDG) : 2 - Gases

Division (IMDG) : 2.3 - Toxic gases

MFAG-No : 125

Air transport

UN-No. (IATA) : 1005

Proper Shipping Name (IATA) : Ammonia, anhydrous

Class (IATA) : 2.3 - Gases : toxic

Subsidiary hazard (IATA) : (8)

Civil Aeronautics Law : Gases under pressure/Gases toxic under pressure(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

SECTION 15: Regulatory information

15.1. US Federal regulations

Ammonia - US (7664-41-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 313 - Emission Reporting	1 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)

Ammonia - US (7664-41-7)
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Ammonia (7664-41-7)	
Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Sudden release of pressure hazard Fire hazard
SARA Section 313 - Emission Reporting	1 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)

15.2. International regulations

CANADA

Ammonia - US (7664-41-7)
Listed on the Canadian DSL (Domestic Substances List)

Ammonia (7664-41-7)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Ammonia - US (7664-41-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Ammonia (7664-41-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Ammonia - US (7664-41-7)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Listed on the Canadian IDL (Ingredient Disclosure List) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ammonia (7664-41-7)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Listed on the Canadian IDL (Ingredient Disclosure List) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Ammonia - US(7664-41-7)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

Ammonia (7664-41-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

Ammonia (7664-41-7)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Linde asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Linde Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Linde Inc, it is the user's obligation to determine the conditions of safe use of the product.

Linde SDSs are furnished on sale or delivery by Linde or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your sales representative, local distributor, or supplier, or download from www.lindeus.com. If you have questions regarding Linde SDSs, would like the document number and date of the latest SDS, or would like the names of the Linde suppliers in your area, phone or write the Linde Call Center (Phone: 1-844-44-Linde (1-844-445-4633); Address: Linde Call Center, Linde Inc, P.O. Box 44, Tonawanda, NY 14151-0044).

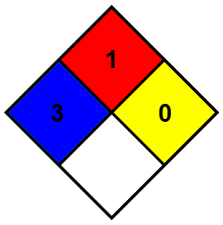
Linde and the Linde wordmark are trademarks or registered trademarks of Linde Inc. or its affiliates. The information contained herein is offered for use by technically qualified personnel at their discretion and risk without warranty of any kind.

Revision date : 02/03/2022

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA instability : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012) - Linde 2022

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.