

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

| | |
|----------------|---|
| Product form | : Substance |
| Substance name | : Ammonia, Anhydrous |
| CAS No. | : 7664-41-7 |
| Product code | : AMM, AMMMET, AMMR |
| Formula | : NH ₃ |
| Synonyms | : Ammonia gas / Ammonia (anhydrous) / Free ammonia / Anhydrous, ammonia / Anhydrous ammonia / Ammonia anhydrous / Gaseous ammonia / AMMONIA |

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

| | |
|----------------------------------|---|
| Use of the substance/preparation | : Agricultural chemical Industrial use |
|----------------------------------|---|

1.3. Details of the supplier of the safety data sheet

PCS Sales (USA), Inc.
1101 Skokie Blvd.
Suite 400
Northbrook, IL 60062
T 800-241-6908 / 847-849-4200

Suite 500
122 1st Avenue South
Saskatoon, Saskatchewan Canada S7K7G3
T 800-667-0403 (Canada) / 800-667-3930 (USA)

SDS@PotashCorp.com - www.PotashCorp.com

1.4. Emergency telephone number

| | |
|------------------|----------------------------|
| Emergency number | : 800-424-9300 CHEMTREC |
|------------------|----------------------------|

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GHS-US classification**

| | |
|---|------|
| Flammable Gas Category 2 | H221 |
| Gas Under Pressure: Compressed Gas | H280 |
| Acute Toxicity Category 3 (Inhalation: gas) | H331 |
| Skin Corrosive Category 1B | H314 |
| Eye Damage Category 1 | H318 |

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2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



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
H331 - Toxic if inhaled

Precautionary statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P260 - Do not breathe gas.
P264 - Wash hands and forearms thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face protection, protective gloves, protective clothing
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P310 - Immediately call a POISON CENTER or doctor
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
P310 - Immediately call a POISON CENTER or doctor.
P363 - Wash contaminated clothing before reuse.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor
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
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P410 + P403 - Protect from sunlight. Store in a well-ventilated place.
P501 - Dispose of contents and container according to local, regional, national, and international regulations

2.3. Other hazards

Other hazards not contributing to the classification

: Hazardous to the aquatic environment - Acute Hazard Category 1.
Very toxic to aquatic life.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Ammonia, Anhydrous

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CAS No. : 7664-41-7
EC no : 231-635-3
EC index no : 007-001-00-5

| Name | Product identifier | % | GHS-US classification |
|---------|---------------------|------------|--|
| Ammonia | (CAS No.) 7664-41-7 | 99.5 - 100 | Gas Under Pressure, H280 Flam. Gas 2, H221 Acute Tox. 3 (Inhalation: gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 |

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.
- First-aid measures after skin contact : Using proper respiratory protection, immediately move the exposed person to fresh air. Take off immediately all contaminated clothing. Rinse immediately with plenty of water (for at least 15 minutes). Seek medical attention immediately. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Using proper respiratory protection, immediately move the exposed person to fresh air. Immediately rinse with water for a prolonged period (at least 20 minutes) while holding the eyelids wide open. Seek medical attention immediately.
- First-aid measures after ingestion : Ingestion is an unlikely route of exposure for a gas. If swallowed, do not induce vomiting. Seek medical advice immediately.

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

- Symptoms/injuries after inhalation : Toxic if inhaled. Causes severe respiratory irritation if inhaled. Symptoms may include: Burning of nose and throat, constriction of airway, difficulty breathing, shortness of breath, bronchial spasms, chest pain, and pink frothy sputum. Contact may cause immediate severe irritation progressing quickly to chemical burns. May cause pulmonary edema. Symptoms may be delayed.
- Symptoms/injuries after skin contact : Contact may cause immediate severe irritation progressing quickly to chemical burns.
- Symptoms/injuries after eye contact : Contact may cause immediate severe irritation progressing quickly to chemical burns. Can cause severe eye damage or blindness.

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- Symptoms/injuries after ingestion : Ingestion is an unlikely route of exposure for a gas. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
- Chronic symptoms : Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage.

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

Immediate medical attention is required for all routes of exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water, foam, carbon dioxide, dry chemical.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable gas. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Under conditions of fire this material may produce: Nitrogen oxides. Nitrogen. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Ammonia vapor concentrations between 16% and 25% can explode on contact with an ignition source.

5.3. Advice for firefighters

- Firefighting instructions : Keep upwind. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Remove containers from fire area if this can be done without risk. On heating, there is a risk of bursting due to internal pressure build-up. Cool down the containers exposed to heat with a water spray. Do not get water inside containers. Do not apply water stream directly at source of leak.
- Protection during firefighting : Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities if liquid enter sewers or waterways.
- Other information : Do not allow run-off from fire fighting to enter drains or water courses.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not breathe gas. Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area. Keep upwind. Wear suitable protective clothing and equipment as described in Section 8 of this SDS.

6.2. Environmental precautions

If spill could potentially enter any waterway, including intermittent dry creeks, contact the U.S. COAST GUARD NATIONAL RESPONSE CENTER at 800-424-8802. In case of accident or road spill notify CHEMTREC at 800-424-9300. In other countries call CHEMTREC at (International code) +1-703-527-3887.

6.3. Methods and material for containment and cleaning up

For containment : Provide adequate ventilation. Eliminate all ignition sources. Contain any spills with dikes or inert absorbents to prevent migration and entry into sewers or streams. Do not allow into drains or water courses or dispose of where ground or surface waters may be affected. Use cold water to absorb ammonia vapor from air.

Methods for cleaning up : Eliminate all ignition sources. Ventilate area. Thoroughly wash down area with water. Dispose of materials in accordance with all local, regional, national, and international regulations.
Practice good housekeeping – spillage can be slippery on smooth surface either wet or dry.

6.4. Reference to other sections

See Section 8 for Protective equipment and Section 13 for disposal.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure there is adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Wear recommended personal protective equipment. Use only approved pressure vessels with appropriate safety devices. Never fill pressure storage tanks over 85% of vessel volume. Avoid copper or copper-containing alloys such as brass, for tanks, vessels, pipe, or valves. Use iron or steel tanks and piping, and valves especially designed for ammonia service. All equipment used to handle, store, transfer, or apply anhydrous ammonia must be properly engineered, constructed, and maintained in compliance with all applicable regulations, standards, and Recognized and Generally Accepted Good Engineering Practice [RAGAGEP]. Pressure vessels, piping, and appurtenances should be regularly inspected and tested using methods designed to reveal external and internal deterioration or defects that may impair the integrity of the equipment such that an unintended release of anhydrous ammonia may result. Consult with your State Department of Agriculture and other experts, as applicable, concerning the methods that would be most appropriate given the particular circumstances. Refer to 29 CFR 1910.111 Storage and Handling of Anhydrous Ammonia, 29 CFR 1910.119 Process Safety Management of Highly Hazardous Materials and the current ANSI standard K61.1, Safety Requirements for the Storage and Handling of Anhydrous Ammonia, for additional information.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Detached outside storage is preferable.
- Incompatible materials : Avoid contact with: oxidizing gases, silver oxide, acids, copper, tin, and zinc. Hazardous reactions have been documented for contact of anhydrous ammonia with: acetaldehyde, acrolein, boron, boron trioxide, bromine, chlorine, chlorites, chromium trioxide, ethylene oxide, fluoride, gold, hypochlorous acid, iodine, mercury, nitric acid, nitrogen tetroxide, nitrogen trichloride, nitrogen trifluoride, phosphorus trioxide, picric acid, potassium chlorate, potassium ferricyanide, silver, and silver chloride. Liquefied gases in contact with water may explode violently.
- Storage area : Store in dry, cool area at ≤ 49 °C (120 °F). Store in a well-ventilated place. Keep away from combustible materials. Keep away from sources of ignition - No smoking. Protect from high temperatures.

7.3. Specific end use(s)

Agricultural chemical, Industrial use

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Ammonia (7664-41-7) | | |
|-------------------------|------------------|-------------------------------|
| USA ACGIH | ACGIH TWA | 25 ppm |
| USA ACGIH | ACGIH STEL | 35 ppm |
| USA NIOSH IDLH | NIOSH IDLH | 300 ppm |
| USA NIOSH | NIOSH REL (TWA) | 18 mg/m ³ ; 25 ppm |
| USA NIOSH | NIOSH REL (STEL) | 27 mg/m ³ ; 35 ppm |
| USA OSHA | OSHA PEL (TWA) | 35 mg/m ³ ; 50 ppm |
| Alberta | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| British Columbia | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Manitoba | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| New Brunswick | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Newfoundland & Labrador | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Northwest Territories | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Nova Scotia | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Nunavut | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Ontario | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Prince Edward Island | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Quebec | TWAEV / STEV | 25 ppm (TWAEV), 35 ppm (STEV) |
| Saskatchewan | TWA / STEL | 25 ppm (TWA), 35 ppm (STEL) |
| Yukon | TWA / STEL | 25 ppm (TWA), 40 ppm (STEL) |

8.2. Exposure controls

- Appropriate engineering controls : Provide sufficient ventilation to keep ammonia vapors below the permissible exposure limit. Ensure adequate ventilation, especially in confined areas.
- Personal protective equipment :
- Hand protection : Nitrile, Neoprene, Viton or Rubber gloves. Check glove manufacturer's permeation / degradation information.
- Eye protection : Wear chemical goggles with a vapor-tight seal. Contact lenses should not be worn.
- Skin and body protection : Wear impervious protective clothing and rubber gloves for small releases and normal loading and unloading operations.
- Respiratory protection : For exposures at or below 300 ppm use a NIOSH-approved, full-face, negative-pressure respirator fitted with ammonia vapor cartridges. For exposure concentrations above 300 ppm, use a full-face, positive-pressure, self-contained breathing apparatus.

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Environmental exposure controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas
Molecular mass : 17.03 g/mol
Colour : Colorless
Odour : Ammonia. Pungent. Sharp.
Odour threshold : 5 - 50 ppm
pH : 11.6
pH solution : 1 % aqueous solution
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available
Freezing point : -77.7 °C (-108 °F)
Boiling point : -33.3 °C (-28 °F)
Flash point : No data available
Self ignition temperature : 651 °C (1204 °F)
Decomposition temperature : No data available
Flammability (solid, gas) : Flammable gas.
Vapour pressure : 7520 mm Hg at 25 °C (77 °F)
Relative vapour density at 20 °C : 0.588
Relative density : 0.682 at -33.35 °C (-28 °F)
Density : 0.696 g/l at 20 °C (68 °F)
Solubility : 510 – 530 g/L
Log Pow : -1.14 at 25 °C (77 °F)
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : 0.00982 cP at 20 °C (vapour)

Explosive properties : Ammonia vapor concentrations between 16% and 25% can explode on contact with an ignition source
Oxidising properties : No data available
Explosive limits : 16 - 25 vol %

9.2. Other information

% Volatiles: 100% at 20°C

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SECTION 10: Stability and reactivity

10.1. Reactivity

May accelerate the burning of other combustible materials. Vapors dissolve easily in water. Large amounts of heat may be released as solution forms.

10.2. Chemical stability

Stable at standard temperature and pressure.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from heat. Avoid ignition sources.

10.5. Incompatible materials

Ammonia vapor reacts with chlorine, bromine, mercury, silver, and hypochlorites to form explosive compounds. Avoid contact with: oxidizing gases, silver oxide, acids, copper, tin, and zinc. Hazardous reactions have been documented for contact of anhydrous ammonia with: acetaldehyde, acrolein, boron, boron trioxide, bromine, chlorine, chlorites, chromium trioxide, ethylene oxide, fluoride, gold, hypochlorous acid, iodine, mercury, nitric acid, nitrogen tetroxide, nitrogen trichloride, nitrogen trifluoride, phosphorus trioxide, picric acid, potassium chlorate, potassium ferricyanide, silver, and silver chloride.

10.6. Hazardous decomposition products

Under conditions of fire this material may produce: Nitrogen oxides. Nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity :

| Ammonia (7664-41-7) | |
|----------------------------|----------------------------------|
| LD50 oral rat | 350 mg/kg |
| LC50 inhalation rat (mg/l) | 5.1 mg/l (Exposure time: 1 h) |
| LC50 inhalation rat (ppm) | 2000 ppm/4h (Exposure time: 4 h) |

| | |
|--|---|
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. pH: 11.6 |
| Serious eye damage/irritation | : Causes eye damage. Subacute and chronic exposure to 200 – 1000 ppm produced eye damage. 100 – 200 ppm produced moderate to severe eye irritation. pH: 11.6 |
| Respiratory or skin sensitisation | : None of the components of this product are a sensitizer |
| Germ cell mutagenicity | : None of the components of this product are a germ cell mutagen. |
| Carcinogenicity | : None of the components of this product are listed as carcinogens by OSHA, IARC, or NTP. |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |

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| | |
|---|----------------------------|
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not an aspiration hazard |

SECTION 12: Ecological information

12.1. Toxicity

| | | |
|-------------|---|---|
| Ecotoxicity | Acute Toxicity to Fish: | 96-h: LC ₅₀ = 0.09 – 3.51 mg un-ionized NH ₃ /L |
| | Chronic Toxicity to Fish: | Various 12 d-5 yrs: NOEC=0.025-1.2 mg un-ionized NH ₃ /L. |
| | Acute Toxicity to Aquatic Invertebrates: | (<i>Daphnia magna</i>) 48 h LC ₅₀ = 2.94 mg un-ionized NH ₃ -N/L. |
| | Chronic Toxicity to Aquatic Invertebrates: | (<i>Daphnia magna</i> & others) 21 d-76 weeks: NOEC = 0.163-0.42 mg un-ionized NH ₃ /L. |
| | Acute Toxicity to Aquatic Plants: | (Benthic diatoms) Up to 25 days: LOEC = 0.5-1.0 mg N/L (<i>Chlorella vulgaris</i>) 21 days: LOEC = 500 mg N/L. Slightly toxic to aquatic organisms as defined by USEPA. |
| | Toxicity to Soil Dwelling Organisms: | No data available. |
| | Toxicity to Terrestrial Plants: | No data available. |

12.2. Persistence and degradability

| | | |
|-----------------------|------------------------------------|---|
| Environmental Fate: | Stability in Water: | Ke=25.6-47.3 cm/h at 15.2-15.0 °C. Removed from aquatic systems. |
| | Stability in Soil: | Mean sorption; sand: 19% loam: 28% clay, clay loam, and silt loam: 38%. Monitoring Data: levels of ammonia in urban areas are on average about 20 Φg/m ³ . Non-urban sites have average levels of 4-5 Φg/m ³ . Areas close to point sources (e.g., large animal feedlots or industrial sites) may have local atmospheric concentrations exceeding 200 Φg/m ³ . |
| | Transport and Distribution: | Transport: the primary methods of transport in the atmosphere are via vertical and horizontal diffusion. Distribution: 99.98% to air, <0.1% each to water, soil, biota, and sediment |
| Toxicity: | No known toxicity. | |
| Degradation Products: | Biodegradation: | Inorganic. Undergoes photolytic degradation. |
| | Photodegradation: | Aerobic. BOD created within days. Rapidly biodegraded. Bioaccumulation: Rapidly assimilated by animals and plants. |

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|---------------------------------|--|
| Sewage disposal recommendations | : This material is hazardous to the aquatic environment. Keep out of sewers and waterways. |
| Waste disposal recommendations | : Place in an approved container and dispose of contaminated materials at a licensed site. |

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Additional information : Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: Transport information

In accordance with DOT / TDG / ADR / RID / ADN / IMDG / ICAO / IATA

14.1. UN number

UN-No.(DOT) : 1005
DOT NA no. UN1005

14.2. UN proper shipping name

US:

DOT Proper Shipping Name : Ammonia, anhydrous
Department of Transportation (DOT) : 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Hazard Classes
Hazard labels (DOT) : 2.2 - Non-flammable compressed gas



Package Marking Requirements (49 CFR 173.330) : Ammonia, Anhydrous
Inhalation Hazard
DOT Symbols : US - Proper shipping name for domestic use only
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.

DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Packaging Non Bulk (49 CFR 173.xxx) : 304
DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

Canada:

DOT Proper Shipping Name : Ammonia, anhydrous
Transport Canada (TDG) Hazard Classes : 2.3 - Class 2.3 – Poisonous Gas (Schedule 1) Subsidiary Hazard: 8 - Corrosive

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Hazard labels (TDG) : 2.3 - Poisonous gas



Packaging Markings :



(Internationally Only)

Marine Pollutant Mark Requirements : 49 CFR 172.322

Package Marking Requirements (49 CFR 173.330) : Ammonia, Anhydrous
Inhalation Hazard

Shipping Papers Requirement (49 CFR 173.203 (I)) : **Shipping Papers must have “Marine Pollutant” in near the basic shipping description**

DOT Special Provisions (49 CFR 172.102 – I) : **4** - This material is poisonous by inhalation (see §171.8 of this subchapter) in Hazard Zone D (see §173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter; **N-87** - The use of copper valves on UN pressure receptacles is prohibited; **T-50** -When portable tank instruction T50 is indicated in Column (7) of the §172.101 Hazardous Materials Table, the applicable liquefied compressed gas and chemical under pressure descriptions are authorized to be transported in portable tanks in accordance with the requirements of §173.313 of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

ERAP Required: : Shipments to, from or through Canada

14.3. Additional information

Emergency Response Guide (ERG) Number : 125

Reportable Quantity : 100 pounds

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Other information : **Shipping Papers for Transportation by highway.** 49 CFR §172.203 Following the basic description for a hazardous material in a Specification MC 330 or MC 331 cargo tank, there must be entered for—
(1) *Anhydrous ammonia.*
Applies to Product Code “AMM”: (i) The words **“0.2 PERCENT WATER”** to indicate the suitability for shipping anhydrous ammonia in a cargo tank made of quenched and tempered steel as authorized by §173.315(a), Note 14 of this subchapter, or
Applies to Product Code “AMMR & AMMMET”: (ii) The words **“NOT FOR Q and T TANKS”** when the anhydrous ammonia does not contain 0.2 percent or more water by weight.

Overland transport (International)

Class (ADR) : 2 - Gases
Hazard identification number (Kemler No.) : 268
Classification code (ADR) : 2TC
Danger labels (ADR) : 2.3 - Toxic gas
8 - Corrosive substances



Package Marking Requirements (49 CFR 173.330) : Ammonia, Anhydrous
Inhalation Hazard

Orange plates : An orange rectangular label with a black border, divided into two horizontal sections. The top section contains the number '268' and the bottom section contains the number '1005'.

Tunnel restriction code : C/D
Excepted quantities (ADR) : E0

Transport by sea

DOT Vessel Stowage Location : D - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”, 52 - Stow “separated from” acids, 57 - Stow “separated from” chlorine
MFAG-No. : 125

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

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DOT Quantity Limitations Cargo : Forbidden
aircraft only (49 CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

All components listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes: Classified as per OSHA HAZCOM 2012 GHS in Section 2 of this SDS.

| Ammonia (7664-41-7) | |
|--|---|
| SARA Section 302 Threshold Planning Quantity (TPQ) | 500 lb |
| SARA Section 304 and CERCLA ((Comprehensive Environmental Response, Compensation, and Liability Act): Designated as a hazardous substance. Reportable Quantity (RQ) is 100 lb (45.4 kg). Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately when there is a release in an amount equal to or greater than the RQ. | |
| SARA Section 313 - Emission Reporting | Ammonia, de minimis concentration by weight 1.0 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing) |
| CAA (Clean Air Act) : | Ammonia is listed as a regulated toxic substance under 112r for purposes of accidental release planning under the Risk Management Program. Threshold quantity is 10,000 lbs. for anhydrous ammonia and 20,000 lbs. for ammonia in solution (or aqua ammonia) at concentrations of 20% or greater. |

15.2. US State regulations

The following states have an OSH program approved by OSHA. If you are located in any of these states you may be under state jurisdiction rather than federal jurisdiction and your state may have more stringent requirements than OSHA. You should consult your state regulations to ensure compliance.

| | | | | |
|--------------|----------|-------------|----------------|-----------------|
| Alaska | Indiana | Minnesota | North Carolina | Utah |
| Arizona | Iowa | Nevada | Oregon | Vermont |
| California | Kentucky | New Mexico | Puerto Rico | *Virgin Islands |
| *Connecticut | Maryland | *New Jersey | South Carolina | Virginia |
| Hawaii | Michigan | *New York | Tennessee | Washington |
| *Illinois | | | | Wyoming |

*The state plans in these states apply only to public sector employers. In these states private sector employers are subject to USOL – OSHA jurisdiction. All other state plans apply to both public and private sector employers.

| Ammonia (7664-41-7) |
|--|
| U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute |
| U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic |
| U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728) |

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U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
U.S. - Delaware - Accidental Release Prevention Regulations - Toxic Endpoints
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Florida - Essential Chemicals List
U.S. - Hawaii - Occupational Exposure Limits - STELs
U.S. - Hawaii - Occupational Exposure Limits - TWAs
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - TWAs
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Maine - Air Pollutants - Criteria Pollutants
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Conc. - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Conc. - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELEs)
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Occupational Exposure Limits - STELs
U.S. - Michigan - Polluting Materials List
U.S. - Michigan - Process Safety Management Highly Hazardous Chemicals
U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - STELs
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New Mexico - Precursor Chemicals
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - North Carolina - Control of Toxic Air Pollutants
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour

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U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities
U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Oregon - Precursor Chemicals
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
U.S. - Tennessee - Occupational Exposure Limits - STELs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - STELs
U.S. - Virginia - Water Quality Standards - Acute Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Acute Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life
U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
U.S. - Virginia - Water Quality Standards - Surface Waters Not Used for the Public Water Supply Effluent Limits
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Height 25 Ft to Less Than 40 Ft
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Height 40 Ft to Less Than 75 Ft
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - Wyoming - Process Safety Management - Highly Hazardous Chemicals
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water
U.S. - Alaska - Water Quality Standards - Acute Aquatic Life Criteria for Marine Water
U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water
U.S. - Alaska - Ambient Air Quality Standards

15.3. Canadian regulations

All components listed on the Canadian DSL (Domestic Substances List) inventory.

Ammonia (7664-41-7)

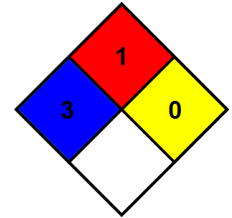
Listed on the Canadian Ingredient Disclosure List – Disclosure at 1 %

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SECTION 16: Other information

- NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
- NFPA fire hazard : 1 - Must be preheated before ignition can occur.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



Full text of H-phrases:

| | |
|--------------------------------|---|
| Acute Tox. 3 (Inhalation: gas) | Acute toxicity (inhalation: gas) Category 3 |
| Flam. Gas 2 | Flammable gases Category 2 |
| Skin Corr. 1B | Skin corrosive Category 1B |
| H221 | Flammable gas |
| H280 | Gases Under Pressure |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H331 | Toxic if inhaled |

- Chemical Facility Antiterrorism Standards (6 CFR 27) : This product is listed as a Chemical of Interest in 6 CFR 27. Please determine if your use of this product meets the Screening Threshold Quantity as identified in Appendix A to this regulation. If so, you will be required to submit a Top Screen under DHS's Chemical Security Assessment Tool

REVISION DATE: 05/23/2017

REVISION SUMMARY: General review and format change. Changes to all sections

PREVIOUS REVISION DATE: 07/01/2015

Logo Change : No other information changes; kept same date

SDS US (GHS HazCom 2012)

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