Anhydrous Ammonia, 82-0-0

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

SECTION 1: Identification

1.1. Product identifier

Product form	:	Substance
Substance name	:	Anhydrous Ammonia, 82-0-0
Product code	:	M11000CAN
Product group	:	Trade product

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

JR Simplot Company
83707 Boise, ID
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-CA)

Flammable gases, Category 2	H221
Gases under pressure : Liquefied gas	H280
Acute toxicity (oral), Category 4	H302
Acute toxicity (inhalation:gas) Category 3	H331
Skin corrosion/irritation, Category 1A	H314
Serious eye damage/eye irritation, Category 1	H318

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :

GHS04 GHS05 GHS06

Signal word (GHS-CA) : Danger

Hazard statements (GHS-CA) :
H221 - Flammable gas
H280 - Contains gas under pressure; may explode if heated
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H331 - Toxic if inhaled

Precautionary statements (GHS-CA) :
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash hands, forearms and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P321 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely

P381 - In case of leakage, eliminate all ignition sources
P403 - Store in a well-ventilated place
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/container to ..

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Anhydrous Ammonia, 82-0-0

Name	Product identifier	%	Classification (GHS-CA)
Anhydrous Ammonia	(CAS No) 7664-41-7		Flam. Gas 2, H221 Liquefied gas, H280 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of H-statements: 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 : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Specific treatment (see supplemental first aid instruction on this label).

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation.

Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard.

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if swallowed. Toxic if inhaled.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Do not use a heavy water stream.

5.3. Specific hazards arising from the hazardous product

Fire hazard : Flammable gas.

Explosion hazard : May form flammable/explosive vapour-air mixture.

Reactivity : Product is not explosive. Reacts violently with water. Reacts exothermically with (some) acids. Thermal decomposition generates : Corrosive vapours.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Eliminate all ignition sources if safe to do so. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. Eliminate every possible source of ignition. No open flames. No smoking.

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Flammable gas.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep in fireproof place. Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

Storage area : Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Anhydrous Ammonia (7664-41-7)		
USA - ACGIH	ACGIH TWA (ppm)	25 ppm
USA - ACGIH	ACGIH STEL (ppm)	25 ppm

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear, colorless gas.

Molecular mass : ≈ 17.03 g/mol

Colour : Colourless.

Odour : Irritating/pungent odour.

Odour threshold : No data available

pH : 11.6

pH solution : No data available

Relative evaporation rate (butylacetate=1) : No data available

Relative evaporation rate (ether=1) : No data available

Melting point : -77.7 °C

Freezing point : No data available

Boiling point	:	-33.4 °C
Flash point	:	Non-Flammable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Flammable gas
Vapour pressure	:	92.9 mm Hg 15.6 C
Vapour pressure at 50 °C	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	0.68
Relative density of saturated gas/air mixture	:	No data available
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Complete.
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, kinematic (calculated value) (40 °C)	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available
Lower explosive limit (LEL)	:	No data available
Upper explosive limit (UEL)	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	Product is not explosive. Reacts violently with water. Reacts exothermically with (some) acids. Thermal decomposition generates : Corrosive vapours.
Chemical stability	:	Flammable gas.
Possibility of hazardous reactions	:	Not established.
Conditions to avoid	:	Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.
Incompatible materials	:	Strong acids. Strong bases.
Hazardous decomposition products	:	fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Oral: Harmful if swallowed.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Inhalation:gas: Toxic if inhaled.

Anhydrous Ammonia, 82-0-0	
LD50 oral rat	350 mg/kg
LC50 inhalation rat (ppm)	5137 ppm/1h
ATE CA (oral)	350.00000000 mg/kg bodyweight
ATE CA (gases)	700.00000000 ppmv/4h

Anhydrous Ammonia (7664-41-7)	
LD50 oral rat	350 mg/kg

Skin corrosion/irritation	:	Causes severe skin burns and eye damage. pH: 11.6
Serious eye damage/irritation	:	Causes serious eye damage. pH: 11.6
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified

Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified
Potential adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met. Harmful if swallowed. Toxic if inhaled.

SECTION 12: Ecological information

12.1. Toxicity

Anhydrous Ammonia (7664-41-7)	
LC50 fish 1	0.75 - 3.4 mg/l (96 h; Pimephales promelas; Ammonium ions)
LC50 fish 2	0.52 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
LC50 other aquatic organisms 1	1 - 10 mg/l (96 h)

12.2. Persistence and degradability

Anhydrous Ammonia, 82-0-0	
Persistence and degradability	Not established.

Anhydrous Ammonia (7664-41-7)	
Persistence and degradability	Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No (test)data on mobility of the components available. Ozonation in the air. Not established.

12.3. Bioaccumulative potential

Anhydrous Ammonia, 82-0-0	
Bioaccumulative potential	Not established.

Anhydrous Ammonia (7664-41-7)	
Log Pow	-1.14
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

Anhydrous Ammonia (7664-41-7)	
Log Pow	-1.14

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to ..
Additional information	:	Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	:	Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

Not regulated for transport

DOT

DOT NA no.	:	UN1005
UN-No.(DOT)	:	1005
DOT Symbols	:	I - Proper shipping name appropriate for international and domestic transportation
Transport document description	:	UN1005 Ammonia, anhydrous, 2.3
Proper Shipping Name (DOT)	:	Ammonia, anhydrous
Contains Statement Field Selection (DOT)	:	

Class (DOT)	:	2.3 - Class 2.3 - Poisonous gas 49 CFR 173.115
Division (DOT)	:	2.3
Hazard labels (DOT)	:	2.3 - Poison gas 8 - Corrosive

Dangerous for the environment	:	No
Marine pollutant	:	Yes (IMDG only)

DOT Special Provisions (49 CFR 172.102)	:	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 N87 - The use of copper valves on UN pressure receptacles is prohibited 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
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	Forbidden
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
Transport/Additional information	:	40 - Stow ''clear of living quarters'',52 - Stow ''separated from'' acids,57 - Stow ''separated from'' chlorine
Other information	:	No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG)	:	1005
Proper Shipping Name (IMDG)	:	AMMONIA, ANHYDROUS
Class (IMDG)	:	2 - Gases

IATA

UN-No. (IATA)	:	1005
Proper Shipping Name (IATA)	:	Ammonia, anhydrous
Class (IATA)	:	2

SECTION 15: Regulatory information

15.1. National regulations

No additional information available

15.2. International regulations

Anhydrous Ammonia (7664-41-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

Indication of changes:

Data sources	:	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Other information	:	None.

Full text of H-statements:

H221	Flammable gas
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled

SDS Canada (GHS)