Anhydrous Ammonia

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Anhydrous Ammonia
Chemical Formula	NH_3
CAS No.	7664-41-7
EC No.	231-635-3
REACH Registration No.	01-2119488876-14-XXXX

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

Identified Use(s)	Fertiliser
Uses Advised Against	None known.

1.3 Details of the supplier of the safety data sheet

Company Identification	Qatar Fertiliser Company
Address	P.O. Box 50001 Mesaieed, Qatar
Telephone	(+974) 44228888
Fax	(+974) 44770347
E-mail	aawad@qafco.com.qa

Only representative of a non-Community manufacturer

Company Identification	QatarEnergy Marketing B.V.
Address	Prinses Margrietplantsoen 88 2595 BR, La Haye Pays Bas
E-mail	REACH@qatarenergy.qa
Website	www.qatarenergy.qa

1.4 Emergency telephone number

National Poisons Information Service (Birmingham Centre)	+44 111
For Spill, Leak, Fire, Exposure or Accident, Call CHEMTREC Day or Night	Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 and +1-703-527-3887 (collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008 (CLP)

Flam. Gas 2 :Flammable gas.
Press. Gas (Liq.) :Contains gas under pressure; may explode if heated.
Skin Corr. 1B :Causes severe skin burns and eye damage.
Eye Dam. 1 :Causes serious eye damage.
Acute Tox. 3 :Toxic if inhaled.
Aquatic Acute 1 :Very toxic to aquatic life.
Aquatic Chronic 2 :Toxic to aquatic life with long lasting effects.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Product Name: Anhydrous Ammonia

Hazard Pictogram(s)

GHS06

GHS05

GHS09

Signal Word(s): Danger

Hazard Statement(s):
H221: Flammable gas.
H280: Contains gas under pressure; may explode if heated.
H314: Causes severe skin burns and eye damage.
H331: Toxic if inhaled.
H410: Very toxic to aquatic life with long lasting effects.
EUH071: Corrosive to the respiratory tract.

Precautionary Statement(s):
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe gas.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353+P310: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTRE/doctor.

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P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.

2.3 Other hazards

None known.

2.4 Additional Information

For full text of H/P Statements see section 16.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / REACH Registration No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
Ammonia, anhydrous	7664-41-7	231-635-3 01-2119488876-14-XXXX	>99	Flam. Gas 2 H221 Press. Gas (Liq.) H280 Skin Corr. 1B H314 Acute Tox. 3 H331 Aquatic Acute 1 H400 Aquatic Chronic 2 H411 EUH071	GHS04 GHS06 GHS05 GHS09

HAZARDOUS INGREDIENT(S)	CAS No.	Specific Concentration Limit	M-factor	ATE
Ammonia, anhydrous	7664-41-7			Acute Tox. 3 (H331) : 700

Contains no non-classified vPvB substances or substances with a Union workplace exposure limit.
For full text of H/P Statements see section 16.

3.2 Mixtures

Not applicable.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor.

Skin Contact: Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTRE/doctor.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE/doctor.

4.2 Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage. Toxic if inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Unlikely to be required but if necessary treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: As appropriate for surrounding fire. Water spray, dry powder or carbon dioxide. Fight larger fires with water spray or alcohol resistant foam.

Unsuitable extinguishing media: Water jet spray

5.2 Special hazards arising from the substance or mixture

Flammable gas. Contains gas under pressure; may explode if heated. Gas: Can form explosive mixture with air. Decomposes in a fire giving off toxic fumes: Nitrogen oxides.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Dike fire control water for later disposal.

Anhydrous Ammonia

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Eliminate sources of ignition. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Do not breathe gas. Wear appropriate personal protective equipment, avoid direct contact. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

In case of leakage, eliminate all ignition sources. Shut off source of leak if safe to do so. Ventilate area. Allow small spillages to evaporate provided there is adequate ventilation.

6.4 Reference to other sections

See Also Section 8, 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe gas. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke at the work place.

7.2 Conditions for safe storage, including any incompatibilities

Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	Strongly acidic, Nitrogen oxides, Metal alloys (Copper, Zinc, Aluminium, Cadmium)

7.3 Specific end use(s)

Fertiliser

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m^3)	STEL (ppm)	STEL (mg/m^3)	Note
Ammonia, anhydrous	7664-41-7	25	18	35	25	

Region	Source
United Kingdom	UK Workplace Exposure Limits EH40/2005 (Fourth edition, published 2020)

DNEL / DMEL	Oral	Inhalation	Dermal
Industry - Long Term - Local effects		14 mg/m^3	
Industry - Long Term - Systemic effects		47.6 mg/m^3	6.8 mg/m^3
Industry - Short term - Local effects			
Industry - Short term - Systemic effects			
Consumer - Long Term - Local effects		2.8 mg/m^3	
Consumer - Long Term - Systemic effects	6.8 mg/kg	23.8 mg/kg	68 mg/kg
Consumer - Short term - Local effects		7.2 mg/m^3	
Consumer - Short term - Systemic effects			

Environment	PNEC
Aquatic Compartment (including sediment)	Fresh water: 0.0011 mg/l, Sea water: 0.0011 mg/l, Intermittent release: 0.0068 mg/l

8.2 Exposure controls

8.2.1. Appropriate engineering controls — Use with ventilation, local exhaust ventilation or breathing protection. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal protection equipment

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Eye Protection — Wear goggles giving complete eye protection.

Skin protection — Wear protective clothing and gloves: Impervious gloves.
Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Respiratory protection — Wear suitable respiratory protection.

Thermal hazards — Not applicable.

8.2.3. Environmental Exposure Controls — Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Gas.
Colour	Colourless.
Odour	Pungent.
Melting point/freezing point	-78°C
Boiling point or initial boiling point and boiling range	-33°C
Flammability	Flammable gas.
Lower and upper explosion limit	Flammable Limits (Lower) (%v/v) : 16 Flammable Limits (Upper) (%v/v) : 25
Flash Point	Not applicable.
Auto-ignition temperature	630°C
Decomposition Temperature	Not available.
pH	Not applicable.
Kinematic Viscosity	Not applicable.
Solubility	Solubility (Water) : Very soluble (529 g/l @ 20°C) Solubility (Other) : Not known.
Partition coefficient n-octanol/water (log value)	Log Pow : 0.23 (Ammonia)
Vapour pressure	8 hPa @ 20°C
Density and/or relative density	Density (g/ml) : 0.77 @ 20°C
Relative vapour density	Not available.
Particle characteristics	Not applicable.

9.2 Other information

Odour threshold — ~5 ppm

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

None anticipated.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose.
Ammonia reacts violently with hypochlorites, mercury and halogens producing unstable compounds, which are liable to explode.

10.4 Conditions to avoid

Keep away from heat, sources of ignition and direct sunlight.

10.5 Incompatible materials

Strongly acidic, Nitrogen oxides, Metal alloys (Copper, Zinc, Aluminium, Cadmium)

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Ingestion	Not classified.
Acute toxicity - Skin Contact	Not classified.

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Acute toxicity - Inhalation	Toxic if inhaled. No data. Anhydrous ammonia is a gas hence testing for acute toxicity via the oral route is technically unfeasible. A number of non-standard acute inhalation toxicity studies in the rat and mouse indicate that the substance is toxic by inhalation.
Skin corrosion/irritation	Causes severe skin burns and eye damage. No data. Ammonia, aqueous: The visible signs of skin pathology appeared only at an ammonia concentration of 20-30 mg/L and higher, mainly in the form of a burn around the anus and in the region of the external genitalia.
Serious eye damage/irritation	Causes serious eye damage. No data. Additional testing for eye irritation/corrosion is not required and is considered to be unjustified both scientifically and on animal welfare grounds.
Skin sensitization data	Not classified. It is not a skin sensitiser.
Respiratory sensitization data	Not classified.
Germ cell mutagenicity	Not classified. There is no evidence of mutagenic potential.
Carcinogenicity	Not classified. No evidence of carcinogenicity.
Reproductive toxicity	Not classified. No evidence of reproductive effects.
Lactation	Not classified.
STOT - single exposure	Not classified.
STOT - repeated exposure	Not classified.
Aspiration hazard	Not classified.

11.2 Information on other hazards

Corrosive to the respiratory tract.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Toxicity - Aquatic invertebrates	No data.
Toxicity - Fish	Acute: LC50: 0.083 mg/l Chronic: NOEC: 0.0135 mg/l
Toxicity - Algae	No data.
Toxicity - Sediment Compartment	Not classified.
Toxicity - Terrestrial Compartment	Not classified.

12.2 Persistence and degradability

This substance is biodegradable. Unlikely to persist.

12.3 Bioaccumulative potential

The substance has low potential for bioaccumulation.

12.4 Mobility in soil

Soluble in water. The substance is predicted to have high mobility in soil.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Endocrine disrupting properties

None known.

12.7 Other adverse effects

Not known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Send to a licensed recycler, reclaimer or incinerator.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

UN No. 1005

14.2 UN proper shipping name

UN proper shipping name AMMONIA, ANHYDROUS

14.3 Transport hazard class(es)

ADR/RID

ADR/RID Class	2
ADR Classification Code	2TC
Special Provisions	23 379
Excepted Quantities	E0
Emergency Action Code	2XE
Packing Instructions for Packages	P200

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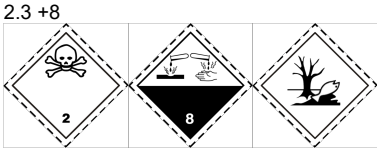
Mixed Packing Instructions for Packages	MP9
Instructions for Portable Tanks	(M) T50
Tank Code for Tanks	PxBH(M)
Special Provisions for Tanks	TA4 TT8 TT9
Vehicle for Tank Carriage	AT
ADR Transport Category	1
Tunnel Restriction Code	C/D
Special Provisions for Carriage - Loading, Unloading and Handling	CV9 CV10 CV36
Special Provisions for Carriage - Operation	S14
ADR HIN	268
IMDG	
IMDG Class	2.3
Special Provisions	23 379
Excepted Quantities	E0
Mixed Packing Instructions for Packages	P200
Special Packing Provisions for Packages	
Instructions for Portable Tanks	(M) T50
IMDG EMS	F-C, S-U
Stowage and Handling	Category D SW2
Segregation	SG35 SG46
Marine Pollutant	P
ICAO/IATA	
IATA Proper Shipping Name	AMMONIA, ANHYDROUS
Passenger and Cargo Aircraft Limited Quantities Packing Instructions	Forbidden for transport by air.
Passenger and Cargo Aircraft Limited Quantities Max net Qty	Forbidden for transport by air.
Passenger and Cargo Aircraft Packing Instructions	Forbidden for transport by air.
Passenger and Cargo Aircraft Max net Qty	Forbidden for transport by air.
Cargo Aircraft Packing Instructions	Forbidden for transport by air.
Cargo Aircraft Max net Qty	Forbidden for transport by air.
Special Provisions	A2
Emergency Response Guidebook (ERG) Code	2CP
Labels	
Labels	2.3 +8



14.4 Packing group

Packing group

14.5 Environmental hazards

Environmental hazards: Classified as a Marine Pollutant.

14.6 Special precautions for user

Special precautions for user: Not known.

14.7 Maritime transport in bulk according to IMO instruments

No information available

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very High Concern for Authorisation	Not listed
REACH: ANNEX XIV list of substances subject to authorisation	Not listed
REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Ammonia, anhydrous (7664-41-7)
Community Rolling Action Plan (CoRAP)	Not listed
Regulation (EU) N° 2019/1021 of the European Parliament and of the Council on persistent organic pollutants	Not listed
Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer	Not listed

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Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals	Not listed
National regulations	
Other	Not known.
15.2 Chemical Safety Assessment	A REACH chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16

LEGEND

Hazard Pictogram(s)


GHS06


GHS05


GHS09

GHS04: GHS: Gas cylinder

Hazard classification

Flam. Gas 2 : Flammable gas, Category 2
Press. Gas (Liq.) : Gases under pressure, Liquefied gas
Skin Corr. 1B : Skin corrosion/irritation, Category 1B
Eye Dam. 1 : Serious eye damage/irritation, Category 1
Acute Tox. 3 : Acute toxicity, Category 3
Aquatic Acute 1 : Hazardous to the aquatic environment, Acute, Category 1
Aquatic Chronic 1 : Hazardous to the aquatic environment, Chronic, Category 1
Aquatic Chronic 2 : Hazardous to the aquatic environment, Chronic, Category 2

Hazard Statement(s)

H221: Flammable gas.
H280: Contains gas under pressure; may explode if heated.
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H331: Toxic if inhaled.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
EUH071: Corrosive to the respiratory tract.

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe gas.
P261: Avoid breathing gas.
P264: Wash hands and exposed skin thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331+P310: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE/doctor.
P303+P361+P353+P310: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTRE/doctor.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
P311: Call a POISON CENTRE/doctor.
P321: Specific treatment (see Medical Advice on this label).
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.
P391: Collect spillage.
P403: Store in a well-ventilated place.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.

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	P410+P403: Protect from sunlight. Store in a well-ventilated place. P501: Dispose of contents in accordance with local, state or national legislation.
Acronyms	ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road ATE : Acute Toxicity Estimate CAS : Chemical Abstracts Service CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures DNEL : Derived No Effect Level EC : European Community IATA : International Air Transport Association IBC : Intermediate Bulk Container ICAO : International Civil Aviation Organization IMDG : International Maritime Dangerous Goods LTEL : Long term exposure limit PBT : Persistent, Bioaccumulative and Toxic PNEC : Predicted No Effect Concentration REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals RID : Regulations concerning the International Carriage of Dangerous Goods by Rail STEL : Short term exposure limit STOT : Specific Target Organ Toxicity UN : United Nations vPvB : very Persistent and very Bioaccumulative
Key literature references and sources for data used to compile the SDS	Regulation (EC) No. 1272/2008 (CLP)
Training Advice	Regular safety training as appropriate

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