

## 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<sub>3</sub>  
 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 MUNTAJAT B.V.  
 Address Prinses Margrietplantsoen 78-A  
 2595 BR, La Haye  
 Pays Bas  
 Telephone +31(0)70 219 7000  
 E-mail REACH@muntajatbv.com  
 Website [www.muntajatbv.com](http://www.muntajatbv.com)

#### 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

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

## Anhydrous Ammonia

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 01-211948876-14-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 <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	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 <sup>3</sup>	
Industry - Long Term - Systemic effects		47.6 mg/m <sup>3</sup>	6.8 mg/m <sup>3</sup>
Industry - Short term - Local effects			
Industry - Short term - Systemic effects			
Consumer - Long Term - Local effects		2.8 mg/m <sup>3</sup>	
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 <sup>3</sup>	
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

## Anhydrous Ammonia



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.

## Anhydrous Ammonia

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 sensitizer.
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.
<b>11.2 Information on other hazards</b>	Corrosive to the respiratory tract.

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 Toxicity

Toxicity - Aquatic invertebrates	Very toxic to aquatic life with long lasting effects. 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

## Anhydrous Ammonia

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

High Concern for Authorisation

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

## Anhydrous Ammonia

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.



## Anhydrous Ammonia

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  
Training Advice

Regulation (EC) No. 1272/2008 (CLP)  
Regular safety training as appropriate

### Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose.  
Qatar Fertiliser Company gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law.  
Qatar Fertiliser Company accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.