

Ammonia

SDS_002_CLP



2.3 : Toxic gas.



8 : Corrosive substance.

Environmentally
hazardous substance or
mixture.**Danger****1 Identification of the substance/mixture and of the company/undertaking**

Product identifier
Trade name : Ammonia
SDS Nr : SDS_002_CLP
Chemical description : Anhydrous ammonia
CAS No :007664-41-7
EC No :231-635-3
Index No :007-001-00-5

Chemical formula : NH₃
Registration-No. : Registration deadline not expired.
Use : Industrial and professional. Perform risk assessment prior to use.
Company identification : Energas Ltd.
Westmorland Street, Hull HU2 0HX,
United Kingdom

E-Mail address (competent person): : mark.nugent@energass.co.uk
Emergency telephone number : 01482 329333

2 Hazards identification**Classification of the substance or mixture****Hazard Class and Category Code
Regulation EC 1272/2008 (CLP)**

- **Physical hazards** : Flammable gases - Category 2 - Warning (H221)
Gases under pressure - Liquefied gas - Warning (H280)
 - **Health hazards** : Acute toxicity, Inhalation - Category 3 - Danger (H331)
Skin corrosion - Category 1B - Danger (H314)
STOT SE : Corrosive to respiratory tract. (EUH071)
 - **Environmental hazards** : Hazardous to the aquatic environment - Acute hazard - Category 1 - Warning (H400)
- Classification EC 67/548 or EC 1999/45** : R10
T; R23
C; R34
N; R50

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2 Hazards identification (continued)

Label elements

Labelling Regulation EC 1272/2008 (CLP)

• Hazard pictograms



• Hazard pictograms code

: GHS06 - GHS05 - GHS04 - GHS09

• Signal word

: Danger

• Hazard statements

: H331 : Toxic if inhaled.
H221 : Flammable gas.
H314 : Causes severe skin burns and eye damage.
H280 : Contains gas under pressure; may explode if heated.
H400 : Very toxic to aquatic life.

• Supplemental hazard information

: EUH071 : Corrosive to the respiratory tract.

• Precautionary statements

- Prevention

: P260 : Do not breathe gas, vapours.
P280 : Wear protective gloves/protective clothing/eye protection/face protection.
P210 : Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P273 : Avoid release to the environment.

- Response

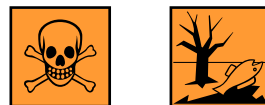
: P304+P340+P315 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention.
P303+P361+P353+P315 : IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention.
P305+P351+P338+P315 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention.
P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 : Eliminate all ignition sources if safe to do so.

- Storage

: P405 : Store locked up.
P403 : Store in a well-ventilated place.

Labelling EC 67/548 or EC 1999/45

Symbol(s)



: T : Toxic
N : Dangerous for the environment

R Phrase(s)

: R10 : Flammable.
R23 : Toxic by inhalation.
R34 : Causes burns.
R50 : Very toxic to aquatic organisms.

S Phrase(s)

: S9 : Keep container in a well-ventilated place.
S16 : Keep away from sources of ignition - No smoking.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).

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2 Hazards identification (continued)

S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

Other hazards

Other hazards : None.

3 Composition/information on ingredients

Substance / Preparation : Substance.

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Anhydrous ammonia	100 %	7664-41-7	231-635-3	007-001-00-5	NOTE 2	R10 T; R23 C; R34 N; R50 ----- Acute Tox. 3 (H331) Acute Tox. 3 (H331) Skin Corr. 1B (H314) EUH071 Flam. Gas 2 (H221) Liq. Gas (H280) Aquatic Acute 1 (H400)

Contains no other components or impurities which will influence the classification of the product.

Note 1: Listed in Annex IV / V REACH, exempted from registration.

Note 2: Registration deadline not expired.

Full text of R-phrases see chapter 16

4 First aid measures

First aid measures

- Inhalation : Toxic by inhalation.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- Skin/eye contact : May cause chemical burns to skin and cornea (with temporary disturbance to vision).
Immediately flush eyes thoroughly with water for at least 15 minutes.
Remove contaminated clothing. Drench affected area with water for at least 15 minutes.
Obtain medical assistance.
- Ingestion : Ingestion is not considered a potential route of exposure.

5 Fire-fighting measures

- Specific hazards : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition : Nitric oxide/nitrogen dioxide.
- Extinguishing media
- Suitable extinguishing media : All known extinguishants can be used.
- Specific methods : If possible, stop flow of product.
Move away from the container and cool with water from a protected position.
- Special protective equipment for fire fighters : Use self-contained breathing apparatus and chemically protective clothing.

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6 Accidental release measures

- Personal precautions** : Evacuate area.
Ensure adequate air ventilation.
Use self-contained breathing apparatus and chemically protective clothing.
- Environmental precautions** : Try to stop release.
Reduce vapour with fog or fine water spray.
- Clean up methods** : Ventilate area.
Wash contaminated equipment or sites of leaks with copious quantities of water.
Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).
Hose down area with water.

7 Handling and storage

- Handling** : Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Do not allow backfeed into the container.
Suck back of water into the container must be prevented.
Keep away from ignition sources (including static discharges).
Purge air from system before introducing gas.
Refer to supplier's container handling instructions.
- Storage** : Segregate from oxidant gases and other oxidants in store.
Keep container below 50°C in a well ventilated place.

8 Exposure controls/personal protection

- Personal protection** : Keep suitable chemically resistant protective clothing readily available for emergency use.
Keep self contained breathing apparatus readily available for emergency use.
Do not smoke while handling product.
Ensure adequate ventilation.
Protect eyes, face and skin from liquid splashes.
- Occupational Exposure Limits** : Anhydrous ammonia : ILV (EU) - 8 H - [mg/m³] : 14
Anhydrous ammonia : ILV (EU) - 8 H - [ppm] : 20
Anhydrous ammonia : ILV (EU) - 15 min - [mg/m³] : 36
Anhydrous ammonia : ILV (EU) - 15 min - [ppm] : 50
Anhydrous ammonia : TLV© -TWA [ppm] : 25
Anhydrous ammonia : TLV© -STEL [ppm] : 35

9 Physical and chemical properties

- Physical state at 20 °C** : Gas.
- Colour** : Colourless.
- Odour** : Ammoniacal.
- Molecular weight** : 17
- Melting point [°C]** : -77.7
- Boiling point [°C]** : -33
- Critical temperature [°C]** : 132
- Vapour pressure [20°C]** : 8.6 bar
- Relative density, gas (air=1)** : 0.6

Ammonia**SDS_002_CLP****9 Physical and chemical properties (continued)**

Relative density, liquid (water=1)	: 0.7
Solubility in water [mg/l]	: Completely soluble.
Flammability range [vol% in air]	: 15.4 to 30
Auto-ignition temperature [°C]	: 630
Other data	: Although this substance has flammability data, it is difficult to ignite in air and is classified as non-flammable.

10 Stability and reactivity

Hazardous decomposition products	: None.
Incompatible materials	: Air, Oxidiser. May react violently with oxidants. May react violently with acids. Reacts with water to form corrosive alkalis. Can form explosive mixture with air.
Conditions to avoid	: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

11 Toxicological information

Toxicity information	: Toxic by inhalation. May cause inflammation of the respiratory system and skin. Inhalation of large amounts leads to bronchospasm, laryngeal oedema and pseudomembrane formation.
Rat inhalation LC50 [ppm/4h]	: 2000

12 Ecological information

Ecological effects information	: May cause pH changes in aqueous ecological systems.
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13 Disposal considerations

General	: Avoid discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Gas may be scrubbed in sulphuric acid solution. Gas may be scrubbed in water. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Contact supplier if guidance is required.
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14 Transport information

UN number	: 1005
• Labelling ADR, IMDG, IATA	



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14 Transport information (continued)

: 8 : Corrosive substance.
2.3 : Toxic gas.
Environmentally hazardous substance or mixture.

Land transport

ADR/RID

H.I. nr : 268
UN proper shipping name : AMMONIA, ANHYDROUS
Transport hazard class(es) : 2
- ADR/RID Classification code : 2 TC
- Packing Instruction(s) - General : P200
- Tunnel Restriction : C/D : Passage forbidden through tunnels of category C when carried in tanks.
Passage forbidden through tunnels of category D and E.

Sea transport

- IMO-IMDG code
• Proper shipping name : AMMONIA, ANHYDROUS
• Class : 2.3
- IMO Packing group : P200
- Emergency Schedule (EmS) - Fire : F-C
- Emergency Schedule (EmS) - Spillage : S-U
- Instructions - Packing : P200

Air transport

- ICAO/IATA
- Proper shipping name : AMMONIA, ANHYDROUS
• Class : 2.3
• Passenger and Cargo Aircraft :
• Cargo Aircraft only :

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers :

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture : Ensure all national/local regulations are observed.



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15 Regulatory information (continued)

Seveso regulation 96/82/EC : Listed

16 Other information

Ensure operators understand the toxicity hazard.
Users of breathing apparatus must be trained.

List of full text of R-phrases in section 3. : R10 : Flammable.
R23 : Toxic by inhalation.
R34 : Causes burns.
R50 : Very toxic to aquatic organisms.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

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