

Safety data sheet Ammonia, anhydrous.

Creation date : 28.01.2005
Revision date : 04.01.2011

Version : 1.0

BE / E

SDS No. : 002
page 1 / 3

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Ammonia, anhydrous.

Trade name

Ammoniak
Ammoniak 3.6 Detector
Ammoniak 3.8
Ammoniak vloeibaar

EC No (from EINECS): 231-635-3

CAS No: 7664-41-7

Index-Nr. 007-001-00-5

Chemical formula NH₃
REACH Registration number:

Not available.

Known uses

Industrial application.

Company identification

Linde Gas Benelux - Industrial & Specialty Gases Belgium,
Westvaardijk 85, B-1850 Grimbergen

E-Mail Address sheq.lg.nl@linde.com

Emergency phone numbers (24h): +32 (0) 2 890 95 10

Poison center:

+32 (0) 70 245 245 (Anti Poison Centre, Brussels).

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification acc. to Regulation (EC) No 1272/2008/EC (CLP/GHS)

Press. Gas (Liquefied gas) - Contains gas under pressure; may explode if heated.

Flam. Gas 2 - Flammable gas.

Acute Tox. 3 - Toxic if inhaled.

Skin Corr. 1B - Causes severe skin burns and eye damage.

Acute Tox. 1 - Very toxic to aquatic life.

- Corrosive to the respiratory tract.

Classification acc. to Directive 67/548/EEC & 1999/45/EC

R10 | T; R23 | C; R34 | N; R50

Flammable

Toxic by inhalation.

Cause burns (to eyes, respiratory system and skin).

Very toxic to aquatic organisms.

Risk advice to man and the environment

Liquefied gas.

Label Elements

- Labelling Pictograms



- Signal word

Danger

- Hazard Statements

H280 Contains gas under pressure; may explode if heated.
H221 Flammable gas.

H331 Toxic if inhaled.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
EUH071 Corrosive to the respiratory tract.

- Precautionary Statements

Precautionary Statement Prevention

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

Precautionary Statement Reaction

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P303+P361+P353+P315 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothes. Rinse skin with water/shower. Get immediate medical advise/attention.
P304+P340+P315 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advise/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 advise/attention.

Precautionary Statement Storage

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

Precautionary Statement Disposal

None.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.

Components/Impurities

Ammonia, anhydrous.

CAS No: 7664-41-7

Index-Nr.: 007-001-00-5

EC No (from EINECS): 231-635-3

REACH Registration number:

Not available.

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

4 FIRST AID MEASURES

Inhalation

Toxic by inhalation. Irritating to respiratory system. 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

Safety data sheet Ammonia, anhydrous.

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BE / E

SDS No. : 002
page 2 / 3

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:

Suitable extinguishing media

All known extinguishants can be used.

Specific methods

If possible, stop flow of product. Move container away or cool with water from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.

Special protective equipment for fire fighters

Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES**Personal precautions**

Evacuate area. Use self-contained breathing apparatus and chemically protective clothing. Ensure adequate air ventilation. Monitor concentration of released product.

Environmental precautions

Try to stop release. Reduce vapour with fog or fine water spray.

Clean up methods

Ventilate area. Hose down area with water. 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).

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 handling instructions. Avoid exposure, obtain special instructions before use. Avoid suckback of water, acid and alkalis. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Assess the risk of potentially explosive atmosphere and the need for explosion-proof equipment. Consider the use of only non-sparking tools. Do not smoke while handling product. Only experienced and properly instructed persons should handle gases under pressure. Protect cylinders from physical damage; do not drag, roll, slide or drop. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Ensure the complete gas system has been (or is regularly) checked for leaks before use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to

repair or modify container valves or safety relief devices. Keep container valve outlets clean and free from contaminants particularly oil and water. Never attempt to transfer gases from one cylinder/container to another. Installation of a cross purge assembly between the cylinder and the regulator is recommended.

Storage

Secure cylinders to prevent them falling. Keep container below 50 °C in a well ventilated place. Segregate from oxidant gases and other oxidants in store. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent falling over. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. All electrical equipment in the storage areas should be compatible with the risk of potentially explosive atmosphere.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure limit value**

Value type	value	Note
TLV (ACGIH)	25 ppm	ACGIH 1995 - 1996
Belgium - STEL	50 ppm	
Belgium - TWA	20 ppm	

Personal protection

Protect eyes, face and skin from liquid splashes.

9 PHYSICAL AND CHEMICAL PROPERTIES**General information**

Appearance/Colour: Colourless gas.

Odour: Ammoniacal

Important information on environment, health and safety

Molecular weight: 17 g/mol

Melting point: -77,7 °C

Boiling point: -33 °C

Critical temperature: 132,4 °C

Autoignition temperature: 630 °C

Flammability range: 15 %(V) - 30 %(V)

Relative density, gas: 0,6

Relative density, liquid: 0,7

Vapour Pressure 20 °C: 8,6 bar

Solubility mg/l water: Hydrolyses.

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**Stability and reactivity**

May react violently with oxidants. May react violently with acids. Reacts with water to form corrosive alkalis. Can form explosive mixture with air.

Hazardous decomposition products**Statements on decomposition**

None.

11 TOXICOLOGICAL INFORMATION**Acute toxicity**

Inhalation of large amounts leads to bronchospasm, laryngeal oedema and pseudomembrane formation. May cause inflammation of the respiratory system and skin.

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BE / E

SDS No. : 002
page 3 / 3

LC50/1h (ppm) 4000 ppm

12 ECOLOGICAL INFORMATION**General**

May cause pH changes in aqueous ecological systems.

13 DISPOSAL CONSIDERATIONS**General**

Do not discharge into any place where its accumulation could be dangerous. Avoid discharge to atmosphere. Contact supplier if guidance is required. 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.

EWC Nr. 16 05 04*

14 TRANSPORT INFORMATION**ADR/RID**

Class	2	Classification Code	2TC
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UN number and proper shipping name

UN 1005 Ammonia, anhydrous

UN 1005 Ammonia, anhydrous

Labels	2.3, 8	Hazard number	268
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Packing Instruction	P200
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IMDG

Class	2.3
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UN number and proper shipping name

UN 1005 Ammonia, anhydrous

Labels 2.3, 8

Packing Instruction P200

EmS FC, SU

IATA

Class	2.3
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UN number and proper shipping name

UN 1005 Ammonia, anhydrous

Labels 2.3, 8

Packing Instruction P200

Other transport information

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

15 REGULATORY INFORMATION**Further national regulations**

This substance or preparation above certain volume may have to be included in a SEVESO II submission or any other applicable national regulation.

16 OTHER INFORMATION

Ensure all national/local regulations are observed. Ensure operators understand the toxicity hazard. Users of breathing apparatus must be trained. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Advice

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Details given in this document are believed to be correct at the time of going to press.

Further information

Hommel: Handbook of dangerous goods

Kühn-Birett: Merkblätter gefährliche Arbeitsstoffe

Linde safety advice

End of document