

Section 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier****Product name:** AMMONIA, ANHYDROUS**CAS number:** 7664-71-7**EINECS number:** 231-635-3**Index number:** 007-001-00-5**Product code:** AMMONIA**Synonyms:** REFRIGERANT R717**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.3. Details of the supplier of the safety data sheet****Company name:** National Refrigerants Ltd
4 Watling Close
Sketchley Meadows Business Park
Hinckley
Leicestershire
LE10 3EZ
United Kingdom
Tel: 01455 630790
Fax: 01455 630791
Email: sds@nationalref.com**1.4. Emergency telephone number****Emergency tel:** Carechem24 +44 (0)1865 407333**Section 2: Hazards identification****2.1. Classification of the substance or mixture****Classification under CLP:** Acute Tox. 2: H330; Aquatic Acute 1: H400; Skin Corr. 1B: H314**Most important adverse effects:** Causes severe skin burns and eye damage. Fatal if inhaled. Very toxic to aquatic life.**2.2. Label elements****Label elements:****Hazard statements:** H314: Causes severe skin burns and eye damage.

H330: Fatal if inhaled.

H400: Very toxic to aquatic life.

Hazard pictograms: GHS05: Corrosion

GHS06: Skull and crossbones

GHS09: Environmental

SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 2



Signal words: Danger

Precautionary statements: P260: Do not breathe dust/fumes/gas/mist/vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P284: [In case of inadequate ventilation] wear respiratory protection.
P301+330+331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: AMMONIA, ANHYDROUS

CAS number: 7664-71-7

EINECS number: 231-635-3

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Wash out mouth with water. Do not induce vomiting. Give 1 cup of water to drink every 10 minutes. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be bleeding from the mouth or nose.

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SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 3

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: Corrosive. In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Notify the police and fire brigade immediately. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

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SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 4

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

Suitable packaging: Must only be kept in original packaging.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

AMMONIA, ANHYDROUS

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	18 mg/m ³	25 mg/m ³	-	-

DNEL/PNEC Values

AMMONIA, ANHYDROUS

Type	Exposure	Value	Population	Effect
DNEL	Dermal	6.8 mg/kg bw/day	Workers	Systemic
DNEL	Inhalation	36 mg/m ³	Workers	Local
DNEL	Inhalation (repeated dose)	14 mg/cm ³	Workers	Local
PNEC	Fresh water	1.1 ug/l	-	-
PNEC	Marine water	1.1 ug/l	-	-

Hazardous ingredients:

AMMONIA, ANHYDROUS

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PNEC	Fresh water	1.1 ug/l	-	-
PNEC	Marine water	1.1 ug/l	-	-

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Impermeable gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Impermeable protective clothing.

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SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 5

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquified gas

Colour: Colourless

Odour: Pungent

Solubility in water: Reacts with water.

Boiling point/range°C: -33

Melting point/range°C: -77.7

Flammability limits %: lower: 15

upper: 30

Flash point°C: Not applicable.

Part.coeff. n-octanol/water: < 1 logPow

Autoflammability°C: 630

Vapour pressure: 8.6 Bar @ 20oC

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Relevant hazards for product:

Hazard	Route	Basis
Acute toxicity (ac. tox. 2)	INH	Hazardous: calculated

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SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 6

Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be bleeding from the mouth or nose.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values:

Species	Test	Value	Units
RAINBOW TROUT (<i>Oncorhynchus mykiss</i>)	96H LC50	0.16-1.1	mg/l
Daphnia magna	48H EC50	25.4	mg/l

Hazardous ingredients:

AMMONIA, ANHYDROUS

Daphnia magna	48H EC50	25.4	mg/l
RAINBOW TROUT (<i>Oncorhynchus mykiss</i>)	96H LC50	0.16-1.1	mg/l

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: Readily absorbed into soil.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

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SAFETY DATA SHEET

AMMONIA, ANHYDROUS

Page: 7

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN1005

14.2. UN proper shipping name

Shipping name: AMMONIA, ANHYDROUS

14.3. Transport hazard class(es)

Transport class: 2 (8)

14.4. Packing group

14.5. Environmental hazards

Environmentally hazardous: Yes

Marine pollutant: No

14.6. Special precautions for user

Special precautions: No special precautions.

Tunnel code: C/D

Transport category: 1

Section 15: Regulatory information

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

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H314: Causes severe skin burns and eye damage.

H330: Fatal if inhaled.

H400: Very toxic to aquatic life.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

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