

SAFETY DATA SHEET

Version 6.1
Revision Date 14.05.2020
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Ammonia
Product Number : 294993
Brand : Aldrich
Index-No. : 007-001-00-5
CAS-No. : 7664-41-7

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : MilliporeSigma Canada Ltd
2149 WINSTON PARK DRIVE
OAKVILLE ON L6H 6J8
CANADA
Telephone : +1 905 829-9500
Fax : +1 905 829-9292

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC
(International)
24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Gases under pressure (Liquefied gas), H280
Acute toxicity, Inhalation (Category 3), H331
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H280 Contains gas under pressure; may explode if heated.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe gas.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash 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 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
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 CENTER/ doctor.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Corrosive to the respiratory tract.

- none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : H₃N
Molecular weight : 17.03 g/mol
CAS-No. : 7664-41-7
EC-No. : 231-635-3
Index-No. : 007-001-00-5

Component	Classification	Concentration *
Ammonia, anhydrous	Press. Gas Liquefied gas;	<= 100 %

	Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 2; H280, H331, H314, H318, H400, H411 M-Factor - Aquatic Acute: 1	
* Weight percent		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x)
Not combustible.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Contents under pressure.

Storage class (TRGS 510): 2A: Gases

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Ammonia, anhydrous	7664-41-7	TWAEV	25 ppm 17 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEV	35 ppm 24 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

		TWA	25 ppm 17 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	35 ppm 24 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	25 ppm	Canada. British Columbia OEL
		STEL	35 ppm	Canada. British Columbia OEL
		TWA	25 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	35 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Form: Liquefied gas Colour: colourless
b) Odour	stinging, Do not attempt to smell the product as it is hazardous.
c) Odour Threshold	No data available
d) pH	ca.10 - 12 at 50 g/l at 20 °C (68 °F)
e) Melting point/freezing point	Melting point/range: -78 °C (-108 °F) - lit.
f) Initial boiling point and boiling range	-33 °C -27 °F - lit.
g) Flash point	()Not applicable
h) Evaporation rate	Not applicable
i) Flammability (solid, gas)	The product is not flammable.
j) Upper/lower flammability or explosive limits	Upper explosion limit: 25 %(V) Lower explosion limit: 16 %(V)
k) Vapour pressure	8,600 hPa at 20 °C (68 °F)
l) Vapour density	0.6 - (Air = 1.0)
m) Relative density	0.7 g/cm ³ at -33 °C (-27 °F) - liquid
n) Water solubility	531 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p) Auto-ignition temperature	651 °C (1204 °F)
q) Decomposition temperature	> 450 °C (> 842 °F) -
r) Viscosity	No data available

- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information

Dissociation constant 9.25 at 25 °C (77 °F)
Relative vapour density 0.6 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO_x)
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available

LC50 Inhalation - Rat - male - 4 h - 4.93 mg/l

Remarks: (ECHA)

Dermal: No data available

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive - 4 h

(OECD Test Guideline 404)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

OECD Test Guideline 474

Mouse - male - Bone marrow

Result: negative

(in analogy to similar products)

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 35 Days - No observed adverse effect level - 250 mg/kg - Lowest observed adverse effect level - 750 mg/kg

(in analogy to similar products)

RTECS: B00875000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - 0.75 - 3.4 mg/l - 96 h
Remarks: (in analogy to similar products)(ECHA)

Toxicity to daphnia and other aquatic invertebrates static test LC50 - Daphnia magna (Water flea) - 101 mg/l - 48 h
Remarks: (ECHA)

EC50 - Daphnia pulicaria - 1.16 mg/l - 48 h
Remarks: (Lit.)

12.2 Persistence and degradability

Biodegradability Result: - rapidly biodegradable
Remarks: Readily biodegradable.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Contact a licensed professional waste disposal service to dispose of this material. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 1005 Class: 2.3 (8)

Proper shipping name: Ammonia, anhydrous

Reportable Quantity (RQ): 100 lbs

- Marine pollutant: yes Poison Inhalation Hazard: Hazard Zone D

IMDG

UN number: 1005 Class: 2.3 (8)

Proper shipping name: AMMONIA, ANHYDROUS

Marine pollutant : yes

Marine pollutant : yes

EMS-No: F-C, S-U

IATA

UN number: 1005 Class: 2.3 (8)

Proper shipping name: Ammonia, anhydrous

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

SECTION 15: Regulatory information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16: Other information

Further information

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