

# SAFETY DATA SHEET

Version 8.5  
Revision Date 04.06.2021  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Ammonia solution 32% EMPLURA®  
Product Number : 1.05426  
Catalogue No. : 105426  
Brand : Millipore

### 1.2 Other means of identification

No data available

### 1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagent for analysis, Chemical production

### 1.4 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Pty. Ltd.  
Suite 1, Level 1, Building B  
11 Talavera Road  
MACQUARIE PARK NSW 2113  
AUSTRALIA

Telephone : +61 1800 800 097

### 1.5 Emergency telephone

Emergency Phone # : Free call (24/7): 1800 448 465  
Int'l (24/7): +61 2 9037 2994  
(CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 GHS Classification

Skin corrosion/irritation (Category 1), H314  
Serious eye damage/eye irritation (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335  
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)

H314

Causes severe skin burns and eye damage.

H335

May cause respiratory irritation.

H400

Very toxic to aquatic life.

|                            |  |
|----------------------------|--|
| H411                       | Toxic to aquatic life with long lasting effects.   |
| Precautionary statement(s) |  |
| Prevention                 |  |
| P261                       | Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  |
| P264                       | Wash skin thoroughly after handling.   |
| P273                       | Avoid release to the environment.  |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| Response                   |  |
| 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/ shower.   |
| 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. |
| P391                       | Collect spillage.  |
| Storage                    |  |
| P403 + P233                | Store in a well-ventilated place. Keep container tightly closed.   |

**2.3 Other hazards** - none

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**SECTION 3: Composition/information on ingredients**

Substance / Mixture : Mixture

**3.2 Mixtures**

**Hazardous ingredients**

| Component               | Classification  | Concentration  |
|-------------------------|---|----------------|
| <b>ammonia solution</b> |   |                |
| CAS-No. 1336-21-6       | 1B; 1; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 2; H314, H318, H335, H400, H411<br>Concentration limits:<br>>= 5 %: STOT SE 3, H335;<br>M-Factor - Aquatic Acute: 10 | >= 30 - < 50 % |
| EC-No. 215-647-6        |   |                |
| Index-No. 007-001-01-2  |   |                |

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

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**SECTION 4: First aid measures**

**4.1 Description of first-aid measures**

**General advice**

First aiders need to protect themselves.

**If inhaled**

After inhalation: fresh air. Call in physician.

**In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

**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

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Nitrogen oxides (NO<sub>x</sub>)

Not combustible.

Ammonia solution itself is not flammable, but can form an ignitable ammonia/air-mixture by outgassing.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:  
nitrogen oxides

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not empty into drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® OH<sup>-</sup>, Merck Art. No. 101596). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Observe label precautions.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

No metal or light-weight-metal containers.

Tightly closed.

Recommended storage temperature see product label.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific uses are stipulated.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.40 mm

Break through time: 240 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

### **Body Protection**

protective clothing

### **Respiratory protection**

required when vapours/aerosols are generated.

### **Control of environmental exposure**

Do not empty into drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |   |  |
|---|--|
| a) Appearance                                   | Form: liquid<br>Color: colorless   |
| b) Odor   | stinging   |
| c) Odor Threshold                               | 0.03 - 0.05 ppm - Ammonia  |
| d) pH   | at 20 °C<br>strongly alkaline  |
| e) Melting point/freezing point                 | Melting point: -91.5 °C  |
| f) Initial boiling point and boiling range      | 37.7 °C at 1,013 hPa   |
| g) Flash point                                  | No data available  |
| h) Evaporation rate                             | No data available  |
| i) Flammability (solid, gas)                    | No data available  |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 33.6 %(V)<br>Lower explosion limit: 15.4 %(V)     |
| k) Vapor pressure                               | ca.837 hPa at 20 °C  |
| l) Vapor density                                | No data available  |
| m) Relative density                             | No data available  |
| n) Water solubility                             | at 20 °C soluble   |
| o) Partition coefficient: n-octanol/water       | log Pow: -1.38 - (anhydrous substance), Bioaccumulation is not expected. |
| p) Autoignition temperature                     | No data available  |

- |                              |  |
|------------------------------|--|
| q) Decomposition temperature | No data available  |
| r) Viscosity                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| s) Explosive properties      | No data available  |
| t) Oxidizing properties      | No data available  |

## 9.2 Other safety information

Minimum ignition energy      380 - 680 mJ

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Ammonia solution itself is not flammable, but can form an ignitable ammonia/air-mixture by outgassing.

### 10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Oxidizing agents

Mercury

Oxygen

silver compounds

nitrogen trichloride

hydrogen peroxide

silver

antimony hydride

Halogens

Acids

Calcium

Chlorine

Chlorites

auric salts

perchlorates

sodium hypochlorite

mercury compounds

halogen oxides

Heavy metals

Heavy metal salts

Acid chlorides

Acid anhydrides

Risk of ignition or formation of inflammable gases or vapours with:

Boranes

Boron

Oxides of phosphorus

Nitric acid

silicon compounds

chromium(VI) oxide

chromyl chloride

Exothermic reaction with:

Acetaldehyde

Acrolein

Barium  
boron compounds  
Bromine  
halogen-halogen compounds  
hydrogen bromide  
silane  
Hydrogen chloride gas  
halogen compounds  
dimethylsulfate  
nitrogen oxides  
Fluorine  
Hydrogen fluoride  
chlorates  
carbon dioxide  
Ethylene oxide  
polymerisable

#### **10.4 Conditions to avoid**

Heating.

#### **10.5 Incompatible materials**

Aluminum, Lead, Nickel, silver, Zinc, Copper, metal alloys, various metals

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Mixture**

##### **Acute toxicity**

LDLo Oral - Human - 43 mg/kg

Remarks: (29% solution)

(RTECS)

Symptoms: gastric pain, Bloody vomiting, If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: mucosal irritations, Cough, Shortness of breath, bronchitis, Possible damages:, damage of respiratory tract

Dermal: No data available

##### **Skin corrosion/irritation**

Skin - Rabbit

Result: Severe irritations

Remarks: (29% solution)

(RTECS)

Dermatitis Necrosis

##### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Severe irritations

Remarks: (29% solution)

(RTECS)

Mixture causes serious eye damage. Risk of blindness!

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Mixture may cause respiratory irritation. - Respiratory system

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Cough  
Shortness of breath  
bronchitis  
gastric pain  
Bloody vomiting  
Nausea  
collapse  
shock  
Unconsciousness

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

**Components****ammonia solution****Acute toxicity**

Oral: No data available

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Dermal: No data available

**Skin corrosion/irritation**

Causes skin burns.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available



**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

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**SECTION 12: Ecological information****12.1 Toxicity****Mixture**

No data available

**12.2 Persistence and degradability**

Biodegradability                      Remarks: No data available

**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**

Biological effects:

Harmful effect due to pH shift.

Forms toxic and corrosive mixtures with water even if diluted.

Discharge into the environment must be avoided.

No data available

**Components****ammonia solution**

Toxicity to fish

flow-through test LC50 - Pimephales promelas (fathead minnow) - 0.068 mg/l - 96 h

Remarks: (in analogy to similar products) (ECHA)

The value is given in analogy to the following substances: ammonium sulphate

Toxicity to daphnia and other aquatic invertebrates

static test LC50 - Daphnia magna (Water flea) - 101 mg/l - 48 h

Remarks: (ECHA) anhydrous

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2672

IMDG: 2672

IATA-DGR: 2672

### 14.2 UN proper shipping name

ADR/RID: AMMONIA SOLUTION

IMDG: AMMONIA SOLUTION

IATA-DGR: Ammonia solution

### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA-DGR: 8

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA-DGR: III

### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: no

### 14.6 Special precautions for user

None

### 14.7 Incompatible materials

Aluminum, Lead, Nickel, silver, Zinc, Copper, metal alloys, various metals

#### Other regulations

Hazchem Code : 2X

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## SECTION 15: Regulatory information

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

#### Notification status

**AICS:** On the inventory, or in compliance with the inventory

**DSL:** All components of this product are on the Canadian DSL

**ENCS:** On the inventory, or in compliance with the inventory

**ISHL:** Not in compliance with the inventory - water

**KECI:** On the inventory, or in compliance with the inventory

**NZIoC:** Not in compliance with the inventory - ammonia solution

**PICCS:** On the inventory, or in compliance with the inventory

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## SECTION 16: Other information

**Training advice** Provide adequate information, instruction and training for operators.

**Full text of H-Statements referred to under sections 2 and 3.**

H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.

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