

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Diethylene glycol mono-n-hexyl ether for synthesis

Product Number : 8.18382  
Catalogue No. : 818382  
Brand : Millipore  
Index-No. : 603-175-00-7  
REACH No. : 01-2119945815-28-XXXX  
CAS-No. : 112-59-4

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

Identified uses : Chemical for synthesis

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

Company : China Amines Co., Ltd  
UNIT 1021, BEVERLEY COMMERCIAL  
CENTRE, 87-105 CHATHAM ROAD  
SOUTH, TSIM SHA TSUI, KOWLOON  
HONG KONG

Telephone : +86 18938922889

E-mail address : info@chinaamines.com

### 1.4 Emergency telephone

Emergency Phone # : +86 18938922889

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567**

Acute toxicity, (Category 4) H312: Harmful in contact with skin.

Skin irritation, (Category 2) H315: Causes skin irritation.

Serious eye damage, (Category 1)

H318: Causes serious eye damage.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Pictogram



Signal Word

Danger

Hazard Statements

H312

Harmful in contact with skin.

H315

Causes skin irritation.

H318

Causes serious eye damage.

Precautionary Statements

P264

Wash skin thoroughly after handling.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P302 + P352 + P312

IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313

If skin irritation occurs: Get medical advice/ attention.

P362 + P364

Take off contaminated clothing and wash it before reuse.

Supplemental Hazard Statements

none

### Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard Statements

H318

Causes serious eye damage.

Precautionary Statements

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>10</sub>H<sub>22</sub>O<sub>3</sub>  
CAS-No. : 112-59-4  
EC-No. : 203-988-3  
Index-No. : 603-175-00-7

Component	Classification	Concentration
<b>diethylene glycol monohexyl ether</b>		
CAS-No. 112-59-4 EC-No. 203-988-3 Index-No. 603-175-00-7	Acute Tox. 4; Eye Dam. 1; H312, H318	<= 100 %
<b>diethylene glycol</b>		
CAS-No. 111-46-6 EC-No. 203-872-2 Index-No. 603-140-00-6	Acute Tox. 4; H302	>= 1 - < 10 %
<b>2-(hexyloxy)ethanol</b>		
CAS-No. 112-25-4 EC-No. 203-951-1 Index-No. 603-178-00-3	Acute Tox. 4; Acute Tox. 3; Skin Corr. 1B; H302, H311, H314	>= 1 - < 3 %

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

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

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

#### 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: immediately make victim drink water (two glasses at most). 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

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

Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

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

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

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

**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**

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 let product enter 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 material (e.g. Chemisorb®). 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

For precautions see section 2.2.

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

#### Storage conditions

Tightly closed.

Recommended storage temperature see product label.

#### Storage class

Storage class (TRGS 510): 10: Combustible liquids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 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

Component	CAS-No.	Control parameters	Value	Basis
diethylene glycol	111-46-6	TWA	23 ppm 101 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). 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 EN 16523-1 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: Nitrile rubber

Minimum layer thickness: 0.40 mm

Break through time: 480 min

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

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 EN 16523-1 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: Latex gloves

Minimum layer thickness: 0.6 mm

Break through time: 240 min

Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

### **Body Protection**

protective clothing

### **Respiratory protection**

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### **Control of environmental exposure**

Do not let product enter drains.

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

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

- |   |  |
|---|--|
| a) Physical state                               | liquid   |
| b) Color  | colorless  |
| c) Odor   | mild   |
| d) Melting point/freezing point                 | Melting point: -41 - -39 °C  |
| e) Initial boiling point and boiling range      | 260 °C at 1,013 hPa  |
| f) Flammability (solid, gas)                    | No data available  |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 6.3 %(V)<br>Lower explosion limit: 1.1 %(V) |
| h) Flash point                                  | 123 °C   |
| i) Autoignition temperature                     | No data available  |
| j) Decomposition temperature                    | No data available  |
| k) pH   | 5 - 7 at 200 g/l at 20 °C  |

- |  |   |
|--|---|
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: 8.0 mPa.s at 20 °C |
| m) Water solubility                          | 17 g/l at 20 °C   |
| n) Partition coefficient:<br>n-octanol/water | log Pow: 1.70 - (Lit.), Bioaccumulation is not expected.                          |
| o) Vapor pressure                            | < 0.01 hPa at 20 °C<br>13 hPa at 134 °C   |
| p) Density                                   | 0.93 g/cm <sup>3</sup> at 20 °C   |
| Relative density                             | No data available   |
| q) Relative vapor<br>density                 | No data available   |
| r) Particle<br>characteristics               | No data available   |
| s) Explosive properties                      | Not classified as explosive.  |
| t) Oxidizing properties                      | none  |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidizing agents  
Strong acids  
strong alkalis

### 10.4 Conditions to avoid

Strong heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.  
Strong heating.

### 10.5 Incompatible materials

No data available

### 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

#### Acute toxicity

LD50 Oral - Rat - female - 3,488 mg/kg

LD50 Oral - Rat - female - 3,488 mg/kg (diethylene glycol monohexyl ether)

Remarks: (ECHA)

Symptoms: Possible damages:, mucosal irritations

LD50 Dermal - Rabbit - 1,395 mg/kg

LD50 Dermal - Rabbit - 1,400 mg/kg (diethylene glycol monohexyl ether)

Remarks: (RTECS)

#### Skin corrosion/irritation

Skin - Rabbit (diethylene glycol monohexyl ether)

Result: No skin irritation - 4 h

(Regulation (EC) No. 440/2008, Annex, B.4)

#### Serious eye damage/eye irritation

Eyes - Rabbit (diethylene glycol monohexyl ether)

Result: Irreversible effects on the eye

(OECD Test Guideline 405)

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

#### Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse (diethylene glycol monohexyl ether)

Result: negative

(OECD Test Guideline 429)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Ames test

(diethylene glycol monohexyl ether)

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

(diethylene glycol monohexyl ether)

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: sister chromatid exchange assay

(diethylene glycol monohexyl ether)

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 479

Result: negative

(diethylene glycol monohexyl ether)



Test Type: Chromosome aberration test  
Species: Rat  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 475  
Result: negative

**Carcinogenicity**

No data available

**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

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 53 d - NOAEL (No observed adverse effect level) - 300 mg/kg  
(diethylene glycol monohexyl ether)

Repeated dose toxicity - Rat - male and female - Inhalation - 98 d  
Remarks: Subchronic toxicity  
(diethylene glycol monohexyl ether)

Repeated dose toxicity - Rat - male and female - Dermal - 13 Weeks - NOAEL (No observed adverse effect level) - < 200 mg/kg  
(diethylene glycol monohexyl ether)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (diethylene glycol monohexyl ether)

Handle in accordance with good industrial hygiene and safety practice.  
(diethylene glycol monohexyl ether)

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**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish                      static test LC50 - Pimephales promelas (fathead minnow) - 200 mg/l  
- 96 h (diethylene glycol monohexyl ether)

	(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (diethylene glycol monohexyl ether) (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - 198.31 mg/l - 96 h (diethylene glycol monohexyl ether) (OECD Test Guideline 201)
Toxicity to bacteria	static test NOEC - activated sludge - 1,000 mg/l - 0.5 h (diethylene glycol monohexyl ether) (OECD Test Guideline 209)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test EC10 - Ceriodaphnia dubia (water flea) - 19.63 mg/l - 7 d (diethylene glycol monohexyl ether) Remarks: (ECHA)

## 12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 15 d (diethylene glycol monohexyl ether) Result: 90 - 100 % - Readily biodegradable. (OECD Test Guideline 301A)
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## 12.3 Bioaccumulative potential

No data available

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Endocrine disrupting properties

### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

Discharge into the environment must be avoided.

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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. Notice Directive on waste 2008/98/EC.

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: -                                      IMDG: -                                      IATA: -

**14.2 UN proper shipping name**

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

**14.3 Transport hazard class(es)**

ADR/RID: -                                      IMDG: -                                      IATA: -

**14.4 Packaging group**

ADR/RID: -                                      IMDG: -                                      IATA: -

**14.5 Environmental hazards**

ADR/RID: no                                      IMDG Marine pollutant: no                                      IATA: no

**14.6 Special precautions for user**

No data available

**Further information**

Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Authorisations and/or restrictions on use****Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

### Full text of H-Statements

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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