

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Diphenyl ether

CAS-No.: 101-84-8

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

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)


Eye irritation (Category 2A), H319

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (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	Warning
Hazard statement(s)	H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	P264 Wash skin thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/ eye protection/ face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention. P391 Collect spillage. P501 Dispose of contents/ container to an approved waste disposal plant.

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

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Phenyl ether
Diphenyl oxide
Formula: $C_{12}H_{10}O$
Molecular weight: 170.21 g/mol
CAS-No.: 101-84-8
EC-No.: 202-981-2

Hazardous components

Component	Classification	Concentration
Diphenyl ether	Eye Irrit. 2A; Aquatic Acute 2; Aquatic Chronic 2; H319, H411	<= 100 %

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
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
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

4.2 Indication of any immediate medical attention and special treatment needed

No data available

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

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

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.

7.3 Specific end use(s)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Diphenyl ether	101-84-8	TWA	1.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye & Upper Respiratory Tract irritation Nausea		
		STEL	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Eye & Upper Respiratory Tract irritation Nausea		
		TWA	1.000000 ppm 7.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	1.000000 ppm 7.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 ppm 7.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	1.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Nausea		
		STEL	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Nausea		
		TWA	1.000000 ppm 7.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	1 ppm 7 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
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Skin protection	<p>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.</p> <p>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)</p> <p>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</p> <p>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.</p>
Body Protection	Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: crystalline Colour: white
Odour	unpleasant
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 25 - 27 °C (77 - 81 °F)
Initial boiling point and boiling range	259 °C (498 °F)
Flash point	115 °C (239 °F) - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 1.5 %(V) Lower explosion limit: 0.8 %(V)
Vapour pressure	1,013 hPa (760 mmHg) at 257.9 °C (496.2 °F) < 1 hPa (< 1 mmHg) at 20 °C (68 °F)
Vapour density	No data available
Relative density	1.073 g/mL at 25 °C (77 °F)
Water solubility	No data available
Partition coefficient: n-octanol/water	log Pow: 4.21 at 25 °C (77 °F)
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

No data available

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

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 3,370 mg/kg Inhalation: No data available LD50 Dermal - Rabbit - > 5,000 mg/kg No data available
Skin corrosion/irritation
Skin - Rabbit Result: Mild skin irritation - 24 h
Serious eye damage/eye irritation
Eyes - Rabbit Result: Irritating to eyes.
Respiratory or skin sensitisation
No data available
Germ cell mutagenicity
No data available
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. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
No data available 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
RTECS: KN8970000 prolonged or repeated exposure can cause:., Dermatitis, Liver injury may occur., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Cyprinodon variegatus (sheepshead minnow) - 1.0 - 2.4 mg/l - 96.0 h LC50 - Leuciscus idus (Golden orfe) - 3.0 mg/l - 48.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.7 mg/l - 48 h
Toxicity to algae	No data available
Toxicity to bacteria	No data available

12.2 Persistence and degradability

Ratio BOD/ThBOD 62 %

12.3 Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 7 d - 16 µg/l Bioconcentration factor (BCF): 470 Indication of bioaccumulation.
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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.

Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenyl ether)

Marine pollutant: yes

IATA

UN number: 3077 Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Diphenyl ether)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

Component	CAS-No.	Revision Date
Diphenyl ether	101-84-8	2007-03-01

Pennsylvania Right To Know Components

Component	CAS-No.	Revision Date
Diphenyl ether	101-84-8	2007-03-01

New Jersey Right To Know Components

Component	CAS-No.	Revision Date
Diphenyl ether	101-84-8	2007-03-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

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

Aquatic Acute Acute aquatic toxicity

Aquatic Chronic Chronic aquatic toxicity

Eye Irrit. Eye irritation

H319 Causes serious eye irritation.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard: 2

Chronic Health Hazard: *

Flammability: 1

Physical Hazard 0

NFPA Rating

Health hazard: 2

Fire Hazard: 1

Reactivity Hazard: 0

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. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.