

# SAFETY DATA SHEET

**EASTMAN**

According to REACH Regulation (EC) No 1907/2006, as amended by  
UK REACH Regulations SI 2019/758

## Therminol® VP1 Heat Transfer Fluid

Version 11.0 Revision Date: 02.03.2023 SDS Number: 150000093459 Date of last issue: 21.12.2022  
PRD SDSGB / EN / 0001 Date of first issue: 18.09.2013

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

#### 1.1 Product identifier

Trade name : Therminol® VP1 Heat Transfer Fluid  
Product code : 34152-00, P3415203, P3415202, P3415200, E3415201

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

Use of the Substance/Mixture : Heat transfer fluids

Recommended restrictions on use : None known.

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

Company : Eastman Chemical Company  
200 South Wilcox Drive  
37660-5280 Kingsport  
Telephone : +14232292000  
E-mail address of person responsible for the SDS : Visit our website at [www.EASTMAN.com](http://www.EASTMAN.com) or email [emnmsds@eastman.com](mailto:emnmsds@eastman.com)

#### 1.4 Emergency telephone number

Tel. 111

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

Acute toxicity, Category 4 H332: Harmful if inhaled.

Skin irritation, Category 2 H315: Causes skin irritation.

Specific target organ toxicity - single exposure, Category 3, Respiratory system H335: May cause respiratory irritation.

Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard, Category 1 H410: Very toxic to aquatic life with long lasting effects.

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### 2.2 Label elements

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

Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	H315 Causes skin irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	<b>Prevention:</b> P261 Avoid breathing mist or vapours. P264 Wash skin thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves. <b>Response:</b> P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. P391 Collect spillage.

Hazardous components which must be listed on the label:

Biphenyl; diphenyl

### 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.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)

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Diphenyl oxide, Diphenyl ether	101-84-8 202-981-2	Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 3; H412  M-Factor (Acute aquatic toxicity): 1	>= 70 - < 90
Biphenyl; diphenyl	92-52-4 202-163-5 601-042-00-8	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory sys- tem) Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 25 - < 30

For explanation of abbreviations see section 16.

*Eastman is committed to the safety, health and environment of our employees, our customers, and the communities we operate within. As part of this commitment, Eastman's Safety Data Sheets (SDS) are prepared in accordance with all applicable national and local regulations. The compositions of our documents reflect these requirements which include, but are not limited to, requirements under the Globally Harmonized System of Classification and Labeling (GHS). These compositions commonly involve the use of ranges versus specific analytical values. If you require a composition that is more specific, please refer to the Certificate of Analysis, sales specification, or contact your Customer Service Representative.*

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

If inhaled : Remove person to fresh air and keep comfortable for breath-  
ing.

If breathing is difficult, give oxygen.  
Consult a physician if necessary.

In case of skin contact : Wash off immediately with soap and plenty of water while  
removing all contaminated clothes and shoes.  
If skin irritation occurs: Get medical advice/ attention.  
Wash contaminated clothing before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water  
for at least 15 minutes.

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Get medical attention if symptoms occur.

If swallowed : IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
Do NOT induce vomiting.  
Rinse mouth.  
Never give anything by mouth to an unconscious person.

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

Symptoms : Causes skin irritation.  
May cause respiratory irritation.  
The molten product can cause serious burns.

Risks : Harmful if inhaled.

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

Treatment : Treat symptomatically.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Water spray  
Carbon dioxide (CO2)  
Dry chemical  
Foam

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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

Hazardous combustion products : Hazardous decomposition products due to incomplete combustion  
Carbon oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

Further information : Use a water spray to cool fully closed containers.  
Do not allow run-off from fire fighting to enter drains or water courses.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Ventilate the area.

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Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Avoid contact with skin and eyes.  
Material can create slippery conditions.  
Wear appropriate personal protective equipment.  
Local authorities should be advised if significant spillages cannot be contained.

### 6.2 Environmental precautions

Environmental precautions : Clear up spills immediately and dispose of waste safely.  
Avoid release to the environment.  
Collect spillage.

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

Methods for cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).  
Prevent runoff from entering drains, sewers, or streams.

### 6.4 Reference to other sections

For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapors or spray mist.  
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Keep away from flames and sparks.  
Wear appropriate personal protective equipment.  
Avoid contact with skin, eyes and clothing.  
Wash thoroughly after handling.  
Wash contaminated clothing before reuse.  
Drain or remove substance from equipment prior to break-in or maintenance.  
Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

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

Requirements for storage areas and containers : Store locked up. Keep container tightly closed in a dry and well-ventilated place. Keep in a cool place away from oxidizing agents.

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### 7.3 Specific end use(s)

Specific use(s) : [www.therminol.com/products/](http://www.therminol.com/products/)

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Diphenyl oxide, Diphenyl ether	101-84-8	TWA	1 ppm 7 mg/m <sup>3</sup>	GB EH40
		STEL	2 ppm 14 mg/m <sup>3</sup>	GB EH40
		STEL	2 ppm 14 mg/m <sup>3</sup>	2017/164/EU
Further information: Indicative				
		TWA	1 ppm 7 mg/m <sup>3</sup>	2017/164/EU
Further information: Indicative				

### 8.2 Exposure controls

#### Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

#### Personal protective equipment

Eye/face protection : Wear safety glasses with side shields (or goggles).

Hand protection

Remarks : Wear suitable gloves. When handling hot material, use heat resistant gloves.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable.

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Protective measures : Ensure that eye flushing systems and safety showers are

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located close to the working place.

### SECTION 9: Physical and chemical properties

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

Appearance	:	liquid
Colour	:	colourless
Odour	:	characteristic
Odour Threshold	:	not determined
pH	:	not determined
Melting point/range	:	12 °C
Boiling point/boiling range	:	257 °C (1,013 hPa)
Flash point	:	110 °C Method: Pensky-Martens closed cup
		124 °C Method: Cleveland open cup
Evaporation rate	:	not determined
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	not determined
Relative vapour density	:	not determined
Relative density	:	1.06 (25 °C)
Density	:	1,060 kg/m <sup>3</sup> (25 °C)
Solubility(ies)		
Water solubility	:	0.025 g/l
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	not determined
Decomposition temperature	:	not determined

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### Viscosity

Viscosity, dynamic : not determined

Viscosity, kinematic : 2.48 mm<sup>2</sup>/s (40 °C)  
0.99 mm<sup>2</sup>/s (100 °C)

Explosive properties : Not classified

Oxidizing properties : Not classified

## 9.2 Other information

Self-ignition : 621 °C  
Method: ASTM D2155

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None reasonably foreseeable.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

### 10.4 Conditions to avoid

Conditions to avoid : Heating in air.  
Keep away from flames and sparks.

### 10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

### 10.6 Hazardous decomposition products

Emits acrid smoke and fumes when heated to decomposition.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Harmful if inhaled.

#### Product:

Acute oral toxicity : LD50 (Rat): 2,050 mg/kg  
Assessment: May be harmful if swallowed.

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Acute inhalation toxicity : LC50 (Rat, male and female): 2.66 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: Harmful if inhaled.

Acute dermal toxicity : LD50 Dermal (Rabbit): Assessment: Not classified

### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Acute oral toxicity	: LD50 Oral (Rat, female): 2,830 mg/kg
Acute inhalation toxicity	: LC50: Test atmosphere: vapour Remarks: No data available
Acute dermal toxicity	: LD50 Dermal (Rabbit, male and female): > 7,940 mg/kg

### **Skin corrosion/irritation**

Causes skin irritation.

### Product:

Species	: Rabbit
Exposure time	: 24 h
Assessment	: Causes skin irritation.
Result	: slight

### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Species	: Rabbit
Exposure time	: 4 h
Result	: none

### **Biphenyl; diphenyl:**

Species	: Rabbit
Result	: slight
Species	: Humans
Assessment	: Irritating to skin.
Result	: strong

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

Not classified based on available information.

### Product:

Species	: Rabbit
Exposure time	: 24 h
Assessment	: Not classified

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Result : No eye irritation

### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Species	:	Rabbit
Exposure time	:	4 h
Assessment	:	irritating
Result	:	corneal opacity

Result : slight to moderate

#### **Biphenyl; diphenyl:**

Species	:	Rabbit
Result	:	slight irritation
Species	:	Humans
Assessment	:	Irritating to eyes.
Result	:	strong

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

Not classified based on available information.

#### **Respiratory sensitisation**

Not classified based on available information.

### Product:

Remarks : No data available

### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Test Type	:	Skin Sensitization
Species	:	Guinea pig
Assessment	:	Not classified
Method	:	OECD 406: Guinea pig sensitization
Result	:	non-sensitizing

Test Type	:	Human experience
Species	:	Humans
Assessment	:	Not classified
Method	:	Human Repeat Insult Patch Test
Result	:	non-sensitizing

#### **Biphenyl; diphenyl:**

Test Type	:	OECD 406: Guinea pig sensitization
Species	:	Guinea pig

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Assessment : Not classified  
Result : Does not cause skin sensitization.

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Diphenyl oxide, Diphenyl ether:

Genotoxicity in vitro : Test Type: Salmonella typhimurium assay (Ames test)  
Metabolic activation: +/- activation  
Method: Bacterial Reverse Mutation Assay  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Method: In vitro Mammalian Cell Gene Mutation Test  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Method: In vitro Mammalian Chromosome Aberration Test  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Method: Genetic Toxicology: DNA Damage and Repair, Un-scheduled DNA Synthesis in Mammalian Cells In Vitro  
Result: negative

#### Biphenyl; diphenyl:

Genotoxicity in vitro : Test Type: Salmonella typhimurium assay (Ames test)  
Metabolic activation: +/- activation  
Method: Bacterial Reverse Mutation Assay  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: + activation  
Method: In vitro Mammalian Cell Gene Mutation Test  
Result: positive

Test Type: Chromosome aberration test in vitro  
Metabolic activation: +/- activation  
Method: In vitro Mammalian Chromosome Aberration Test  
Result: negative

Test Type: Mutagenicity - Mammalian  
Method: Genetic Toxicology: DNA Damage and Repair, Un-scheduled DNA Synthesis in Mammalian Cells In Vitro  
Result: negative

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Genotoxicity in vivo	: Species: Mouse (male and female) Method: Mammalian Erythrocyte Micronucleus Test Result: negative
	Species: Rat (male) Method: Mammalian Bone Marrow Chromosome Aberration Test Result: negative

### Carcinogenicity

Not classified based on available information.

### Components:

#### **Biphenyl; diphenyl:**

Species	: Rat, male and female
Application Route	: Ingestion
Method	: OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies
Remarks	: Expert judgement Not classified

### Reproductive toxicity

Not classified based on available information.

### Product:

Effects on fertility	: Remarks: No data available
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### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Reproductive toxicity - Assessment	: Based on available data the classification criteria are not met. Not classified as hazardous.
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#### **Biphenyl; diphenyl:**

Effects on foetal development	: Species: Rabbit, female Application Route: Oral General Toxicity Maternal: NOAEL: 3,000 ppm Embryo-foetal toxicity: NOAEL: 8,000 ppm Method: OECD Test Guideline 414
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Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 500 mg/kg body weight Embryo-foetal toxicity: NOAEL: 1,000 mg/kg body weight Method: OECD Test Guideline 414
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Reproductive toxicity - Assessment	: Based on available data the classification criteria are not met. Not classified as hazardous.
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### STOT - single exposure

May cause respiratory irritation.

#### Components:

##### **Diphenyl oxide, Diphenyl ether:**

Exposure routes : Inhalation  
Assessment : Based on available data, the classification criteria are not met.

##### **Biphenyl; diphenyl:**

Exposure routes : Inhalation  
Target Organs : Respiratory system  
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

### STOT - repeated exposure

Not classified based on available information.

#### Components:

##### **Diphenyl oxide, Diphenyl ether:**

Assessment : Based on available data, the classification criteria are not met.

##### **Biphenyl; diphenyl:**

Target Organs : Kidney, Liver, Urinary bladder  
Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Repeated dose toxicity

#### Product:

Species : Rat, male and female  
: 0.051 mg/l  
Application Route : Inhalation study:  
Exposure time : 90 days

Species : Rat  
LOAEL : 500 mg/l  
Application Route : by gavage

#### Components:

##### **Diphenyl oxide, Diphenyl ether:**

Species : Rat, male and female  
NOAEL : 301 mg/kg  
Application Route : Oral Study  
Exposure time : 90 days  
Remarks : (highest dose tested)

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Species : Rat, male and female  
NOAEL : 1000 mg/kg  
Application Route : Dermal Study  
Exposure time : 90 days  
Remarks : (highest dose tested)

Species : Rat, male and female  
NOAEL : 139 mg/m<sup>3</sup>  
Application Route : inhalation (vapour)  
Exposure time : 28 days  
Remarks : (highest dose tested)

### **Biphenyl; diphenyl:**

Species : Rat, male and female  
NOAEL : 39 mg/kg  
Application Route : in feed  
Exposure time : 2 year  
Method : OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies  
Target Organs : Blood, Kidney, Liver

Species : Rabbit  
NOAEL : > 2,000 mg/kg  
Application Route : Dermal  
Exposure time : 28 days  
Remarks : No significant adverse effects were reported

### **Aspiration toxicity**

Not classified based on available information.

### **Product:**

Not classified

### **Experience with human exposure**

#### **Product:**

Inhalation : Remarks: Harmful if inhaled.  
May cause respiratory irritation.

Skin contact : Remarks: Causes skin irritation.

Eye contact : Remarks: None known.

Ingestion : Remarks: None known.

### **Further information**

#### **Product:**

Remarks : None known.

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### SECTION 12: Ecological information

#### 12.1 Toxicity

##### Components:

###### **Diphenyl oxide, Diphenyl ether:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1.7 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): 0.455 mg/l  
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

###### **Biphenyl; diphenyl:**

Toxicity to fish : EC50 (Pimephales promelas (fathead minnow)): 3 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.36 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa (algae)): 1.3 mg/l  
Exposure time: 72 h  
NOEC (Chlorella pyrenoidosa (algae)): 0.66 mg/l  
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.229 mg/l  
Exposure time: 96 d  
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.17 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

#### 12.2 Persistence and degradability

##### Product:

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Biodegradability : Remarks: No data available  
Biochemical Oxygen Demand (BOD) : Remarks: No data available  
Chemical Oxygen Demand (COD) : Remarks: No data available  
BOD/COD : Remarks: No data available

### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Biodegradability : Result: Readily biodegradable.  
Method: Ready Biodegradability: Modified MITI Test (I)  
Biochemical Oxygen Demand (BOD) : Remarks: No data available  
Chemical Oxygen Demand (COD) : Remarks: No data available

#### **Biphenyl; diphenyl:**

Biodegradability : Result: Readily biodegradable.  
Method: Ready Biodegradability: Modified MITI Test (I)

### **12.3 Bioaccumulative potential**

#### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 49 - 594  
Method: OECD Test Guideline 305  
Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 196

#### **Biphenyl; diphenyl:**

Bioaccumulation : Bioconcentration factor (BCF): 1,900

### **12.4 Mobility in soil**

#### Components:

#### **Diphenyl oxide, Diphenyl ether:**

Distribution among environmental compartments : Koc: 1960, log Koc: 3.3

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### **Biphenyl; diphenyl:**

Distribution among environmental compartments : Medium: Soil  
Koc: 1546, log Koc: 3.19  
Method: OECD Test No. 106: Adsorption - Desorption Using a Batch Equilibrium Method

### 12.5 Results of PBT and vPvB assessment

#### **Product:**

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 Other adverse effects

#### **Product:**

Endocrine disrupting potential : 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.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

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## SECTION 14: Transport information

### 14.1 UN number

**ADR** : UN 3082  
**IMDG** : UN 3082  
**IATA** : UN 3082

### 14.2 UN proper shipping name

**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Diphenyl Ether, biphenyl)  
**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Diphenyl Ether, biphenyl, diphenyl)  
**IATA** : Environmentally hazardous substance, liquid, n.o.s.

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(Diphenyl Ether, biphenyl)

### 14.3 Transport hazard class(es)

<b>ADR</b>	:	9
<b>IMDG</b>	:	9
<b>IATA</b>	:	9

### 14.4 Packing group

<b>ADR</b>		
Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)
Remarks	:	Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

<b>IMDG</b>		
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

<b>IATA (Cargo)</b>		
Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

<b>IATA (Passenger)</b>		
Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

### 14.5 Environmental hazards

<b>ADR</b>		
Environmentally hazardous	:	yes
<b>IMDG</b>		
Marine pollutant	:	yes

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### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	: Conditions of restriction for the following entries should be considered: Number on list 3
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	: Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	: Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	: Not applicable
UK REACH List of substances subject to authorisation (Annex XIV)	: Not applicable
Control of Major Accident Hazards Regulations 2015 (COMAH)	E1 ENVIRONMENTAL HAZARDS
Volatile organic compounds	: Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) Not applicable

#### The components of this product are reported in the following inventories:

TCSI	: On the inventory, or in compliance with the inventory
AIIC	: On the inventory, or in compliance with the inventory
DSL	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory

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PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory

### 15.2 Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:  
Diphenyl Ether  
biphenyl

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## SECTION 16: Other information

### Full text of H-Statements

H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
STOT SE	: Specific target organ toxicity - single exposure
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
2017/164/EU / STEL	: Short term exposure limit
2017/164/EU / TWA	: Limit Value - eight hours
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

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; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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 - Interna-

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tional 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; KECL - 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; SVHC - Substance of very high concern; 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

Other information :

Sources of key data used to : [www.therminol.com/products/](http://www.therminol.com/products/)  
compile the Safety Data  
Sheet

### Classification of the mixture:

Acute Tox. 4	H332
Skin Irrit. 2	H315
STOT SE 3	H335
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

### Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Based on product data or assessment

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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