

SAFETY DATA SHEET

EASTMAN

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878

Therminol® VP1 Heat Transfer Fluid

PRD / SDSEU / EN / 0001

Version	Revision Date:	SDS Number:	Date of last issue: 03.04.2025
15.2	23.06.2025	150000093459	Date of first issue: 18.09.2013

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

Unique Formula Identifier (UFI) : 66FX-XWNF-AU0A-VK54

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
Kingsport TN 37660-5147

Telephone : +14232292000

E-mail address of person responsible for the SDS : Visit our website at www.EASTMAN.com or email emnmsds@eastman.com

1.4 Emergency telephone number

NCEC +44 (0)1235 239 670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Reproductive toxicity, Category 1B	H360Fd: May damage fertility. Suspected of damaging the unborn child.

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Specific target organ toxicity - single exposure, Category 3, Respiratory system

H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P201	Obtain special instructions before use.
P261	Avoid breathing mist or vapours.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.

Hazardous components which must be listed on the label:

Diphenyl oxide, Diphenyl ether
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.

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.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Diphenyl oxide, Diphenyl ether	101-84-8 202-981-2 01-2119472545-33-0001	Eye Irrit. 2; H319 Repr. 1B; H360Fd 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 01-2119480408-33-0004, 01-2119480408-33-0000	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system) 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.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : Remove person to fresh air and keep comfortable for breathing.
If breathing is difficult, give oxygen.
Consult a physician if necessary.

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- 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.
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.

Causes skin irritation.
Harmful if inhaled.
May cause respiratory irritation.
May damage fertility. Suspected of damaging the unborn child.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.
-

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

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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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Ventilate the area.
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.

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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.

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Diphenyl oxide, Diphenyl ether	Workers	Inhalation	Long-term systemic effects	1,8 mg/m ³
	Workers	Inhalation	Long-term local effects	7 mg/m ³
	Workers	Inhalation	Acute local effects	14 mg/m ³
Biphenyl; diphenyl	Workers	Dermal	Long-term systemic effects	0,7 mg/kg bw/day
	Workers	Skin contact	Long-term exposure, Systemic effects	63 mg/kg bw/day
	Workers	Inhalation	Long-term exposure, Systemic effects	11,17 mg/m ³
General Population	General Population	Oral	Long-term exposure, Systemic effects	1,9 mg/kg bw/day
	General Population	Skin contact	Long-term exposure, Systemic effects	38 mg/kg bw/day
	General Population	Inhalation	Long-term exposure, Systemic effects	3,3 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Diphenyl oxide, Diphenyl ether	Fresh water	0,0162 mg/l
	Marine water	0,00162 mg/l
	Aqua Intermittent	0,00455 mg/l
	Fresh water sediment	3,29 mg/kg dry weight (d.w.)
	Marine sediment	0,329 mg/kg dry weight (d.w.)

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	Soil	0,648 mg/kg dry weight (d.w.)
	Sewage treatment plant	10 mg/l
Biphenyl; diphenyl	Fresh water	0,017 mg/l
	Marine water	0,0017 mg/l
	Aqua Intermittent	0,17 mg/l
	Fresh water sediment	2,69 mg/kg
	Remarks:dry	
	Marine sediment	0,269 mg/kg
	Remarks:dry	
	Soil	0,528 mg/kg
	Remarks:dry	
	Sewage treatment plant	10 mg/l

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

Material : PVC
Break through time : 85 min
Glove thickness : 1,26 mm

Material : Neoprene
Break through time : 45 min
Glove thickness : 0,9 mm

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 located close to the working place.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	colourless
Odour	:	characteristic
Odour Threshold	:	not determined
Melting point/ range	:	12 °C
Boiling point/boiling range	:	257 °C (1.013 hPa)
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Flash point	:	110 °C Method: Pensky-Martens closed cup 124 °C Method: Cleveland open cup
Auto-ignition temperature	:	not determined
Decomposition temperature	:	not determined
pH	:	not determined
Viscosity	:	
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	2,48 mm ² /s (40 °C) 0,99 mm ² /s (100 °C)

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Solubility(ies) Water solubility	:	0,025 g/l
Partition coefficient: n- octanol/water	:	Not applicable
Vapour pressure	:	not determined
Relative density	:	1,06 (25 °C)
Density	:	1.060 kg/m3 (25 °C)
Relative vapour density	:	not determined

9.2 Other information

Explosives	:	Not classified
Oxidizing properties	:	Not classified
Self-ignition	:	621 °C Method: ASTM D2155
Evaporation rate	:	not determined

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.
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10.4 Conditions to avoid

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

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition products

Emits acrid smoke and fumes when heated to decomposition.
No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat): 2.050 mg/kg Assessment: May be harmful if swallowed.
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

Biphenyl; diphenyl:

Acute dermal toxicity	:	LD50 Dermal (Rabbit, male and female): > 3.980 mg/kg Method: Acute Dermal Toxicity Assessment: The substance or mixture has no acute dermal toxicity
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Skin corrosion/irritation

Causes skin irritation.

Product:

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

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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

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

Product:

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	Not classified
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 due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

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

Germ cell mutagenicity

Not classified due to lack of data.

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

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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

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 due to lack of data.

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

May damage fertility. Suspected of damaging the unborn child.

Product:

Effects on fertility : Remarks: No data available

Components:

Biphenyl; diphenyl:

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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

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

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 due to lack of data.

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

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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)

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/m³
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 due to lack of data.

Product:

Not classified

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to

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REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

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

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15.2	23.06.2025	150000093459	Date of first issue: 18.09.2013

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:

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:

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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

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 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

No data available

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 or ID number

ADN	:	UN 3082
ADR	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADN	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diphenyl Ether, biphenyl)
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. (Diphenyl Ether, biphenyl)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	:	9
ADR	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADN		
Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
ADR		
Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a

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net mass of 5 kg or less for solids.

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

14.5 Environmental hazards

ADN

Environmentally hazardous	:	yes
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ADR

Environmentally hazardous	:	yes
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IMDG

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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

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SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. E1 ENVIRONMENTAL HAZARDS

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

TCSI : On the inventory, or in compliance with the inventory

AIC : 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

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ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZloC	:	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

SECTION 16: Other information

Full text of H-Statements

H315	:	Causes skin irritation.
H319	:	Causes serious eye irritation.
H335	:	May cause respiratory irritation.
H360Fd	:	May damage fertility. Suspected of damaging the unborn child.
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
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation
STOT SE	:	Specific target organ toxicity - single exposure

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 - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China;

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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; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to : www.therminol.com/products/
compile the Safety Data Sheet

Classification of the mixture:

Aquatic Acute 1	H400
Aquatic Chronic 1	H410
Acute Tox. 4	H332
Skin Irrit. 2	H315
Repr. 1B	H360Fd
STOT SE 3	H335

Classification procedure:

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

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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