

Therminol® 72 Heat Transfer Fluid

Version 1.1 PRD Revision Date: 04/07/2018 SDS Number: 150000093443 Date of last issue: -
SDSUS / Z8 / 0001 Date of first issue: 09/06/2016

SECTION 1. IDENTIFICATION

Product name : Therminol® 72 Heat Transfer Fluid
Product code : 34136-00, P3413601, P3413603, P3413602, P3413600,
E3413601

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company
Address : 200 South Wilcox Drive
Kingsport TN 37660-5280
Telephone : (423) 229-2000
Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : Heat transfer fluids
Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Inhalation) : Category 4
Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system)
Aspiration hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal Word : Danger
Hazard Statements : H304 May be fatal if swallowed and enters airways.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
Precautionary Statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	15000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

P271 Use only outdoors or in a well-ventilated area.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P331 Do NOT induce vomiting.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
diphenyl oxide	101-84-8	45
Biphenyl; diphenyl	92-52-4	16
Phenanthrene	85-01-8	< 1
Terphenyl	26140-60-3	39

SECTION 4. FIRST AID MEASURES

- If inhaled : Remove person to fresh air and keep comfortable for breathing.
If breathing is difficult, give oxygen.
Get medical attention if symptoms occur.
- In case of skin contact : Wash off with soap and plenty of water.
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 : Call a physician or poison control center immediately.
Do NOT induce vomiting.
Rinse mouth.
Never give anything by mouth to an unconscious person.
- Most important symptoms : May be fatal if swallowed and enters airways.

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	15000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

and effects, both acute and delayed

Harmful if inhaled.
May cause respiratory irritation.

Notes to physician

: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
Do NOT induce vomiting.
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- 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.
- Hazardous combustion products : Hazardous decomposition products due to incomplete combustion
Carbon oxides
- 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.
- Special protective equipment for fire-fighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ventilate the area.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ 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.
- Environmental precautions : Clear up spills immediately and dispose of waste safely.
Avoid release to the environment.
- Methods and materials for containment and 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).

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not breathe vapors or spray mist.
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	15000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
 Keep in a cool place away from oxidizing agents.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
diphenyl oxide	101-84-8	TWA (Vapor)	1 ppm	ACGIH
		STEL (Vapor)	2 ppm	ACGIH
		TWA (Vapor)	1 ppm 7 mg/m ³	NIOSH REL
		TWA (Vapor)	1 ppm 7 mg/m ³	OSHA Z-1
Terphenyl	26140-60-3	C	1 ppm 9 mg/m ³	OSHA Z-1
		C	0.5 ppm 5 mg/m ³	OSHA P0
Biphenyl; diphenyl	92-52-4	TWA	0.2 ppm	ACGIH
		TWA	0.2 ppm 1 mg/m ³	NIOSH REL
		TWA	0.2 ppm 1 mg/m ³	OSHA Z-1
		TWA	0.2 ppm 1 mg/m ³	OSHA P0

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

Respiratory protection : Use a properly fitted, particulate filter respirator complying

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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.

Hand protection

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

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

Skin and body protection : Wear suitable protective clothing.

Protective measures : Ensure that eye flushing systems and safety showers are located close to the working place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: amber
Odor	: aromatic
Odor Threshold	: not determined
pH	: No data available
Melting point/freezing point	: -18 °C
Boiling point/boiling range	: 271 °C (1,013 hPa)
Flash point	: 132 °C Method: Cleveland open cup
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Self-ignition	: 585 °C
Upper explosion limit	: 7 %(V)
Lower explosion limit	: 1 %(V)
Vapor pressure	: < 0.01 hPa (20 °C)

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

	0.134 hPa (50 °C)
	623.5 kPa (380 °C)
Relative vapor density	: 10
Relative density	: 1.05 (25 °C)
Density	: 1,084 kg/m ³ (15 °C)
Solubility(ies)	
Water solubility	: practically insoluble
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: not determined
Decomposition temperature	: not determined
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 5.74 mm ² /s (40 °C)
Explosive properties	: Not classified
Oxidizing properties	: Not classified

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: None reasonably foreseeable.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None known.
Conditions to avoid	: Heating in air. Keep away from flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Emits acrid smoke and fumes when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if inhaled.

Product:

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg
Assessment: May be harmful if swallowed.

Acute inhalation toxicity : LC50 (Expert judgment): > 2.66 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: Harmful if inhaled.

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Not classified

Ingredients:**diphenyl oxide:**

Acute oral toxicity : LD50 Oral (Rat, female): 2,830 mg/kg

Acute inhalation toxicity : LC50: Remarks: No data available

Acute dermal toxicity : LD50 Dermal (Rabbit, Male and Female): > 7,940 mg/kg

Terphenyl:

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 3.8 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Biphenyl; diphenyl:

Acute oral toxicity : LD50 Oral (Rat, male): > 2,180 mg/kg
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 3.47 mg/l
Exposure time: 1 h
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Species: Rabbit
Assessment: Not classified
Result: No skin irritation

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
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PRD		SDSUS / Z8 / 0001	

Ingredients:**diphenyl oxide:**

Species: Rabbit
Exposure time: 4 h
Result: none

Terphenyl:

Species: Rabbit
Exposure time: 24 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
Result: No eye irritation
Assessment: Not classified

Ingredients:**diphenyl oxide:**

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

Result: slight to moderate

Terphenyl:

Species: Rabbit
Result: slight
Exposure time: 72 h
Assessment: Not classified

Biphenyl; diphenyl:

Species: Rabbit
Result: slight irritation

Species: Humans
Result: strong

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Assessment: Irritating to eyes.

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Remarks: No data available

Ingredients:**diphenyl oxide:**

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 based on available information.

Ingredients:**diphenyl oxide:**

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

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Method: In vitro Mammalian Chromosome Aberration Test
Result: negative

: Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Method: OECD Guideline 482
Result: negative

Terphenyl:

Genotoxicity in vitro

: Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Method: Bacterial Reverse Mutation Assay
Result: negative

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

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

: Test Type: Mutagenicity - Mammalian
Method: OECD Guideline 482
Result: negative

Genotoxicity in vivo

: Species: Rat
Method: Mammalian Bone Marrow Chromosome Aberration Test
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: OECD Guideline 482
Result: negative

Genotoxicity in vivo

: Species: Mouse (Male and Female)

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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.

Product:

Remarks: This information is not available.

Ingredients:**Biphenyl; diphenyl:**

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

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility : Remarks: No data available

Ingredients:**diphenyl oxide:**

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

Biphenyl; diphenyl:

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

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

STOT-single exposure

May cause respiratory irritation.

Product:

Routes of exposure: inhalation (dust/mist/fume)

Assessment: May cause respiratory irritation.

Ingredients:**diphenyl oxide:**

Routes of exposure: Inhalation

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

Biphenyl; diphenyl:

Routes of exposure: 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.

Product:

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

Ingredients:**diphenyl oxide:**

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**Ingredients:****diphenyl oxide:**

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)

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Species: Rat, male and female
NOAEL: 139 mg/m³
Application Route: inhalation (vapor)
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

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Information on likely routes of exposure**Product:**

Inhalation	:	Remarks: Harmful if inhaled. May cause respiratory irritation.
Skin contact	:	Remarks: None known.
Eye contact	:	Remarks: None known.
Ingestion	:	Remarks: May be fatal if swallowed and enters airways. May be harmful if swallowed.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:****Ecotoxicology Assessment**

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	15000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Ingredients:**diphenyl oxide:**

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 : EC50 (Pseudokirchneriella subcapitata (algae)): 2.5 mg/l
Exposure time: 72 h

Terphenyl:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 27 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.022 mg/l
Exposure time: 48 h

LC50 (Mysidopsis bahia (opossum shrimp)): 0.028 mg/l
Exposure time: 96 h

Toxicity to algae : NOEC: 0.025 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.037 mg/l
Exposure time: 30 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0048 mg/l
Exposure time: 21 d

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 : EC50 (Chlorella pyrenoidosa): 1.3 mg/l
Exposure time: 72 h

NOEC (Chlorella pyrenoidosa): 0.66 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

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

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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

M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability**Product:**

Biochemical Oxygen Demand (BOD) : Remarks: No data available

Chemical Oxygen Demand (COD) : Remarks: No data available

Ingredients:**diphenyl oxide:**

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

Terphenyl:

Biodegradability : Result: Not readily biodegradable.

Biphenyl; diphenyl:

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

Bioaccumulative potential**Ingredients:****diphenyl oxide:**

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 49 - 594
Method: OECD Test Guideline 305

Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 196

Terphenyl:

Bioaccumulation : Species: Carassius auratus (goldfish)

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Bioconcentration factor (BCF): 600

Partition coefficient: n-octanol/water : log Pow: 5.09

Biphenyl; diphenyl:

Bioaccumulation : Bioconcentration factor (BCF): 1,900

Mobility in soil**Ingredients:****diphenyl oxide:**

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

Terphenyl:

Distribution among environmental compartments : log Koc: 5
Method: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC)

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

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal. This material when discarded may be a hazardous waste as that term is defined by the Resource Conservation and Recovery Act (RCRA), 40 CFR 261.24, due to its toxicity characteristic. This material should be analyzed in accordance with Method 1311 for the compound D018 BENZENE. Consult 40 CFR 268.40 or appropriate local regulations for concentration based standards. This product meets the criteria for a synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260 -272 of the Federal hazardous waste program in states that have adopted these used oil

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards.

Eastman Chemical Company operates a used fluid return program for certain fluids under these used oil standards. Contact your Sales Representative for details.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (Diphenyl Ether, biphenyl)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 964
Packing instruction (passenger aircraft)	: 964

IMDG-Code

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diphenyl Ether, biphenyl)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (biphenyl)
Class	: 9
Packing group	: III
Labels	: Class 9 - Miscellaneous Dangerous Goods
ERG Code	: 171
Marine pollutant	: yes(diphenyl)
Remarks	: Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
biphenyl	92-52-4	100	625

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Biphenyl; diphenyl 92-52-4

California Prop. 65

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

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

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

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

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

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

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

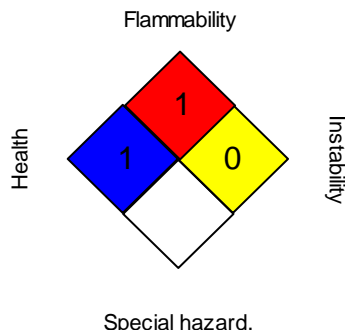
SECTION 16. OTHER INFORMATION

Therminol® 72 Heat Transfer Fluid

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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**NFPA:****HMIS® IV:**

HEALTH	/	3
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Sources of key data used to : www.therminol.com/products/

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1.1	04/07/2018	150000093443	Date of first issue: 09/06/2016
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compile the Material Safety
Data Sheet

www.therminol.com/products/

Revision Date : 04/07/2018

The information provided in this Material 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 re-lease 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.

US / Z8