

Therminol® XP Heat Transfer Fluid

Version Revision Date: SDS Number: Date of last issue: -
1.1 04/11/2018 150000093461 Date of first issue: 09/06/2016
PRD SDSUS / Z8 / 0001

SECTION 1. IDENTIFICATION

Product name : Therminol® XP Heat Transfer Fluid

Product code : 34154-00, P3415405, P3415400, P3415404, P3415403,
P3415402, E3415401

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
For emergency transportation information, in the United
States: call CHEMTREC at 800-424-9300 or call 423-229-
2000.

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**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : Not Assigned

Ingredients

Chemical name	CAS-No.	Concentration (% w/w)
white mineral oil	8042-47-5	100

SECTION 4. FIRST AID MEASURES

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-
- | | | |
|---|---|---|
| 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.
Get medical attention if symptoms occur.
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 and effects, both acute and delayed | : | The molten product can cause serious burns. |
| Notes to physician | : | Treat symptomatically. |

SECTION 5. FIRE-FIGHTING MEASURES

- | | | |
|--|---|---|
| Suitable extinguishing media | : | Water spray
Carbon dioxide (CO ₂)
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. |
|---|---|--|

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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.
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**

Contains no substances with occupational exposure limit values.

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 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.

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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	: oily, liquid
Color	: colorless
Odor	: odorless
Odor Threshold	: not determined
pH	: not determined
Melting point/range	: -29 °C
Boiling point/boiling range	: 358 °C
Flash point	: 199 °C Method: Cleveland open cup
Evaporation rate	: not determined
Self-ignition	: 346 °C Method: ASTM E659
Upper explosion limit	: not determined
Lower explosion limit	: not determined
Vapor pressure	: < 0.007 hPa (20 °C)
Relative vapor density	: not determined
Relative density	: 0.882 (15 °C)
Density	: 875 kg/m ³ (25 °C)

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Solubility(ies)	
Water solubility	: negligible
Partition coefficient: n-octanol/water	: Pow: > 1,000,000 log Pow: > 6
Autoignition temperature	: 346 °C Method: ASTM E659
Decomposition temperature	: not determined
Viscosity	
Viscosity, dynamic	: 27 - 30 mPa.s (38 °C) 24 - 27 mPa.s (40 °C)
Viscosity, kinematic	: 23.7 mm ² /s (40 °C) 4.06 mm ² /s (100 °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**

Not classified based on available information.

Product:

Acute oral toxicity	: Remarks: No data available
Acute inhalation toxicity	: Remarks: No data available
Acute dermal toxicity	: Remarks: No data available

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Ingredients:**white mineral oil:**

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks: No data available

Ingredients:**white mineral oil:**

Species: Rabbit
Exposure time: 24 h
Result: none

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks: No data available

Ingredients:**white mineral oil:**

Species: Rabbit
Result: none
Exposure time: 24 h

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

Germ cell mutagenicity

Not classified based on available information.

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Ingredients:**white mineral oil:**

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

Genotoxicity in vivo : Species: Rat
 Method: Mammalian Bone Marrow Chromosome Aberration
 Test
 Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Remarks: This information is not available.

Ingredients:**white mineral oil:**

Species: Rat
 Application Route: Ingestion
 Method: OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies
 Remarks: negative

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

STOT-single exposure

Not classified based on available information.

Product:

Remarks: No data available

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Ingredients:**white mineral oil:**

Assessment: Not classified

STOT-repeated exposure

Not classified based on available information.

Product:

Remarks: No data available

Ingredients:**white mineral oil:**

Assessment: Not classified

Repeated dose toxicity**Ingredients:****white mineral oil:**

Species: Rat
NOAEL: >= 1,200 mg/kg
Application Route: Oral Study
Exposure time: 90 days

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

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

Inhalation : Remarks: None known.
Skin contact : Remarks: None known.
Eye contact : Remarks: None known.
Ingestion : Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****white mineral oil:**

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Toxicity to fish : LL50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae : EL50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l
Exposure time: 72 h

Persistence and degradability**Product:**

Biodegradability : Result: Inherently biodegradable.

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

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

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: Potential bioaccumulation

Mobility in soil**Product:**

Distribution among environmental compartments : Remarks: No data available

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 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 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.

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Contact your Sales Representative for details.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Ingredients	CAS-No.	Component TPQ (lbs)
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SARA 311/312 Hazards : No SARA Hazards

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

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

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

AICS : 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

PICCS : 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

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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**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

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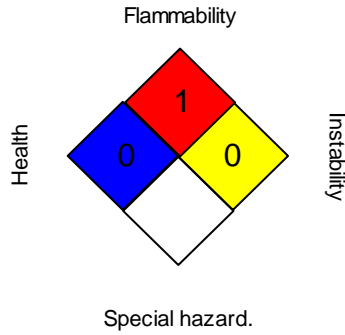
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Further information

NFPA:



HMIS® IV:

HEALTH	/	0
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 compile the Material Safety Data Sheet : www.therminol.com/products/

Revision Date : 04/11/2018

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 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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