Therminol® 55 Heat Transfer Fluid

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Therminol® 55 Heat Transfer Fluid

Product code : 34126-00, P3412600, P3412601, P3412603, P3412604, P3412602, P3412605, E3412601, P3412607

Manufacturer or supplier's details

Company : Eastman Chemical Company

Address : 200 South Wilcox Drive
Kingsport TN 37660-5147

Telephone : (423) 229-2000

Emergency telephone number : 000 800 100 7479, NCEC +65 3158 1198, International +65 6262-6462

Recommended use of the chemical and restrictions on use

Recommended use : Heat transfer fluids

Restrictions on use : None known.

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

GHS Classification

Skin corrosion/irritation : Category 3

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H304 May be fatal if swallowed and enters airways.
H316 Causes mild skin irritation.

Precautionary statements :

Response:

P301 + P316 IF SWALLOWED: Get emergency medical help

immediately.
P331 Do NOT induce vomiting.
P332 + P317 If skin irritation occurs: Get medical help.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
benzene, C14-30-alkyl derivatives	68855-24-3	>= 90 - <= 100

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.

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 and effects, both acute and : Aspiration hazard
Causes mild skin irritation.

delayed		The molten product can cause serious burns. May be fatal if swallowed and enters airways.
Notes to physician	:	IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting. Treat symptomatically.

5. FIREFIGHTING 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
Specific extinguishing methods	:	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 firefighters	:	Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	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.
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).

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components 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.
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	yellow
Odour	:	characteristic
Odour Threshold	:	not determined
pH	:	not determined
Melting point/range	:	-54 °C
Boiling point/boiling range	:	351 °C (1,013 hPa)
Flash point	:	166 °C Method: Pensky-Martens closed cup
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	343 °C Method: ASTM E659
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapour pressure	:	0.0228 kPa (93 °C)
Relative vapour density	:	not determined
Relative density	:	0.876 (15 °C)
Density	:	868 kg/m3 (25 °C)
Solubility(ies) Water solubility	: :	 0.001 g/l (25 °C)
Partition coefficient: n-octanol/water	:	log Pow: 6.6
Auto-ignition temperature	:	not determined
Decomposition temperature	:	not determined

Viscosity

Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	19 mm2/s (40 °C)
		3.5 mm2/s (100 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available

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.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50(Rat): > 15,800 mg/kg Remarks: Not classified
Acute inhalation toxicity	:	Remarks: Not classified
Acute dermal toxicity	:	LD50(Rabbit): > 7,940 mg/kg Remarks: Not classified

Components:

benzene, C14-30-alkyl derivatives:

Acute oral toxicity	:	LD50 Oral (Rat): > 15,800 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 7,940 mg/kg

Skin corrosion/irritation

Causes mild skin irritation.

Product:

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	slight

Components:

benzene, C14-30-alkyl derivatives:

Species	:	Rabbit
Exposure time	:	24 h
Result	:	Mild skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	slight

Components:

benzene, C14-30-alkyl derivatives:

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	Not classified
Result	:	slight irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitization.

Components:

benzene, C14-30-alkyl derivatives:

Test Type	:	Skin Sensitization
Species	:	Guinea pig
Result	:	non-sensitizing

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Remarks: No data available

Components:

benzene, C14-30-alkyl derivatives:

Genotoxicity in vitro : Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Method: Bacterial Reverse Mutation Assay
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: In vitro Mammalian Cell Gene Mutation Test
Result: negative
GLP: GLP

Carcinogenicity

Not classified based on available information.

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:

Exposure routes : Inhalation
Target Organs : Respiratory system
Assessment : Not classified

Components:

benzene, C14-30-alkyl derivatives:

Exposure routes : inhalation (dust/mist/fume)

Target Organs : Respiratory system
Assessment : Not classified

STOT - repeated exposure

Not classified based on available information.

Product:

Exposure routes : Inhalation
Target Organs : Respiratory system
Assessment : Not classified

Components:

benzene, C14-30-alkyl derivatives:

Exposure routes : Oral
Target Organs : Kidney, Liver
Assessment : Not classified

Exposure routes : inhalation (dust/mist/fume)
Target Organs : Blood
Assessment : Not classified

Repeated dose toxicity

Product:

Species : Rat, male and female
NOAEL : >= 65.9 mg/kg
Application Route : in feed

Species : Rat, male and female
: 36 mg/m³
Application Route : Inhalation
Test atmosphere : dust/mist

Species : Rat, male and female
: 1000 ppm
Application Route : in feed

Components:

benzene, C14-30-alkyl derivatives:

Species : Rat, male and female
NOAEL : >= 65.9 mg/kg
Application Route : in feed
Exposure time : 90 days
GLP : GLP
Target Organs : Kidney, Liver

Species : Rat, male and female
NOAEL : 500 mg/kg
Application Route : Oral Study
Exposure time : 39 d

Species	:	Rat, male and female
	:	>= 36 mg/m³
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	28 days
GLP	:	GLP
Target Organs	:	Blood

Species	:	Rat, male and female
NOAEL	:	10000 ppm
Application Route	:	in feed
Exposure time	:	28 days

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Components:

benzene, C14-30-alkyl derivatives:

May be fatal if swallowed and enters airways.

Experience with human exposure

Product:

Inhalation	:	Remarks: At elevated temperatures, vapor may be irritating.
Skin contact	:	Remarks: Causes mild skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.
Eye contact	:	Remarks: None known.
Ingestion	:	Remarks: May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 600 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l Exposure time: 72 h

Toxicity to fish (Chronic toxicity)	:	NOEC: Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0075 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Read-across from a similar material

Components:

benzene, C14-30-alkyl derivatives:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 600 mg/l Exposure time: 48 h Remarks: (saturated concentration; limited solubility)
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l Exposure time: 72 h

Persistence and degradability

Product:

Biodegradability	:	Remarks: Not readily biodegradable.
BOD/COD	:	Remarks: No data available

Components:

benzene, C14-30-alkyl derivatives:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 4 % Method: Ready Biodegradability: CO2 Evolution Test Result: Not readily biodegradable. Biodegradation: 1 % Method: Inherent Biodegradability: Modified SCAS Test

Bioaccumulative potential

Product:

Bioaccumulation	:	Bioconcentration factor (BCF): 3.16

Components:

benzene, C14-30-alkyl derivatives:

Bioaccumulation	:	Bioconcentration factor (BCF): 3.16 Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 6.6

Mobility in soil

No data available

Other adverse effects

No data available

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.

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 IMO instruments

Not applicable for product as supplied.

Special precautions for user

Not applicable

15. REGULATORY INFORMATION

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

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

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
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
NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	23.01.2023

Further information

Other information	:	Other means of identification 84961-70-6
Sources of key data used to compile the Safety Data Sheet	:	www.therminol.com/products/
Date format	:	dd.mm.yyyy

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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, Bioaccumu-

lative 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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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