MARLOTHERM® XC Heat Transfer Fluid

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : MARLOTHERM® XC Heat Transfer Fluid

Product code : 34553-00, P34553S2, P34553S1, E3455302, P34553S5, E3455301, P3455301

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
Coatings
Intermediate
Laboratory chemicals

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

GHS Classification

Flammable liquids : Category 3

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Aspiration hazard : Category 1

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P261 Avoid breathing mist or vapours.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P316 IF SWALLOWED: Get emergency medical help immediately.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water.
P304 + P340 + P319 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
P331 Do NOT induce vomiting.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
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

Substance / Mixture : Substance

CAS-No. : Not Assigned

Components

Chemical name	CAS-No.	Concentration (% w/w)
cumene	98-82-8	>= 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 : Move to fresh air.
Treat symptomatically.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.
If symptoms persist, call a physician.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed : Call a physician or poison control center immediately.
Do NOT induce vomiting.
If victim is fully conscious, give a cupful of water.
Never give anything by mouth to an unconscious person.
Hold person's head low, to prevent aspiration.

Most important symptoms and effects, both acute and delayed : May be fatal if swallowed and enters airways.
May cause respiratory irritation.

Notes to physician : Treat symptomatically.

5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing : Water spray jet

media

Specific hazards during fire-fighting : Water may be ineffective.
The product will float on water and can be reignited on surface water.

Specific extinguishing methods : Flammable liquid and vapour.
Use water spray to cool unopened containers.

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 : Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions : 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).
After cleaning, flush away traces with water.
Eliminate all ignition sources if safe to do so.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion : None known.

Advice on safe handling : Do not taste or swallow.
Wash thoroughly after handling.
Keep away from fire (No Smoking).
Keep away from fire, sparks and heated surfaces.
Do not use sparking tools.

Conditions for safe storage : Keep container closed when not in use.
Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
cumene	98-82-8	TWA	5 ppm	ACGIH

Engineering measures : Ensure adequate ventilation.

Personal protective equipment

Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Hand protection		
Remarks	:	Wear suitable gloves.
Eye protection	:	Safety glasses
Protective measures	:	Remove respiratory and skin/eye protection only after vapors have been cleared from the area. Ensure that eye flushing systems and safety showers are located close to the working place. Use personal protective equipment as required.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colourless
Odour	:	aromatic
Odour Threshold	:	0.4 - 6.4 ppm
pH	:	5.6 Concentration: 500 g/l
Melting point/freezing point	:	-96 °C
Boiling point/boiling range	:	152.7 °C
Flash point	:	38.8 °C Method: ASTM D 93
Evaporation rate	:	not determined
Upper explosion limit / Upper flammability limit	:	6.5 %(V)
Lower explosion limit / Lower flammability limit	:	0.9 %(V)

Vapour pressure	:	4.96 hPa (20 °C)
Relative vapour density	:	4.15 (20 °C)
Density	:	0.86 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	log Pow: 3.55
Auto-ignition temperature	:	420 °C
Viscosity		
Viscosity, dynamic	:	0.79 mPa.s (20 °C)
Viscosity, kinematic	:	0.74 mm2/s (38 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May form explosive peroxides.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents Acids
Hazardous decomposition products	:	Carbon dioxide (CO2) Carbon monoxide

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

Components:

cumene:

Acute oral toxicity	:	LD50 Oral (Rat): 2,910 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 10,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks	:	No data available

Components:

cumene:

Species	:	Rabbit
Exposure time	:	72 h
Result	:	slight

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks	:	No data available

Components:

cumene:

Species	:	Rabbit
Exposure time	:	72 h
Result	:	slight

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks	:	No data available

Components:

cumene:

Test Type	:	Skin Sensitization
Species	:	Guinea pig

Result : non-sensitizing

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Product:

Remarks : This information is not available.

Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility : Remarks: No data available

STOT - single exposure

May cause respiratory irritation.

Product:

Remarks : No data available

STOT - repeated exposure

Not classified based on available information.

Product:

Remarks : No data available

Repeated dose toxicity

Product:

Remarks : No data available

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

No aspiration toxicity classification

Components:

cumene:

May be fatal if swallowed and enters airways.

Experience with human exposure

Product:

Inhalation : Remarks: May cause respiratory irritation.

Skin contact	:	Remarks: None known.
Eye contact	:	Remarks: None known.
Ingestion	:	Remarks: May be fatal if swallowed and enters airways.

Further information

Product:

Remarks	:	None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

cumene:

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 4.8 mg/l Exposure time: 96 h LC50 (Fish): 4.918 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.14 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 2.01 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 1.49 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.38 mg/l Exposure time: 28 d Species: Danio rerio (zebra fish)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.35 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

Persistence and degradability

Components:

cumene:

Biodegradability	:	Concentration: 3 mg/l Result: Readily biodegradable Biodegradation: 70 % Exposure time: 20 d
Chemical Oxygen Demand	:	1,130 mg/g

(COD)

ThOD : 3,500 mg/g

Bioaccumulative potential

Components:

cumene:

Bioaccumulation : Bioconcentration factor (BCF): 94.69

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.

14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1918
Proper shipping name	:	Isopropylbenzene
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1918
Proper shipping name	:	ISOPROPYLBENZENE
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

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.

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	:	08.02.2023
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, time-weighted average

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, 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; 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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