

SAFETY DATA SHEET

1. Identification

Identification

Product name: PARATHERM™ LC

Additional identification

Chemical name: Not available.

Recommended use and restriction on use

Recommended use: Heat Transfer Fluid

Restrictions on use: None identified.

Details of the supplier of the safety data sheet

Supplier

Company Name: PARATHERM
A DIV. OF THE LUBRIZOL CORPORATION
Address: 2009 Renaissance Boulevard
King of Prussia, PA 19406
US
Telephone: 610-941-4900

Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1)703 527 3887, OR WITHIN USA 800 424 9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Toxic to reproduction Category 1B

Specific Target Organ Toxicity - Repeated Exposure Category 2

Unknown toxicity

Acute toxicity, inhalation, vapor 99.0 %

Acute toxicity, inhalation, dust or mist 28.1 %

Label Elements:

Hazard Symbol:



Signal Word: Danger

Hazard Statement: May damage fertility.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

- Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required.
- Response:** IF exposed or concerned: Get medical advice/attention.
- Storage:** Store locked up.
- Disposal:** Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards which do not result in GHS classification: None identified.

3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Mineral oil	8042-47-5	40 – 50%
p-Dodecylphenol	74499-35-7	1 – 5%
Ethylene glycol	107-21-1	1 – 5%

4. First-aid measures

- General information:** Get medical advice/attention if you feel unwell.
- Ingestion:** Treat symptomatically. Get medical attention.
- Inhalation:** Remove exposed person to fresh air if adverse effects are observed.
- Skin Contact:** Wash with soap and water. Get medical attention if symptoms occur. Launder contaminated clothing before reuse.
- Eye contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses.

Most important symptoms/effects, acute and delayed

Symptoms: See section 11.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: CO₂, Dry chemical or Foam. Water can be used to cool and protect exposed material.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical:

When heated, hazardous gases may be released including: sulfur dioxide. See section 10 for additional information. Material creates a special hazard because it floats on water. A solid stream of water will spread the burning material. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. See section 10 for additional information.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Recommend wearing self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate spill area.

Environmental Precautions:

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Environmental manager must be informed of all major spillages. Do not contaminate water sources or sewer. Avoid release to the environment. Avoid release to the environment. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up:

Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material.

7. Handling and storage

Precautions for safe handling:

Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures. Use grounding and bonding connection when transferring material. In case of spills, beware of slippery floors and surfaces. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe dust/fume/gas/mist/vapors/spray. Observe good industrial hygiene practices. Provide adequate ventilation. Use personal protective equipment as required. Launder contaminated clothing before reuse. Avoid environmental contamination.

Maximum Handling Temperature:

Not determined.

Conditions for safe storage, including any incompatibilities:

Store away from incompatible materials. See section 10 for incompatible materials.

Maximum Storage Temperature: Not determined.

8. Exposure controls/personal protection

**Control Parameters:
Occupational Exposure Limits**

Chemical name	Type	Exposure Limit Values	Source
Mineral oil	IDLH	2,500 mg/m ³	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2017)
Mineral oil - Inhalable fraction.	TWA	5 mg/m ³	US. ACGIH Threshold Limit Values, as amended (02 2012)
Mineral oil - Mist.	REL	5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
Mineral oil - Mist.	STEL	10 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
Ethylene glycol - Aerosol.	Ceiling	100 mg/m ³	US. ACGIH Threshold Limit Values, as amended (02 2012)
Ethylene glycol	STEL	50 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values, as amended (03 2015)
Ethylene glycol	TWA	10 mg/m ³	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values, as amended (03 2015)
Ethylene glycol	TWA	25 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values, as amended (03 2015)
Ethylene glycol	Ceiling	50 ppm 125 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)

Appropriate engineering controls: No data available.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required.

Eye/face protection: If contact is likely, safety glasses with side shields are recommended.

Skin Protection

Hand Protection: Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear.

Other:	Gloves, coveralls, apron, boots as necessary to minimize contact.
Respiratory Protection:	Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Use respirator with a combination organic vapor and dust/mist cartridge. Use respirator with an organic vapor cartridge if exposure limit is exceeded.
Hygiene measures:	Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	No data available.
Odor:	No data available.
Odor threshold:	No data available.
pH:	Not applicable
Freezing point:	No data available.
Boiling Point:	> 700 °F (371 °C)
Flash Point:	> 350.1 °F (176.7 °C) (ASTM D93 (Pensky-Martens (A and B Closed Cup)))
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Vapor pressure:	< 1 torr (21.1 °C 70.0 °F)
Vapor density:	No data available.
Relative density:	0.94 60.01 °F (15.56 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	66.3 mm ² /s (104 °F (40 °C))

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Will not occur.

Conditions to avoid:	Do not expose to excessive heat, ignition sources, or oxidizing materials.
Incompatible Materials:	Strong oxidizing agents. Oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity

Oral

Product: ATEmix > 10,000 mg/kg. Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness.

Dermal

Product: Not classified for acute toxicity based on available data. Prolonged or widespread contact with this material could result in the absorption of potentially harmful amounts.

Inhalation

Mineral oil
Dusts, mists and fumes: LC 50 (Rat, , 4 h): > 5.01 mg/l (Literature)
Not classified
Dusts, mists and fumes

Ethylene glycol
Dusts, mists and fumes: LC 50 (Rat, , 4 h): > 2.5 mg/l (Literature)
Not classified
Dusts, mists and fumes Vapour: LC 50 (Rat, , 4 h): Not classified
Vapour

Skin Corrosion/Irritation:

Product: Remarks: Not classified as a primary skin irritant. Prolonged or repeated exposure may cause a slight flaking, tenderness, and softening of skin. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

Serious Eye Damage/Eye Irritation:

Product: Remarks: Not classified as a primary eye irritant.

Respiratory sensitization:

No data available

Skin sensitization:

Mineral oil

Classification: Not a skin sensitizer. (Literature)

p-Dodecylphenol

Classification: Not a skin sensitizer. (Literature)

Ethylene glycol

Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.

Specific Target Organ Toxicity - Single Exposure:

Product:

Mineral oil

If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

p-Dodecylphenol

May cause irritation to the mucous membranes and upper respiratory tract.

Ethylene glycol

If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Aspiration Hazard:

Mineral oil

Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in severe injury to the lungs and death.

Other effects:

Product:

If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Chronic Effects

Carcinogenicity:

Product:

This product contains mineral oils which are severely refined and not considered carcinogenic. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogenic components identified

Germ Cell Mutagenicity:

p-Dodecylphenol This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Ethylene glycol In vitro and in vivo genetic toxicity studies were negative.

Reproductive toxicity:

p-Dodecylphenol May damage fertility.

Ethylene glycol Not Classified based on available data. In studies on rats, ethylene glycol has been shown not to interfere with reproduction. In studies on mice, ingestion of ethylene glycol in large amounts caused a small decrease in the number of litters per pair, live pups per litter, and in live pupweight. Based on animal studies, ingestion of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation (tested nose only in animals) or skin contact, the primary routes of occupational exposure, have minimal or essentially no effect on the fetus.

Specific Target Organ Toxicity - Repeated Exposure:

p-Dodecylphenol This product contains para-dodecylphenol. Rats given high, repeated daily doses of para-dodecylphenol by oral intubation experienced effects on a number of organs including adrenal, thyroid, liver, ovary, testes, bone marrow and blood cell formation.

Ethylene glycol Long term dietary intake of ethylene glycol caused liver and kidney effects and deposition of calcium salts in various tissues in animals. Excessive exposure may cause CNS effects, cardiopulmonary effects (metabolic acid-osis), and kidney failure. Oral: Target Organ(s): Kidney

12. Ecological information

Ecotoxicity

Fish

Mineral oil LC 50 (Not reported, 96 h): > 10,000 mg/l

p-Dodecylphenol LC 50 (Fathead Minnow, 4 d): 40 mg/l

Ethylene glycol LC 50 (Fathead Minnow, 4 d): 72,860 mg/l
NOEC (Fathead Minnow, 7 d): 15,380 mg/l

Aquatic Invertebrates

Mineral oil EC 50 (Water flea (Daphnia magna), 2 d): > 100 mg/l
EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l
NOEC (Water flea (Daphnia magna), 21 d): 10 mg/l

p-Dodecylphenol EC 50 (Water flea (Daphnia magna), 2 d): 0.037 mg/l
EC 50 (Shrimp (Mysidopsis Bahia), 4 d): > 0.58 mg/l
EC 50 (Water flea (Daphnia magna), 21 d): 0.0079 mg/l
NOEC (Water flea (Daphnia magna), 21 d): 0.0037 mg/l

Ethylene glycol EC 50 (Water Flea (Daphnia Magna), 2 d): > 100 mg/l

NOEC (Water Flea (Daphnia Magna), 7 d): 8,590 mg/l

Toxicity to Aquatic Plants

Mineral oil

LC 50 (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l
NOEC (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l

p-Dodecylphenol

EC 50 (Green algae (Scenedesmus quadricauda), 72 h): 0.36 mg/l

Ethylene glycol

EC 50 (Algae (Pseudokirchneriella subcapitata), 4 d): 6,500 - 13,000 mg/l

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

p-Dodecylphenol

EC 50 (Sludge, 0.1 d): > 1,000 mg/l

Persistence and Degradability

Biodegradation

Mineral oil

OECD TG 301 F, 31.13 %, 28 d, Not readily degradable.

p-Dodecylphenol

Miscellaneous, 10 %, 56 d, Not readily degradable.
OECD TG 301 B, 25 %, 28 d, Not readily degradable.

Ethylene glycol

OECD TG 301 A, 90 - 100 %, Readily biodegradable

Bioaccumulative potential

Bioconcentration Factor (BCF)

p-Dodecylphenol

Bioconcentration Factor (BCF): 794.33 (Measured)
Bioconcentration Factor (BCF): 794.33 (Measured)

Partition Coefficient n-octanol / water (log Kow)

p-Dodecylphenol

Log Kow: 7.14 (Measured)

Ethylene glycol

Log Kow: -1.36

Mobility:

No data available

Other adverse effects

Product:

This material contains one or more components that have an impurity (alkylated phenol) that is highly toxic to aquatic organisms (Aquatic Acute 1 and Aquatic Chronic 1). The component containing the impurity (calcium phenate) was tested in fish, invertebrates and algae and the results showed that it may cause long lasting harmful effects to aquatic life (Aquatic Chronic 4). Therefore the classification shown in Section 3 for the alkylphenol impurity should not be used to classify the product for aquatic toxicity. May cause long lasting harmful effects to aquatic life.

13. Disposal considerations

Disposal instructions: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated Packaging: Container packaging may exhibit hazards.

14. Transport information

DOT
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

Transport in bulk according to Annex II of MARPOL and the IBC Code
None known.

The DOT shipping information in this section is based on a bulk container. Please review the accompanying shipping papers for the correct shipping descriptions based the size of the package. Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. During transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information

US Federal Regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

<u>Chemical Identity</u>	<u>CAS number</u>	<u>Reportable quantity</u>
Ethylene glycol	107-21-1	5000 lbs

Superfund amendments and reauthorization act of 1986 (SARA)

SARA 311 Classifications
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>CAS number</u>	<u>Reporting threshold for other uses</u>	<u>Reporting threshold for manufacturing and processing</u>

Ethylene glycol	107-21-1	10000 lbs	25000 lbs
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US State Regulations

US. California Proposition 65



This product can expose you to chemicals including: Ethylene glycol (1.00%) which is [are] known to the State of California to cause birth defects or other reproductive harm.

Inventory Status

Australia (AIC)

All components are in compliance with chemical notification requirements in Australia.

Canada (DSL/NDSL)

All substances contained in this product are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List (DSL) or are exempt.

China (IECSC)

All components of this product are listed on the Inventory of Existing Chemical Substances in China.

European Union (REACH)

To obtain information on the REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Great Britain (UK REACH)

To obtain information on the UK REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Japan (ENCS)

All components are in compliance with the Chemical Substances Control Law of Japan.

Korea (ECL)

All components are in compliance in Korea.

New Zealand (NZIoC)

All components are in compliance with chemical notification requirements in New Zealand.

Philippines (PICCS)

All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

Switzerland (SWISS)

All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

Taiwan (TCSCA)

All components of this product are listed on the Taiwan inventory.

Turkey (KKDIK)

To obtain information on the KKDIK compliance status of this product, please e-mail REACH@SDSInquiries.com.

United States (TSCA)

All substances contained in this product are listed on the TSCA inventory or are exempt.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

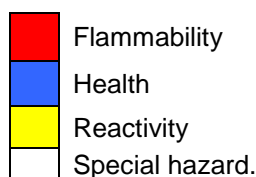
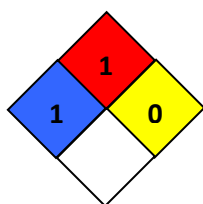
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	*	1
Flammability		1
Physical Hazards		0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 12/20/2021
Version #: 7.0
Source of information: Internal company data and other publically available resources.
Further Information: Contact supplier (see Section 1)

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