SAFETY DATA SHEET

1. Identification

Identification
Product name: PARATHERM™ LR

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
Physical Hazards
Flammable liquids Category 4

Health Hazards
Aspiration Hazard Category 1

Unknown toxicity
Acute toxicity, oral 20.0 %
Acute toxicity, dermal 20.0 %
Acute toxicity, inhalation, vapor 20.0 %
Acute toxicity, inhalation, dust or mist 100.0 %

Label Elements:

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Combustible liquid.
May be fatal if swallowed and enters airways.
Precautionary Statements:

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. In case of fire: Use CO2, dry chemical or foam to extinguish. Water can be used to cool and protect exposed material.

Storage: Store in a well-ventilated place. Keep cool. 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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Percent by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum naphtha</td>
<td>64742-48-9</td>
<td>70 – 80%</td>
</tr>
<tr>
<td>Alkanes, C9-C16</td>
<td>Confidential</td>
<td>20 – 30%</td>
</tr>
</tbody>
</table>

Trade secret information: A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Ingestion: Do NOT induce vomiting. Aspiration of material due to vomiting can cause chemical pneumonitis which can be fatal. If vomiting occurs naturally, the casualty should lean forward to reduce the risk of aspiration. Immediately call a POISON CENTER or doctor/physician.

Inhalation: Remove exposed person to fresh air if adverse effects are observed.

Skin Contact: Wash with soap and water. If skin irritation occurs, get medical attention.

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: Move containers from fire area if you can do so without risk.
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:
Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations. Vapors may travel considerable distance to a source of ignition and flash back. Water may cause splattering. Container may rupture on heating. 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:**
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

**Environmental Precautions:**
Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up:**
In case of leakage, eliminate all ignition sources. 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. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

7. Handling and storage

**Precautions for safe handling:**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment.

**Maximum Handling Temperature:**
Not determined.

**Conditions for safe storage, including any incompatibilities:**
Keep cool. Store in a well-ventilated place. Do not store near potential sources of ignition.

**Maximum Storage Temperature:**
Not determined.
8. Exposure controls/personal protection

Control Parameters:
Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkanes, C9-C16 - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m³</td>
<td>US. ACGIH Threshold Limit Values, as amended (02 2012)</td>
</tr>
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<td>Alkanes, C9-C16 - Non-aerosol. - as total hydrocarbon vapor</td>
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</tr>
<tr>
<td>Alkanes, C9-C16</td>
<td>REL</td>
<td>100 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required.

Eye/face protection: Safety glasses. If potential for splash or mist exists, wear chemical goggles or faceshield.

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.
   Other: Wear apron or protective clothing in case of 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.

Hygiene measures: Observe good industrial hygiene practices. When using do not smoke.

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: > 397 °F (203 °C)
   Flash Point: > 145 °F (63 °C) (Tagliabue 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: > 1
Relative density: 0.76 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: No data available.
Other information
   Minimum ignition temperature: > 500 °F (> 260 °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: Heat, sparks, flames.
Incompatible Materials: Strong 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
         Petroleum naphtha LD 50 (Rat): > 5,000 mg/kg (Measured) Not classified
Dermal

Petroleum naphtha

LD 50 (Rabbit): > 2,000 mg/kg (Measured) Not classified

Inhalation

Product:

High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor.

Skin Corrosion/Irritation:

Petroleum naphtha

Classification: Not irritating (Measured); Rabbit.

Alkanes, C9-C16

Serious Eye Damage/Eye Irritation:

Petroleum naphtha

Classification: Not irritating (Measured); Rabbit.

Alkanes, C9-C16

Respiratory sensitization:

No data available

Skin sensitization:

Petroleum naphtha

Classification: Not a skin sensitizer. (Measured)

Specific Target Organ Toxicity - Single Exposure:

Petroleum naphtha

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

Aspiration Hazard:

Product:

May be fatal if swallowed and enters airways.

Other effects:

Chronic Effects

Carcinogenicity:

No data available

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:
Petroleum naphtha: In vitro and in vivo genetic toxicity studies were negative.

Reproductive toxicity:
No data available

Specific Target Organ Toxicity - Repeated Exposure:
No data available

12. Ecological information

Ecotoxicity
Fish
Petroleum naphtha: LC 50 (Rainbow Trout, 4 d): > 1,000 mg/l

Aquatic Invertebrates
Petroleum naphtha: EC 50 (Water flea (Daphnia magna), 2 d): > 1,000 mg/l
NOEC (Water flea (Daphnia magna), 21 d): > 1 mg/l

Toxicity to Aquatic Plants
Petroleum naphtha: EC 50 (Algae (Pseudokirchneriella subcapitata), 3 d): > 1,000 mg/l
NOEC (Algae (Pseudokirchneriella subcapitata), 3 d): 1,000 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
No data available

Persistence and Degradability
Biodegradation
Petroleum naphtha: OECD TG 301 F, 89.8 %, 28 d, Readily biodegradable

Bioaccumulative potential
Bioconcentration Factor (BCF)
No data available

Partition Coefficient n-octanol / water (log Kow)
No data available

Mobility:
No data available

Other adverse effects
No data available
13. Disposal considerations

Disposal instructions: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Contaminated Packaging: Container packaging may exhibit hazards.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN number or ID number:</th>
<th>NA 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Proper Shipping Name:</td>
<td>Combustible liquid, n.o.s. (Petroleum naphtha, Alkanes, C9-C16)</td>
</tr>
<tr>
<td>Transport Hazard Class(es)</td>
<td>CBL</td>
</tr>
<tr>
<td>Class:</td>
<td>NONE</td>
</tr>
<tr>
<td>Label(s):</td>
<td>III</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Environmental Hazards</td>
<td>None established</td>
</tr>
</tbody>
</table>

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 on 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)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS number</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkanes, C9-C16</td>
<td>Confidential</td>
<td>100 lbs</td>
</tr>
</tbody>
</table>

Superfund amendments and reauthorization act of 1986 (SARA)

SARA 311 Classifications

Flammable (gases, aerosols, liquids, or solids)
Aspiration Hazard

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)
None present or none present in regulated quantities.

US State Regulations
US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

Inventory Status
Australia (AIIC)
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

<table>
<thead>
<tr>
<th>Health</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
</tr>
<tr>
<td>Physical Hazards</td>
<td>0</td>
</tr>
</tbody>
</table>

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

NFPA Hazard ID

Flammability

Health

Reactivity

Special hazard.

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

Issue Date: 12/20/2021
Version #: 4.0
Source of information: Internal company data and other publically available resources.
Further Information: Contact supplier (see Section 1)

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