SAFETY DATA SHEET

1. Identification

Identification
Product name: PARATHERM™ LR
Additional identification
Chemical name: Petroleum naphtha

Recommended use and restriction on use
Recommended use: Heat Transfer Fluid
Restrictions on use: Lubricating oils; Hydraulic fluid additive

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 0.0 %
Acute toxicity, dermal 0.0 %
Acute toxicity, inhalation, vapor 100.0 %
Acute toxicity, inhalation, dust or mist 20.0 %

Label Elements:

Hazard Symbol:

Signal Word: Danger

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

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 for extinction. Water can be used to cool and protect exposed material.

Storage: Store in well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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

3. Composition/information on ingredients

General information:

<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>80 - 90%</td>
</tr>
<tr>
<td>Alkanes, (C=9-12)-iso-</td>
<td>90622-57-4</td>
<td>20 - 30%</td>
</tr>
</tbody>
</table>

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. Rinse mouth. Immediately call a POISON CENTER/doctor/…

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

Skin Contact: Take off contaminated clothing and wash before re-use. Wash with soap and water. If skin irritation occurs, get medical attention.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance. Remove contact lenses, if present and easy to do. Continue rinsing.

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).

Methods and material for containment and cleaning up: Eliminate all ignition sources if safe to do so. 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.

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

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
None of the components have assigned exposure limits.

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:
A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

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

9. Physical and chemical properties

Appearance

Physical state: liquid
Form: liquid
Color: Colorless to white
Odor: Odorless
Odor threshold: No data available.

pH: No data available.
Freezing point: No data available.
Boiling Point: > 397 °F (203 °C)
Flash Point: > 145 °F (63 °C) (Tagliabue Closed Cup)
Evaporation rate: < 1 n-butyl acetate=1

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: Causes mild skin irritation.
- Eye contact: No data available.

Information on toxicological effects

Acute toxicity
- Oral Product: 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. Not classified for acute toxicity based on available data.

- Dermal Product: Not classified for acute toxicity based on available data.

- Inhalation Product: High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor. Not classified for acute toxicity based on available data.
**Skin Corrosion/Irritation:**
Product: Causes mild skin irritation.
Remarks: 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. Prolonged and repeated exposure causes defatting 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:**
Petroleum naphtha Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Alkanes, (C=9-12)-iso- Classification: Not a skin sensitizer. (Read across) Not a skin sensitizer.

**Specific Target Organ Toxicity - Single Exposure:**
Petroleum naphtha 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:**
Product: May be fatal if swallowed and enters airways.

**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):**
No carcinogenic components identified

**Germ Cell Mutagenicity:**
Alkanes, (C=9-12)-iso- This material has not exhibited mutagenic or genotoxic potential in laboratory tests.
Petroleum naphtha In vitro and in vivo genetic toxicity studies were negative.

**Reproductive toxicity:**
No data available

**Specific Target Organ Toxicity - Repeated Exposure:**
Alkanes, (C=9-12)-iso- Unknown: Target Organ(s): Skin
12. Ecological information

Ecotoxicity

Fish

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

Alkanes, (C=9-12)-iso-
LC 50 (Fathead Minnow, 4 d): 2,600 mg/l

Aquatic Invertebrates

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

Alkanes, (C=9-12)-iso-
EC 50 (Not reported, 4 d): 1,000 mg/l

Toxicity to Aquatic Plants

Petroleum naphtha
EC 50 (Green algae (Selenastrum capricornutum), 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, 31.3 %, 28 d, Not readily degradable.

Alkanes, (C=9-12)-iso-
OECD TG 301 F, 21.9 %, 28 d, Not readily degradable.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

No data available

Partition Coefficient n-octanol / water (log Kow)

Alkanes, (C=9-12)-iso-
Log Kow: 4.9 (calculated)

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. 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

UN Number: NA 1993
UN Proper Shipping Name: Combustible liquid, n.o.s.(Petroleum naphtha, Alkanes, (C=9-12)-iso-)
Transport Hazard Class(es)
Class: CBL
Label(s): NONE
Packing Group: III
Marine Pollutant: No
Special precautions for user: None established

IMDG
Not regulated.

IATA
Not regulated.

Transport in bulk according to Annex II of MARPOL73/78 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)
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 311 Classifications
Fire Hazard
Immediate (Acute) Health Hazards

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 regulated by CA Prop 65 present.

Inventory Status
Australia (AICS)
All components are in compliance with chemical notification requirements in Australia.

Canada (DSL/NDSL)
All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

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.

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.

United States (TSCA)
All components of this material are on the US TSCA Inventory.

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 | 1 |
| Health | 2 |
| Reactivity | 0 |
| Special hazard. | |

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

Issue Date: 04/18/2016
Version #: 2.1
Source of information: Internal company data and other publically available resources.
Further Information: Contact supplier (see Section 1)
Disclaimer: As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.