

Safety Data Sheet

SECTION 1 IDENTIFICATION

1.1. Product identifier :

Product Name: Heat Transfer Oil
Recommended Use: Heat transfer

1.2. identified uses

1.2.1 Restrictions on Use: Consult Petrovoll when used other than for Thermal Systems.

1.2.2 Other Means of Identification: Heat Transfer Oil

1.3. Product supplier ,

LUBECK LUBE
Essen, Germany

1.4. Details of the supplier of the safety data sheet

Phone: +49 201 319377007
Email: info@lubeck-lube.de

1.5 Transportation Emergency Response:

Carechem: +44 (0) 1235 239 671 (Arabic language 24/7) +44 (0) 1235 239 670 (English language 24/7)

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification:

Not classified as hazardous under GHS criteria.

2.2 Other Hazards:

- Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency
- Avoid inhalation of mist or vapour.
- Spilled product may create slip hazard.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS



3.1. Substances :

Not applicable

3.2. Mixtures

Component	CAS Number	Amount
Highly refined mineral oil (C15-C50)	Mixture (Proprietary)	90–100% wt/wt

Note: The concentration ranges of the ingredients are considered confidential business information under WHMIS 2015.

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1 Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation occurs.

4.1.2 Skin Contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops

4.1.3 Inhalation: Move exposed person to fresh air. Get medical attention if respiratory discomfort occurs.

4.1.4 Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur

4.1.5 Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed:

- Mild irritation possible with prolonged exposure.
- Inhalation of oil mist may cause respiratory irritation.

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed:

Treatment should in general be symptomatic and directed to relieving any effects. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or



limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

SECTION 5 FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

5.2 UNSUITABLE EXTINGUISHING MEDIA:

Do not use water jet.

5.3 PROTECTION OF FIRE FIGHTERS:

5.3.1 Fire Fighting Instructions:

This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

5.3.2 Combustion Products:

Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

5.3.3 Protection of Fire-fighters:

- Use self-contained breathing apparatus.
 - Toxic fumes (carbon oxides) may be produced in fire.
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SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Observe all relevant local and international regulations. Eliminate all sources of ignition in vicinity of spilled material. Keep out unnecessary and unprotected personnel. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions and wear appropriate personal protective equipment as indicated in Section 8.

6.1.1 Spill Management:

- Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as



possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations..

6.2 Reporting:

- See Section 1 for emergency contact information.
- See Section 5 for fire fighting measures.
- See Section 8 for information on appropriate personal protective equipment
- . See Section 12 for environmental precautions.
- See Section 13 for additional waste treatment information

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for Safe Handling:

- **7.1.1 General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water. Use in well-ventilated areas.
- **7.1.2 Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures
- **7.1.3 Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioned or disposed of properly.

7.2 Conditions for Safe Storage: Store and use only in equipment/containers designed for use with this product. Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10).

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 GENERAL CONSIDERATIONS: Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE



information below. Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

8.2 Engineering Controls:

8.2.1 PERSONAL PROTECTIVE EQUIPMENT:

8.2.1.1 Eye/Face Protection:

Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

8.2.1.2 Skin Protection:

Wear chemical personal protective equipment (PPE) to prevent skin contact. Selection of chemical protective clothing should be performed by an Occupational Hygienist or Safety Professional and be based upon applicable standards (ASTM F739 or EN 374). Using chemical PPE depends upon operations conducted and may include chemical gloves, boots, chemical apron, chemical suit, and complete facial protection. Refer to PPE manufacturers to obtain breakthrough time information to determine how long PPE can be used before it needs to be replaced. Unless specific glove manufacturer data indicates otherwise, the below table is based upon available industry data to assist in the glove selection process and is intended to be used as reference only

Chemical Glove Material	Thickness (mm)	Typical Breakthrough Time (minutes)
Butyl	0.7	120
Nitrile	0.8	240
Viton Butyl	0.3	240

8.2.1.3 Respiratory Protection: A site-specific risk assessment should be conducted by an Occupational Hygienist or a Safety Professional to determine the type and use of respiratory protective equipment. When a site-specific risk assessment determines that respiratory protection is required, use an approved respirator such as:

8.2.1.4 Air purifying respirator - If airborne concentration limits exceed the applicable occupational exposure limit, but are below the maximum use concentration.

Vapors only: organic vapor cartridge (filter type A3 per EN 529:2005).

Vapors and particulates (including generated mists): both an organic vapor cartridge & particulate filter (AP3 filter per EN 529:2005).



Refer to respirator manufacturers to obtain service life of cartridge / filter.

8.2.2 Positive pressure air-supplying respirator :

If airborne concentration limits exceed the maximum use concentration offered from an air purifying respirator.

Refer to EN 529:2005, USA OSHA 1910.134, and/or other applicable local/regional/national/international standards for regulatory requirements.

8.2.3 Occupational Exposure Limits:

Component	Agency	TWA	STEL
Mineral Oil Mist	ACGIH	5 mg/m ³	10 mg/m ³

8.2.4 Environmental exposure : controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

8.3 Personal Protective Equipment:

- **8.3.1 Eye Protection:** Safety glasses.
- **8.3.2 Skin Protection:** Nitride gloves recommended.
- **8.3.3 Respiratory Protection:** Use organic vapour/mist respirator if necessary.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Property	Value
Appearance	Clear liquid
Color	Amber
Odor	Mild petroleum
pH	Not applicable
Flashpoint	>200°C (Cleveland Open Cup)
Auto-ignition Temperature	Not available
Boiling Point/Range	Not applicable
Melting Point	Not applicable
Vapor Pressure	Not available
Density	0.840–0.880 kg/L @ 15°C
Viscosity	~32-68 cSt @ 40°C
Solubility in Water	Insoluble
Flammable Properties	Non-flammable
Explosive Limits	Not applicable



SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity:

May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc

10.2 Chemical Stability:

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of Hazardous Reactions:

Hazardous polymerization will not occur. May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.4 Conditions to Avoid:

- High heat and open flames.

10.5 Incompatible Materials:

Reactive or incompatible with the following materials: oxidising materials.

10.6 Hazardous Decomposition Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Likely Routes of Exposure:

Exposure may occur via ingestion, inhalation, or skin and eye contact.

11.2 Information on toxicological effects :

11.2.1 Serious Eye Damage/Irritation: The material is not considered an eye irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.2 Skin Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.3 Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.4 Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.



11.2.5 Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.6 Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components. For additional information on the acute toxicity of the components, call the technical information center.

11.2.7 Acute Toxicity Estimate: Not Determined

11.2.8 Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.9 Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components

11.2.10 Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.11 Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.2.12 Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

11.3 Aspiration Hazard: The material is not considered an aspiration hazard.

11.4 ADDITIONAL TOXICOLOGY INFORMATION: This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

11.5 Most important symptoms and effects, both acute and delayed IMMEDIATE HEALTH EFFECTS:

11.5.1 Eye: Not expected to cause prolonged or significant eye irritation.

11.5.2 Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

11.5.3 Ingestion: Not expected to be harmful if swallowed. Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

11.5.4 DELAYED OR CHRONIC HEALTH EFFECTS: Not expected to cause delayed or chronic effects from short-term or long-term exposure



SECTION 12 ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

12.2 Mobility:

- Not mobile in soil.

12.3 Persistence and Degradability:

This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

12.4 Potential to Bioaccumulation:

- May accumulate in aquatic organisms.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Method of Disposal the product :

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

13.2 Method of Disposal the packaging :

Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Recycle, if possible.

13.3 Special Precaution :

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode specific or quantity-specific shipping requirements.



14.1 TC Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER TRANSPORT CANADA

14.2 IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

14.3 ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

14.4 DOT Shipping Description: NOT REGULATED AS HAZARDOUS MATERIAL UNDER 49 CFR

14.5 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

- Not applicable.

SECTION 15 REGULATORY INFORMATION

15.1 Regulatory Lists:

- All components comply with REACH, TSCA, DSL, ENCS, IECSC, and KECI.
- 01-1=IARC Group 1
- 01-2A=IARC Group 2A
- 01-2B=IARC Group 2B

15.2 CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AIC (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), NZIoC (New Zealand), TSCA (United States). One or more components does not comply with the following chemical inventory requirements: PICCS (Philippines).

15.3 Labeling Requirements:

- No labeling required under GHS.

SECTION 16 OTHER INFORMATION

16.1 Abbreviations and acronyms :

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor



CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DPD = Dangerous Preparations Directive [1999/45/EC]

DSD = Dangerous Substances Directive [67/548/EEC]

EINECS = European Inventory of Existing Commercial chemical Substances

ES = Exposure Scenario

EUH statement = CLP-specific Hazard statement

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.

("Marpol" = marine pollution) OECD = Organisation for Economic Co-operation and Development

PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

RRN = REACH Registration Number

SADT = Self-Accelerating Decomposition Temperature

SVHC = Substances of Very High Concern

STOT-RE = Specific Target Organ Toxicity - Repeated Exposure

STOT-SE = Specific Target Organ Toxicity - Single Exposure

TWA = Time weighted average UN = United Nations

UVCB = Complex hydrocarbon substance





Material Safety Data Sheet

VOC = Volatile Organic Compound

vPvB = Very Persistent and Very Bioaccumulative

16.2 Prepared By: Petrovoll GmbH

16.3 Preparation Date: 28/04/2025

16.4 Disclaimer:

The information presented herein is believed to be accurate but is not warranted. It is the user's responsibility to ensure safe usage and compliance with applicable regulations.

