

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Material Name : Shell Heat Transfer Oil S2
Product Code : 001D8388
REACH Registration No. : 01-2119471299-27-0002, 01-2119471299-27-0003, 01-2119471299-27-0004, 01-2119471299-27-0005, 01-2119471299-27-0023

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use : Heat transfer oil. Please refer to Ch16 for the registered uses under REACH.

1.3 Details of the supplier of the substance or mixture

Manufacturer/Supplier : Shell UK Oil Products Limited
 Shell Centre
 London
 SE1 7NA
 United Kingdom

Telephone : (+44) 08708500939
Email Contact for MSDS : If you have any enquiries about the content of this MSDS please email lubricantSDS@shell.com

1.4 Emergency Telephone Number

: +44-(0) 151-350-4595

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Regulation (EC) No 1272/2008 (CLP)	
Hazard classes / Hazard categories	Hazard Statement
Not classified	

67/548/EEC or 1999/45/EC	
Hazard Characteristics	R-phrase(s)
Not classified as dangerous under EC criteria.	

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2.2 Label Elements

Labeling according to Regulation (EC) No 1272/2008

- Symbol(s)** : No symbol
- Signal Words** : No signal word
- CLP Hazard Statements** : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
- HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
- ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

CLP Precautionary statements

- Prevention** : No precautionary phrases.
- Response** : No precautionary phrases.
- Storage** : No precautionary phrases.
- Disposal** : No precautionary phrases.

Labeling according to Directive 1999/45/EC/67/548/EEC

- EC Symbols : Not classified as dangerous under EC criteria.
- EC Classification : Not classified as dangerous under EC criteria.

2.3 Other Hazards

- : Not classified as flammable but will burn.

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Material Name : Highly refined mineral oil.

CAS No. : 64742-65-0

3.2 Mixtures

Preparation Description : Product is not a mixture according to regulation 1907/2006/EC.

Additional Information : The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information : Not expected to be a health hazard when used under normal conditions.

Inhalation : Not applicable.

Skin Contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.

Eye Contact : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

Ingestion : If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Give nothing by mouth.

4.2 Most important symptoms/effects, acute & delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

4.3 Indication of immediate medical attention and special treatment needed : Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

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- 5.1 Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- 5.2 Special hazards arising from substance or mixture** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
- 5.3 Advice for fire-fighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedures** : Avoid contact with skin and eyes.
- 6.2 Environmental Precautions** : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- 6.3 Methods and Material for Containment and Clean Up** : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional Advice** : Local authorities should be advised if significant spillages cannot be contained.
- 6.4 Reference to other sections** : For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of

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- this material.
- 7.1 Precautions for Safe Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- 7.2 Conditions for safe storage, including any incompatibilities** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50°C / 32 - 122°F
Store separately from oxidising agents.
The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance may be obtained from the local environmental agency office.
- 7.3 Specific End Uses Additional Information** : Not applicable
: Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion. Exposure to this product should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication "COSHH Essentials".
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

8.1 Control Parameters

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA [Inhalable fraction.]		5 mg/m3	

Biological Exposure Index (BEI)

Data not available

PNEC related information : Substance is a hydrocarbon with a complex, unknown or

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variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.

8.2 Exposure Controls

General Information

- : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Occupational Exposure Controls

Personal Protective Equipment

- : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye Protection

- : Wear safety glasses or full face shield if splashes are likely to occur. Approved to EU Standard EN166.

Hand Protection

- : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Body protection

- : Skin protection not ordinarily required beyond standard issue work clothes.

Respiratory Protection

- : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for

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Thermal Hazards	: combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN14387. : Not applicable.
Monitoring Methods	: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Environmental Exposure Controls	
Environmental exposure control measures	: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance	: Amber. Liquid at room temperature.
Odour	: Slight hydrocarbon.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 280 °C / 536 °F estimated value(s)
Pour point	: Typical -12 °C / 10 °F
Flash point	: Typical 220 °C / 428 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Density	: Typical 868 kg/m ³ at 15 °C / 59 °F
Water solubility	: Negligible.
Solubility in other solvents	: Data not available
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Dynamic viscosity	: Data not available
Kinematic viscosity	: Typical 25 mm ² /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available
Decomposition Temperature	: Data not available
Flammability	: Data not available

9.2 Other Information

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Other Information : Not applicable.

10. STABILITY AND REACTIVITY

- 10.1 Reactivity** : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
- 10.2 Chemical Stability** : Stable.
- 10.3 Possibility of Hazardous Reactions** :
Reacts with strong oxidising agents.
- 10.4 Conditions to Avoid** : Extremes of temperature and direct sunlight.
- 10.5 Incompatible Materials** : Strong oxidising agents.
- 10.6 Hazardous Decomposition Products** : Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects

- Basis for Assessment** : Information given is based on data on the components and the toxicology of similar products.
- Likely Routes of Exposure** : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
- Acute Oral Toxicity** : Low toxicity: LD50 > 5000 mg/kg , Rat
- Acute Dermal Toxicity** : Low toxicity: LD50 > 5000 mg/kg , Rabbit
- Acute Inhalation Toxicity** : Low toxicity: LC50 >5 mg/l / 4 h, Rat
- Skin Corrosion/Irritation** : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
- Serious Eye Damage/Irritation** : Expected to be slightly irritating.
- Respiratory Irritation** : Inhalation of vapours or mists may cause irritation to the respiratory system.
- Respiratory or Skin Sensitisation** : Not expected to be a skin sensitiser.
- Aspiration Hazard** : Not considered an aspiration hazard.
- Germ Cell Mutagenicity** : Not considered a mutagenic hazard.
- Carcinogenicity** : Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the

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Reproductive and Developmental Toxicity	: International Agency for Research on Cancer (IARC).
Specific target organ toxicity - single exposure	: Not expected to be a hazard.
Specific target organ toxicity - repeated exposure	: Not expected to be a hazard.
Additional Information	: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

12. ECOLOGICAL INFORMATION

Basis for Assessment	: Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.
12.1 Toxicity	
Acute Toxicity	: Poorly soluble mixture. May cause physical fouling of aquatic organisms. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Fish	: Practically non toxic: LL/EL/IL50 > 100 mg/l
Aquatic Invertebrates	: Practically non toxic: LL/EL/IL50 > 100 mg/l
Algae	: Practically non toxic: LL/EL/IL50 > 100 mg/l
Microorganisms	: Practically non toxic: LC/EC/IC50 > 100 mg/l
Chronic Toxicity	
Fish	: NOEC/NOEL > 100 mg/l
Aquatic Invertebrates	: NOEC/NOEL > 1.0 - <=10 mg/l
12.2 Persistence and degradability	: Major constituents are expected to be readily biodegradable, but the product contains components that may persist in the environment.
12.3 Bioaccumulative Potential	: Contains components with the potential to bioaccumulate.
12.4 Mobility	: Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
12.5 Result of the PBT and vPvB assessment	: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not

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considered to be PBT or vPvB.

12.6 Other Adverse Effects : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Material Disposal : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

Container Disposal : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Local Legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
EU Waste Disposal Code (EWC): 13 03 07 mineral-based non-chlorinated insulating and heat transmission oils. Classification of waste is always the responsibility of the end user.

14. TRANSPORT INFORMATION

Land transport (ADR/RID):

ADR

This material is not classified as dangerous under ADR regulations.

RID

This material is not classified as dangerous under RID regulations.

Inland waterways transport (ADN):

This material is not classified as dangerous under ADNR regulations.

Sea transport (IMDG Code):

This material is not classified as dangerous under IMDG regulations.

Air transport (IATA):

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This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulatory Information

Authorisation and/or Restrictions in Use : Product is not subject to Authorisation under REACH.

Chemical Inventory Status

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

Other Information : Environmental Protection Act 1990 (as amended). Health and Safety at Work Act 1974. Consumers Protection Act 1987. Control of Pollution Act 1974. Environmental Act 1995. Factories Act 1961. Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) Regulations. Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. Control of Substances Hazardous to Health Regulations 1994 (as amended). Road Traffic (Carriage of Dangerous Substances in Packages) Regulations. Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations. Road Traffic (Carriage of Dangerous Substances in Road Tankers in Tank Containers) Regulations. Road Traffic (Training of Drivers of Vehicles Carrying Dangerous Goods) Regulations. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations. Health and Safety (First Aid) Regulations 1981. Personal Protective Equipment (EC Directive) Regulations 1992. Personal Protective Equipment at Work Regulations 1992.

15.2 Chemical Safety Assessment : A Chemical Safety Assessment was performed for this substance.

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16. OTHER INFORMATION

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : - Industrial
Manufacture of substance
Distribution of substance
Use as an intermediate
Formulation & (re)packing of substances and mixtures
Uses in Coatings
Use in Cleaning Agents
Use in Oil and Gas field drilling and production operations
Lubricants
Metal working fluids / rolling oils
Use as binders and release agents
Use as a fuel
Functional Fluids
Use in laboratories
Rubber production and processing
Water treatment chemicals
Mining chemicals
Polymer processing

Uses - Worker

Title : - Professional
Uses in Coatings
Use in Cleaning Agents
Lubricants
Metal working fluids / rolling oils
Use as binders and release agents
Use in Agrochemicals uses
Use as a fuel
Functional Fluids
Road and construction applications
Use in laboratories
Explosives manufacture & use
Water treatment chemicals
Polymer processing
Use in Oil and Gas field drilling and production operations

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Uses - Consumer

Title : - Consumer
Uses in Coatings
Use in Cleaning Agents
Lubricants
Use in Agrochemicals uses
Use as a fuel
Functional Fluids

Additional Information : For a list of REACH registered uses, please refer to:
http://www.shell.com/reach_uses
This product is not classified for human health or environmental hazards. An exposure scenario is not required.

Other Information

MSDS Distribution : The information in this document should be made available to all who may handle the product.

MSDS Version Number : 2.0

MSDS Effective Date : 01.11.2011

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : Regulation 1907/2006/EC

Disclaimer : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.