

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200  
According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

## Shell Refrigeration Oil S2 FR-A 68

Version 2.0      Revision Date: 03/02/2023      SDS Number: 800001005037      Print Date: 02/26/2026  
Date of last issue: 11/25/2015

### SECTION 1. IDENTIFICATION

Product name : Shell Refrigeration Oil S2 FR-A 68

Product code : 001D8392

#### Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**  
PO Box 4427  
Houston TX 77210-4427  
USA  
SDS Request : (+1) 877-276-7285  
Customer Service :

#### Emergency telephone number

Spill Information : 877-242-7400  
Health Information : 877-504-9351

#### Recommended use of the chemical and restrictions on use

Recommended use : Refrigerator oil.

### SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Reproductive toxicity** : **Category 2**

#### GHS label elements

Hazard pictograms :



Signal word : **Warning**

Hazard statements : **PHYSICAL HAZARDS:**  
Not classified as a physical hazard under GHS criteria.  
**HEALTH HAZARDS:**  
H361f Suspected of damaging fertility.  
**ENVIRONMENTAL HAZARDS:**  
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read

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and understood.

**P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

**P308 + P313** IF exposed or concerned: Get medical advice/ attention.

**Storage:**

**P405** Store locked up.

**Disposal:**

**P501** Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

**Contains alkaryl amine.**

**Other hazards which do not result in classification**

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.

High-pressure injection under the skin may cause serious damage including local necrosis.

Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture  
Chemical nature : Highly refined mineral oils and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.  
Classification based on DMSO extract content < 3% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note L).

**Hazardous components**

| Chemical name | Synonyms  | CAS-No.    | Concentration (% w/w) |
|---------------|---|------------|-----------------------|
| Alkaryl amine | Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene | 68411-46-1 | 0.1 - 0.9             |

### SECTION 4. FIRST-AID MEASURES

In case of 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.  
When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

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- In case of eye contact : Obtain medical attention even in the absence of apparent wounds.  
: Flush eye with copious quantities of water.  
: Remove contact lenses, if present and easy to do. Continue rinsing.
- If swallowed : If persistent irritation occurs, obtain medical attention.  
: In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and 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. Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Indication of any immediate medical attention and special treatment needed : Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

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### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable 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.
- Specific hazards during fire-fighting : Hazardous combustion products may include:  
A complex mixture of airborne solid and liquid particulates and gases (smoke).  
Carbon monoxide may be evolved if incomplete combustion occurs.  
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- 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.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning 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 : For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

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### SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. 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 this material.
- Advice on 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. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : Proper grounding and bonding procedures should be used during all bulk transfer operations to avoid static accumulation.
- Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.
- Packaging material : Suitable material: For containers, or container linings use mild steel. Unsuitable material: For containers or container linings avoid PVC, polyethylene or high density polyethylene.

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### SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Components with workplace control parameters

| Components        | CAS-No.      | Value type (Form of exposure)      | Control parameters / Permissible concentration | Basis    |
|-------------------|--------------|------------------------------------|--|----------|
| Oil mist, mineral | Not Assigned | TWA (Mist)                         | 5 mg/m <sup>3</sup>                            | OSHA Z-1 |
| Oil mist, mineral |              | TWA (Inhalable particulate matter) | 5 mg/m <sup>3</sup>                            | ACGIH    |

#### Biological occupational exposure limits

No biological limit allocated.

#### 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.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

#### Engineering measures

: 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.

#### General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

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Retain drain downs in sealed storage pending disposal or subsequent recycle.  
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

### Personal protective equipment

- 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 the combination of organic gases and vapours and particles [Type A/Type P boiling point >65°C (149°F)].
- Hand protection  
Remarks : 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, 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. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.
- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.

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Protective measures : It is good practice to wear chemical resistant gloves.  
Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Thermal hazards : Not applicable

### Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.  
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid at room temperature.  
Colour : colourless  
Odour : Data not available  
Odour Threshold : Data not available

pH : Not applicable

pour point : -39 °C / -38 °F  
Method: ISO 3016

Melting / freezing point : Data not available

Initial boiling point and boiling range : > 280 °C / 536 °F  
estimated value(s)  
Flash point : 232 °C / 450 °F  
Method: ISO 2592

Evaporation rate : Data not available

Flammability  
Flammability (solid, gas) : Not applicable  
Flammability (liquids) : Not classified as flammable but will burn.

Lower explosion limit and upper explosion limit / flammability limit  
Upper explosion limit / upper flammability limit : Typical 10 %(V)  
Lower explosion limit / Lower flammability limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)

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|  |   |
|--|---|
|  | estimated value(s)  |
| Relative vapour density                | : > 5   |
| Relative density                       | : 0.862 (15 °C / 59 °F)   |
| Density                                | : 862 kg/m <sup>3</sup> (15.0 °C / 59.0 °F)<br>Method: ISO 12185  |
| Solubility(ies)                        |   |
| Water solubility                       | : negligible  |
| Solubility in other solvents           | : Data not available  |
| Partition coefficient: n-octanol/water | : log Pow: > 6<br>(based on information on similar products)  |
| Auto-ignition temperature              | : > 320 °C / 608 °F   |
| Decomposition temperature              | : Data not available  |
| Viscosity                              |   |
| Viscosity, dynamic                     | : Data not available  |
| Viscosity, kinematic                   | : 68 mm <sup>2</sup> /s (40.0 °C / 104.0 °F)<br>Method: Unspecified<br>9 mm <sup>2</sup> /s (100 °C / 212 °F)<br>Method: ASTM D445<br>68 mm <sup>2</sup> /s (40.0 °C / 104.0 °F)<br>Method: ASTM D445 |
| Explosive properties                   | : Classification Code: Not classified   |
| Oxidizing properties                   | : Data not available  |
| Conductivity                           | : This material is not expected to be a static accumulator.   |
| Particle size                          | : Data not available  |

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### SECTION 10. STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Chemical stability                 | : Stable.  |
| Possibility of hazardous reactions | : Reacts with strong oxidising agents.   |
| Conditions to avoid                | : Extremes of temperature and direct sunlight.                                     |
| Incompatible materials             | : Strong oxidising agents.   |
| Hazardous decomposition products   | : Hazardous decomposition products are not expected to form during normal storage. |

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### SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

#### Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg  
Remarks: Low toxicity  
Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Low toxicity  
Based on available data, the classification criteria are not met.

#### Skin corrosion/irritation

##### Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

#### Serious eye damage/eye irritation

##### Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

#### Respiratory or skin sensitisation

##### Product:

Remarks: Not a skin sensitiser.  
Based on available data, the classification criteria are not met.

#### Germ cell mutagenicity

##### Product:

Genotoxicity in vivo : Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

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### Carcinogenicity

#### Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: 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 International Agency for Research on Cancer (IARC).

#### IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

#### Product:

Effects on fertility

:

Remarks: **Suspected of damaging fertility.**

### STOT - single exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### STOT - repeated exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### Aspiration toxicity

#### Product:

Not an aspiration hazard.

### Further information

#### Product:

Remarks: 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.

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Remarks: Slightly irritating to respiratory system.

### SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.  
Information given is based on a knowledge of the components and the ecotoxicology of similar products.  
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

#### Ecotoxicity

##### Product:

Toxicity to fish (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to algae (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) : Remarks: Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Based on available data, the classification criteria are not met.

Toxicity to microorganisms (Acute toxicity) : Remarks: Based on available data, the classification criteria are not met.

#### Persistence and degradability

##### Product:

Biodegradability : Remarks: Not readily biodegradable.  
Major constituents are inherently biodegradable, but contains components that may persist in the environment.

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### Bioaccumulative potential

**Product:**

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

### Mobility in soil

**Product:**

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

### Other adverse effects

**Product:**

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential. Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.  
Causes physical fouling of aquatic organisms.

Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : 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. Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

### Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### SECTION 14. TRANSPORT INFORMATION

#### National Regulations

##### US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

#### International Regulations

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

#### Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

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### SECTION 15. REGULATORY INFORMATION

#### EPCRA - Emergency Planning and Community Right-to-Know Act

\*: This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Reproductive toxicity

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

#### US State Regulations

##### Pennsylvania Right To Know

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Distillates (petroleum), hydrotreated light

64742-47-8

### California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### Other regulations:

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

### The components of this product are reported in the following inventories:

TSCA : All components listed.

DSL : All components listed.

## SECTION 16. OTHER INFORMATION

### Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
OSHA Z-1 / TWA : 8-hour time weighted average  
Abbreviations and Acronyms : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

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COC = Cleveland Open-Cup  
DIN = Deutsches Institut für Normung  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
DSL = Canada Domestic Substance List  
EC = European Commission  
EC50 = Effective Concentration fifty  
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals  
ECHA = European Chemicals Agency  
EINECS = The European Inventory of Existing Commercial Chemical Substances  
EL50 = Effective Loading fifty  
ENCS = Japanese Existing and New Chemical Substances Inventory  
EWC = European Waste Code  
GHS = Globally Harmonised System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer  
IATA = International Air Transport Association  
IC50 = Inhibitory Concentration fifty  
IL50 = Inhibitory Level fifty  
IMDG = International Maritime Dangerous Goods  
INV = Chinese Chemicals Inventory  
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables  
KECI = Korea Existing Chemicals Inventory  
LC50 = Lethal Concentration fifty  
LD50 = Lethal Dose fifty per cent.  
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading  
LL50 = Lethal Loading fifty  
MARPOL = International Convention for the Prevention of Pollution From Ships  
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level  
OE\_HP V = Occupational Exposure - High Production Volume  
PBT = Persistent, Bioaccumulative and Toxic  
PICCS = Philippine Inventory of Chemicals and Chemical Substances  
PNEC = Predicted No Effect Concentration  
REACH = Registration Evaluation And Authorisation Of Chemicals  
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail  
SKIN\_DES = Skin Designation  
STEL = Short term exposure limit  
TRA = Targeted Risk Assessment  
TSCA = US Toxic Substances Control Act  
TWA = Time-Weighted Average  
vPvB = very Persistent and very Bioaccumulative

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

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200  
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## Shell Refrigeration Oil S2 FR-A 68

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There has been an increase in the Health Hazard classification of this product in section 2. Ensure that the related sections (particularly sections 4, 8 & 11) are carefully studied.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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