

Danfoss
Safety Data Sheet

Product:
Product code:F-87902

160P

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Date:28 / 11 / 1997
Supersedes the SDS of the:27 / 08 / 1997

Product labelling (EC).

Not classified as dangerous under EC Directive, 88/379/EEC.

Transport label: Not regulated.

1 Identification of the substance/preparation and company.

Product name:
Product code:
Product type: Refrigeration compressor oil.
Supplier:
Name/type of company: Société des Pétroles SHELL

Address: 88, Boulevard Franklin Roosevelt
F92564 RUEIL MALMAISON Cedex

Contact numbers: Société des Pétroles SHELL
Commercial sales - CSM
Tour Albert 1er - 65, avenue de Colmar
92507 RUEIL-MALMAISON Cedex
Telephone : +33 1 55 94 14 00
Fax : +33 1 55 94 16 15

Emergency telephone number: - SHELL (In France - 24/24 h) : +33 4 42 74 51 15
- Centre Anti-Poisons de PARIS : +33 1 40 37 04 04
Hôpital Fernand WIDAL
200, rue du Faubourg St-Denis - 75475 PARIS Cedex 10
- Centre Anti-Poisons de LYON : +33 4 72 11 69 11
Hôpital Edouard HERRIOT
5, Place d'Arsonval - 69437 LYON Cedex 3
- Centre Anti-Poisons de MARSEILLE : +33 4 91 75 25 25
Hôpital SALVATOR
249, bd de Saint-Marguerite - 13274 MARSEILLE Cedex 9

2 Composition/information on ingredients.

Preparation:
Preparation description: Product manufactured with highly refined mineral base oil.
HAP content of mineral oil (IP 346 method) < 3,0 %.
Dangerous components/constituents: To our actual knowledge, none of the components are dangerous, in normal use.
Hazardous impurities: None known under normal use conditions.

3 Hazards Identification.

Principal hazards: (see § 11 et 12).

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Human Health Hazards:

Under normal use conditions, this product does not present any hazard of acute intoxication.

Aspiration into the lungs may cause chemical pneumonitis which can be fatal.

Prolonged or repeated exposure to skin may give rise to dermatitis.

Used oil may contain harmful impurities.

Environmental hazards:

Not readily biodegradable.

Expected to have a high potential to bioaccumulate.

The legislation forbides the disposal of oils and lubricants in the environment.

Safety hazards:

No specific flammation or explosion risk, under normal use conditions.

Not classified as flammable but will burn.

Contains mineral oil for which an exposure limit for oil mist applies.

Specific hazards:

None known under normal use conditions.

Symptoms and effects:

Prolonged or repeated exposure to skin may give rise to dermatitis.

Summary " in case of emergency":

If swallowed, do not induce vomiting. Obtain medical attention immediately.

If accidentally swallowed, the product may be absorbed into the lungs and induce a serious chemical pneumonia.

4 First Aid Measures.

IN CASE OF SERIOUS DIFFICULTIES OBTAIN MEDICAL ATTENTION IMMEDIATELY.

First aid - inhalation:

If exposure to high concentrations of vapours, fumes or aerosols, remove casualty to fresh air, keep him quiet and warm.

If breathing but unconscious, place in the recovery position.

If breathing has stopped, apply artificial respiration

First aid - skin:

After skin contact, wash affected parts of the body immediately and thoroughly with water and soap.

If a high-pressure oil jet comes into contact with skin, there is a risk of infiltration of body tissues. The patient must be taken to hospital, even if there is no visible injury.

First aid - eye:

Flush eye immediately and thoroughly with water by holding eyelids open during at least 15 minutes and obtain medical attention.

First aid - ingestion:

DO NOT INDUCE VOMITING.

If rapid recovery does not occur, obtain medical attention

Aspiration:

The aspiration of liquid into the lungs is extremely dangerous (acute pneumonitis).

If an aspiration into the lungs is suspected (during vomiting for example), take the patient to hospital immediately.

Advice to physicians:

Treat symptomatically

5 Fire Fighting Measures.

Flash point:

185°C according to NF T 60-118 Norm.

Extinguishing media:

Foam and dry chemical powder. Carbon dioxide, sand or earth may be used for small fires only.

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Unsuitable extinguishing media:

Water in a jet.

Specific hazards:

Use of Halon extinguishers should be avoided for environmental reasons.
Incomplete combustion and thermolysis liberate more or less toxic gases such as carbon monoxide (CO), carbon dioxide (CO₂), varied hydrocarbons, etc...and soots.
Their inhalation is very hazardous.

Protective equipment:

Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6 Accidental Release Measures.

Personal precautions:

Minimise contact with skin.

According to the exposure risks, wear gloves, glasses, hydrocarbons-tight clothing.

The spillages of product may make the areas slippery.

Personal protection:

According to the exposure risks, wear gloves, glasses, hydrocarbons-tight clothing.

Environmental precautions:

Put in place facilities and take any necessary measure to prevent water and soil from contamination.

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.

If spillage occurs, inform the local authorities when the situation cannot be overcome rapidly and efficiently.

Protect sensitive areas in the environment and also water resources.

Clean-up methods - small spillage:

Shovel up by physical means (pumping, skimming, etc ...).

Contain the spillages and recover them with sand or with any other absorbent inert material.

Do not empty into drains.

Preserve waste in closed and tight containers.

Clean-up methods - large spillage:

Dispose of as for small spills.

Disposal:

Deliver waste to a recognised collector. Dispose of in accordance with prevailing regulations.

Prevention of secondary risks:

Cleaning of the soiled surfaces without contaminating the natural environment.

7 Handling and Storage.

HANDLING.

Technical steps:

- Avoidance of workers' exposure:

Ventilate sufficiently if risk of formation of vapours, mists, aerosols.

Adopt any measure which reduces the exposure risks, particularly to oils which are in use or used.

Keep away from combustible materials ; preserve the product from food and drink.

- Avoidance of fires and explosions:

Empty packing may contain flammable or explosible vapours.

Rags permeated with product, paper or materials which are used to absorb spills, all present a fire hazard. Avoid their accumulating. Eliminate them safely immediately after use.

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Precautions:

In order to reduce the fire risk, put in place facilities to avoid :
- accidental splashes of product (rupturing of gasket, for example) on hot casings or on electric connections.
- accidental oil leakages of a circuit under pressure showing flammable slender atomized jets (the flammability lower limit of oil mist is reached for concentrations of 45g/m³).

The prolonged and repeated contacts with skin may cause skin diseases which are favoured by small injuries or rubbing with soiled clothing.

Avoid the splashes.

After skin contact wash immediately and thoroughly with water and soap.

Use neither abrasive product nor solvent nor motor-fuel.

Do not wipe one's hands with used cleaning rags.

Remove immediately any soiled or spattered clothing.

Do not breathe vapours, fumes, mists.

Do not eat or drink or smoke during use.

Avoid contact with strong oxidizing agents.

Use only containers, gaskets, lines... which are resistant to hydrocarbons and/or synthetic products.

Advice on use:

STORAGE:

Technical steps:

Storage conditions:

Storage:

Recommendations under mentioned.

Keep in a cool, dry, well-ventilated place.

Use properly labelled and closable containers.

Store the product at ambient temperature and prevent contact with water, moist atmosphere and with any source of ignition.

Keep the containers tightly closed, when not in use.

Put in place facilities and take any necessary measure to avoid water and soil contaminations.

- to avoid:

Avoid direct sunlight, heat sources, and strong oxidising agents.

The storage which is exposed to the weather.

Ambient.

Storage Temperatures:

Avoid contact with strong oxidizing agents.

Incompatible substances:

Recommended materials:

Keep in preference the packing of origin; if not, write down every instruction from the original label onto the new packing.

Use only containers, gaskets, lines which are resistant to hydrocarbons.

Unsuitable materials:

- PVC

Other information:

Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8 Exposure Controls/Personal Protection.

Engineering control measures:

Use local exhaust ventilation if there is a risk of inhalation of vapours, mists or aerosols.

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Occupational exposure standards: Oil mist, mineral :
- 8 hours TWA : 5 mg/m³ ACGIH.
- 15 minutes STEL : 10 mg/m³ ACGIH.

Respiratory protection: Not normally required.
If oil mist cannot be controlled, a respirator fitted with an organic vapour cartridge combined with a particulate pre-filter should be used.

Hand protection: Impermeable and hydrocarbon resistant gloves.

Eye protection: Wear safety glasses or full face shield if splashes are likely to occur.

Body protection: Minimise all forms of skin contact.
Wear overalls to minimise contamination of personal clothing. Launder overalls regularly.
Wear a face shield, hydrocarbon-resistant boots and clothing, safety shoes (drum handling) if necessary.

Hygiene measures: Avoid prolonged and repeated contact with skin, especially for oils which are in use or used.
After skin contact, wash immediately and thoroughly with water and soap.
Do not use abrasive, solvent or motor fuel.
If eye contact, flush immediately and thoroughly with water by holding eyelids open during at least 15 minutes and obtain medical attention.

9 Physical and Chemical Properties.

Physical state: Liquid

Colour: 0.5 max. (ASTM D 1500).

Odour: Characteristic oil.

pH: Data not available.

Pour point: -36 °C maximum.

Distillation characteristics:

Initial boiling point: > 250 °C (estimated value).

Flash point: 186°C according to NF T 60-118 Norm.

Flammability limit - upper: 10 % (V/V) (typical).

Flammability limit - lower: 1 % (V/V) (typical).

Auto-ignition temperature: > 250 °C (ASTM E-659). This value may be notably reduced in specific conditions (slow oxidation on strongly divided environments...).

Vapour pressure: < 1 Pa at 20 °C.

Density: 892 kg/m³ at 15 °C.

Kinematic viscosity: 29 to 31 mm²/s at 40 °C.

Solubility in water: Negligible

n-Octanol/water partition coefficient: Data not available.

10 Stability/Reactivity.

Stability: Stable product at the usual temperatures of storage, handling and use.

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Conditions to avoid:

Heat (temperature higher than flash point), sparks, ignition points, flames, static electricity...

Materials to avoid:

Strong oxidising agents.

Hazardous decomposition products:

Hazardous decomposition products are not expected to form during normal storage. Incomplete combustion and thermolysis liberate more or less toxic gases such as carbon monoxide (CO), carbon dioxide (CO₂), varied hydrocarbons, etc... and soots.

11 Toxicological Information.

Toxicological data have not been determined specifically for this product.

Information hereafter apply to :

- (H) : Human.
- (A) : Animal.
- (O) : Undetermined - Human and/or Animal.

Acute toxicity - inhalation (O):

Not considered to be an inhalation hazard under normal conditions of use.

Acute toxicity - dermal (A):

LD 50 expected to be above 2000 mg/kg.

Acute toxicity - oral (A):

LD 50 expected to be above 2000 mg/kg.

Respiratory Irritation (H):

The high concentrations of vapours or of aerosols might be irritating to the respiratory passages and the mucous membranes.

Skin Irritation (O):

Expected to be slightly irritant

Eye irritation (O):

Expected to be slightly irritant

Skin sensitization (O):

Not expected to be a skin sensitiser.

Subchronic / chronic toxicity -
inhalation (H):

Vapours and aerosols may be irritant to the respiratory tract and the mucous membranes.

Subchronic / chronic toxicity - skin
contact (H):

Characteristic skin lesions (oil acne) may develop following prolonged and repeated exposures to soiled clothing.

Carcinogenicity (A):

Not a carcinogen

Product is based on mineral oils of types shown to be non-carcinogenic in animal skin-painting studies.

Mutagenicity (A):

Data not available.

Other information:

Skin contact should be minimised.

This can lead to irritation and possibly dermatitis, especially under conditions of poor personal hygiene.

Prolonged and/or repeated contact with products containing mineral oils can result in defatting of the skin, particularly at elevated temperatures.

Used oils may contain harmful impurities that have accumulated during use. The

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concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.

12 Ecological Information.

Ecotoxicological data have not been determined specifically for this product.

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Mobility:

* Soil :

Liquid under most environmental conditions.

If it enters soil, it will adsorb to soil particles and will not be mobile.

* Water :

Floats on water.

Persistence/degradability:

Not readily biodegradable

Bioaccumulation:

Has the potential to bioaccumulate.

Ecotoxicity:

Product is expected to be practically non-toxic to aquatic organisms, LC/EC50 >100mg/l.

May cause physical fouling of aquatic organisms.

(LC/EC50 expressed as the nominal amount of product required to prepare aqueous test extract).

13 Disposal Considerations.

Waste disposal:

Recycle or dispose of in accordance with prevailing regulations to a recognised collector or contractor.

Waste product should not be allowed to contaminate soil or water, or be disposed of into the environment.

The only authorized method is the recovery by a recognised collector for regeneration, or burning in recognised facilities.

The competence of the contractor to deal satisfactorily with this type of product should be established beforehand.

Container disposal:

Drain container thoroughly

After draining, vent in a safe place away from sparks and fire

Keep container labelled.

Deliver to a recognised collector.

Local legislation:

Legislation of oils and lubricants spillages into surface, ground- and sea-water :

- Ordinances nr 73-216 of 23.02.1973 and nr 77-254 of 08.03.1977, memorandum of 14.01.1977 and 04.11.1980.

Legislation relating to waste :

- Law nr 75-633 of 15.07.1975 and Ordinance nr 77-974 of 19.08.1977, Ordinance nr 79-981 of 21.11.1979 modified by the Ordinance nr 85-367 of 29.03.1985, and Ordinances nr 89-192 of 24.03.1989 and 89-648 of 31.08.1989, concerning the legislation of the recovery of used oils.

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- Law nr 88-1261 of 31.12.1988; Ordinance nr 90-267 of 23.03.1990, relating to import, export and to transit of waste which may be harmful.
- Law nr 92-646 of 13.07.1992, relating to the waste disposal and to the recovery of materials.

14 Transport Information.

International regulations: Not dangerous for conveyance under UN, ADR/RID, IMO/MDG and IATA/ICAO codes.

Other prevailing regulations:

Local regulations: Not concerned.

- Arrêtés ADR/RID: Not concerned.

15 Regulatory Information.

EC Symbols: None

French regulation:

* Social Security Code: Art. L 461-6, Art. D 461-1, appendix A Nr 601.
List of occupational diseases : Nr 36.

* Labour Code: Art. R 241-50, décret of 11.07.1977.

* Exposure limits:

- Oil mist, mineral :
- . 8 hours TWA : 5 mg/m³ ACGIH.
- . 15 minutes STEL : 10 mg/m³ ACGIH.

* Nomenclature of waste (see § 13): C 147.

16 Other information

Uses and restrictions: Refrigeration compressor oil.
This product must not be used in applications other than the above without first seeking the advice of the SHELL technical department.

Document emission date: 27/08/97.
Cancel and replace the document of 26/06/89.

Document edition date: 03/06/99.

* This safety data sheet completes the technical directions for use but do not replace them.

Information in this Safety Data Sheet is based on our current knowledge of the concerned product. It is bona fide given.

Users have to be aware of the possible risks of an unusual using of the product.

It does not dispense the user from knowing and applying the texts regimentering his activity. He will take the precautionary measures according to his using of the product on his own responsibility.

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The whole mentioned prevailing regulations, aiming at helping the user to do his obligations, does not constitute an exhaustive list.
The user must ensure if any other obligations must be filled."

UFIP model according to 91/155/EEC Directive, to Decree of 05/01/1993 and to NF T 01-102 Norm (except terms used in the first heading) which is technically equivalent to ISO/DIS 11014-1993 Norm.

End of document.

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