



1. Identification of the material and supplier

Product name	Heavy Fuel Oil
SDS no.	0000003070
Historic SDS no.	YSUZ5
Product use	Fuel for marine engines. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Supplier	BP Oil New Zealand Limited 20 Customhouse Quay Wellington 1 New Zealand Phone 04 495 5000
EMERGENCY TELEPHONE NUMBER	0800 805 111
New Zealand National Poisons Centre	0800 764 766
OTHER PRODUCT INFORMATION	Technical Helpline 09 623 9451
Product code	0000003070

2. Hazards identification

New Zealand Regulatory Information	Classified as hazardous under current New Zealand regulations.
Physical/chemical hazards	Flammable liquids - Flammability Class - 3.1D
Health hazards	May cause cancer. Repeated exposure may cause skin dryness or cracking.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Effects and symptoms	
Eyes	No significant health hazards identified.
Skin	Slightly irritating to the skin. Contains material which can cause cancer. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Inhalation	Vapour, mist or fume may irritate the nose, mouth and respiratory tract. This material can contain hydrogen sulphide (H ₂ S), a very toxic and extremely flammable gas. Contains material which can cause cancer.
Ingestion	No significant health hazards identified.

3. Composition/information on ingredients

This material may contain significant quantities of polycyclic aromatic hydrocarbons (PCAs), some of which have been shown by experimental studies to induce skin cancer. This material can contain hydrogen sulphide (H₂S), a very toxic and extremely flammable gas. May contain performance improvement additives.

Ingredient name	CAS no.	Concentration
Fuel oil, residual	68476-33-5	95 - 100

No component is present in sufficient concentrations to require a hazardous classification according to the applicable New Zealand regulations.

4. First-aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin contact	Wash with soap and water. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms appear.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately.

EXPOSURE TO HYDROGEN SULPHIDE:

Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be immediately removed to fresh air and medical assistance obtained without delay.

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.

5 . Fire-fighting measures

Extinguishing media

Suitable

Use foam or all-purpose dry chemical to extinguish. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Not suitable

Do not use water jet. Under no circumstances should water be allowed to contact hot product because of the danger of boil-over.

Hazardous decomposition products

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
sulfur oxides
Hydrogen Sulphide (H₂S)

Unusual fire/explosion hazards

Avoid spraying directly into storage containers because of the danger of boil-over. Boil-over is the rapid increase in volume caused by the presence of water in hot product and the subsequent overflow from a tank.

Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Special fire-fighting procedures

None identified.

Protection of fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Hazchem code

3[Z]

6 . Accidental release measures

Personal precautions

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.

Large spill

Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill

Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling

Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapours, spray or mists. Avoid contact of spilt material and runoff with soil and surface waterways. Wash thoroughly after handling.

Regular periodic self inspection of the skin is recommended, especially those areas subject to contamination. In the event of any localised changes in appearance or texture of the skin being noticed, medical advice should be sought without delay.

Storage

Keep container tightly closed. Keep container in a cool, well-ventilated area.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks.

Sulphur compounds in this material may decompose when heated to release hydrogen sulphide gas which may accumulate to potentially lethal concentrations in enclosed air spaces. Vapor concentrations of hydrogen sulphide above 50 ppm, or prolonged exposure at lower concentrations, may saturate human odor perceptions so that the smell of gas may not be apparent. Exposure to concentrations of hydrogen sulphide vapor above 500 ppm may cause rapid death. Do not rely on the sense of smell to detect hydrogen sulphide. Vapors containing hydrogen sulfide may accumulate during storage or transport and may also be vented during filling of tanks. Hydrogen sulfide has a typical "bad egg" smell but at high concentrations the sense of smell is rapidly lost, therefore do not rely on sense of smell for detecting hydrogen sulfide. Use specially designed measuring instruments for determining its concentration.

8 . Exposure controls/personal protection

Ingredient name

Fuel oil, residual

Hydrogen Sulphide

Occupational exposure limits

ACGIH TLV (United States).

TWA: 0.2 mg/m³, (Benzene-soluble)

NZ OSH (NZ).

WES-STEL: 21 mg/m³ 15 minute(s). Issued/Revised: 1/1994

WES-STEL: 15 ppm 15 minute(s). Issued/Revised: 1/1994

WES-TWA: 14 mg/m³ 8 hour(s). Issued/Revised: 1/1994

WES-TWA: 10 ppm 8 hour(s). Issued/Revised: 1/1994

For information and guidance, the ACGIH values are included. For further information on these please consult your supplier.

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Exposure controls

Occupational exposure controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Personal protective equipment

Respiratory protection

Use only with adequate ventilation. Do not breathe vapour or mist. Approved air-supplied breathing apparatus must be worn where there is a risk of inhaling hydrogen sulphide gas. Personal gas monitors may also provide early warning of hydrogen sulphide.

Skin and body

Avoid contact with skin. Wear clothing and footwear that cannot be penetrated by chemicals or oil.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Hand protection

Wear gloves that cannot be penetrated by chemicals or oil.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eye protection

Safety glasses with side shields.

9 . Physical and chemical properties

Physical state	Oily liquid.
Colour	Black. Opaque
Odour	Diesel fuel, Kerosine
Flash point	>61 °C (Closed cup) Pensky-Martens.
Explosive properties	Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Explosion limits	Lower: 0.7% Upper: 5%
Volatility	34% (w/w)
Viscosity	Dynamic: 0.18 Pa·s (180 cP) at 50°C
Pour point	<24 °C
Relative density/Specific gravity	<1
Density	960 kg/m ³ (0.96 g/cm ³)
Solubility	Very slightly soluble in water
Remarks	May Contain Sulphur

10 . Stability and reactivity

Stability	The product is stable.
Conditions to avoid	Avoid extreme temperatures, strong oxidizers, fire.
Incompatibility with various substances/Hazardous Reactions	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides Hydrogen Sulphide (H ₂ S)

11 . Toxicological information

Chronic toxicity	
Other chronic toxicity data	As with all such products containing potentially harmful levels of PCAs, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. The inhalation of vapour, mists or fumes over long periods may therefore be hazardous.
Carcinogenic effects	SUSPECT CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER. Risk of cancer depends on duration and level of exposure. Classified 2B (Possible for humans.) by IARC: [Fuel oil, residual]
Mutagenic effects	No known significant effects or critical hazards.
Other information	This material may contain significant quantities of polycyclic aromatic hydrocarbons (PCAs), some of which have been shown by experimental studies to induce skin cancer. May be harmful if absorbed through the skin. Avoid skin contact. As with all such products containing potentially harmful levels of PCAs, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer. Regular periodic self inspection of the skin is recommended, especially those areas subject to contamination. In the event of any localised changes in appearance or texture of the skin being noticed, medical advice should be sought without delay. Hydrogen sulphide (H ₂ S) gas may accumulate in storage tanks of bulk transport compartments containing this material. Contact with eyes causes painful conjunctivitis, sensitivity to light, tearing and clouding of vision. Inhalation of low concentrations causes a runny nose with a loss of sense of smell, labored breathing and shortness of breath. Direct contact with skin causes pain and redness. Other symptoms of exposure include profuse salivation, nausea, vomiting, diarrhea, giddiness, headache, dizziness, confusion, rapid breathing, rapid heart rate, sweating, weakness, sudden collapse, unconsciousness and death due to respiratory paralysis. Cardiac neurological effects have also been reported. Prolonged breathing (greater than one hour) of concentrations of H ₂ S around 50 ppm can produce eye and respiratory tract irritation. Levels of 250 to 600 ppm will result in fluid in the lungs, and concentrations around 1,000 ppm will cause unconsciousness and death in a short period of time. Since the sense of smell rapidly becomes insensitive to this toxic, colourless gas, odour cannot be relied upon as an indicator of concentrations of the gas. Always exercise caution when working around closed containers.

12 . Ecological information

Biodegradability

Persistence/degradability The biodegradability of this material has not been determined.

Bioaccumulative potential This product is not expected to bioaccumulate through food chains in the environment.

Other ecological information Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.


13 . Disposal considerations

Disposal considerations / Waste information The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

If disposal is to be via incineration, this must use an approved process, e.g., combustion in a cement kiln.

14 . Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
IMDG Classification	UN 1202	GAS OIL	3	III		-
IATA/ICAO Classification	Not regulated.	-	-	-	----	-
NZ 45001 Classification	Not regulated	-	-	-	----	-

PG* : Packing group

15 . Regulatory information

New Zealand Hazard Classification

Classified as hazardous under current New Zealand regulations.

HSNO Approval Number HSR001480

Name of the Group Standard Fuel Oil

Information on Conditions of the Group Standard Flammable liquids - Flammability Class - 3.1D
Skin Irritant - Toxicity Class - 6.3B
Carcinogen - Toxicity Class - 6.7B
Ecotoxic in the Aquatic Environment - Ecotoxicity Class - 9.1C

Risk and Safety Phrases

Risk phrases

R45- May cause cancer.
R66- Repeated exposure may cause skin dryness or cracking.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

S53- Avoid exposure - obtain special instructions before use.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Other regulations

Europe inventory All components are listed or exempted.

United States inventory (TSCA 8b) All components are listed or exempted.

Australia inventory (AICS) All components are listed or exempted.

Canada inventory All components are listed or exempted.

China inventory (IECSC) All components are listed or exempted.

Japan inventory (ENCS) All components are listed or exempted.

Korea inventory (KECI) Not determined.

Philippines inventory (PICCS) Not determined.

Product name Heavy Fuel Oil

Product code 0000003070

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16 . Other information

Key to abbreviations

AMP = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists, an agency that promulgates exposure standards.
ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail
ADG Code = Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number = Chemical Abstracts Service Registry Number
HAZCHEM Code = Emergency action code of numbers and letters which gives information to emergency services. Its use is required by the ADG Code for Dangerous Goods in bulk.
ICAO = International Civil Aviation Organization.
IATA = International Air Transport Association, the organization promulgating rules governing shipment of goods by air.
IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.
IP 346 = A chemical screening assay for dermal toxicity. The European Commission has recommended that Method IP 346 be used as the basis for labelling certain lubricant oil base stocks for carcinogenicity. The EU Commission has stipulated that the classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. (See Note L, European Commission Directive 67/548/EEC as amended and adapted.) DMSO is a solvent.
NOHSC = National Occupational Health & Safety Commission, Australia
TWA = Time weighted average
STEL = Short term exposure limit
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

History

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Prepared by Product Stewardship

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.