

# MATERIAL SAFETY DATA SHEET

## RESIDUAL FUEL OILS

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### 1. IDENTIFICATION OF SUBSTANCE OR PREPARATION

PRODUCT LIGHT, MEDIUM & HEAVY FUEL OILS

APPLICATION For use as burner fuel and as fuel for marine and Industrial Engine.

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### 2. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL DESCRIPTION Residual Fuel Oils are a mixture of paraffinic, naphthenic and aromatic hydrocarbons. Polycyclic aromatic hydrocarbons (PCAs) will be present, some of which have been shown by experimental studies to induce skin cancer. Small quantities of Hydrogen Sulphide may be present.

### HAZARDOUS COMPONENTS

Name	CAS	EINECS	SYMBOL	RISK PHRASES
FUEL OIL, RESIDUAL	68476-33-5	270-675-6	T	R45/R52/R53/R66

### 3. HAZARDS IDENTIFICATION

Residual Fuel Oils are customarily supplied as 'heated oils' usually in the temperature range 60 - 75°C. Contact with hot product may cause burns. May cause cancer as may contain significant quantities of PCAs. Repeated exposure may lead to skin dryness or cracking. Hydrogen Sulphide gas is an extremely toxic and highly flammable gas.

### 4. FIRST AID MEASURES

EYES Immediately wash eye thoroughly with large amounts of fresh water. If any pain or redness develops or persists, obtain medical advice. If hot material enters the eye, flood immediately with cold water and take casualty to hospital without delay.

SKIN Remove heavily contaminated clothing as soon as possible and launder before reuse. Wash skin with soap and water. If irritation persists, seek medical attention. If hot material causes burns, flood the affected area immediately with cold water for 10 minutes, or longer if pain persists. Cover burns with clean cotton or gauze and take the casualty to hospital as soon as possible.

INGESTION If contamination of the mouth occurs, wash out thoroughly with water and give water to drink. If a large amount has been swallowed, get medical advice. DO NOT INDUCE VOMITING.

INHALATION If inhalation of vapour causes irritation or drowsiness, remove to fresh air and get medical advice.

OTHER Any injection of the material under the skin resulting from contact with the product at high pressure, constitute and **major medical emergency** – Get medical advice URGENTLY.

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## 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	Use dry powder or foam. For small fires use CO <sup>2</sup> .
FIRE AND EXPLOSION HAZARDS	If product contacts hot surface or leaks from high pressure fuel pipes, vapour/mist generated will create a flammability hazard. Products of combustion may contain toxic gases – see Section 10.
PROTECTIVE MEASURES	Fires in enclosed or confined spaces should only be tackled by trained personnel wearing suitable breathing apparatus.

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## 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

PERSONAL PRECAUTIONS	Treat any spillage as a fire hazard. Spray, mist or vapour can be a potential fire or explosion hazard. Vapour may collect in any confined space. In the event of a major spillage, only suitably trained personnel wearing self-contained breathing apparatus, chemical resistant overalls and gloves and safety goggles should be worn.
ENVIRONMENTAL PRECAUTIONS	Contain spillage – avoid entry into sewers and watercourses.
RECOVERY	Absorb using suitable absorbent material. Spilled material may make surfaces slippery.

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## 7. STORAGE AND HANDLING (IN NORMAL USE)

STORAGE	Storage tanks must be suitably designed, installed and maintained in accordance with current legislation and published Industry guidance and standards. Store and dispense the product only in well-ventilated areas away from heat and sources of ignition. Containers should be stored under cover, out of direct sunlight in well-ventilated conditions. Do not enter storage tanks without breathing apparatus unless the tank atmosphere has been shown to contain an oxygen concentration of at least 20% volume and hydrocarbon vapour concentrations of less than 1% of the lower flammability limit.
HANDLING	Residual Fuel Oils are primarily designed to be used in closed systems associated with boilers or engines. When handling avoid all unnecessary contact and observe good personal hygiene practices. Ensure good ventilation and avoid, as far as reasonably practicable, the inhalation of vapours, mists or fumes.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (NORMAL USE)

### OCCUPATIONAL EXPOSURE LIMITS

Name	8Hr TWA	15 Min	Type	Ref
HYDROGEN SULPHIDE	7 mg/m <sup>3</sup>	14mg/m <sup>3</sup>	OES	EH40/2002
	5 ppm	10 ppm		

ENGINEERING MEASURES Ensure adequate ventilation.

### PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY Unlikely to be required in normal use. In poorly ventilated areas use suitable supplied air breathing apparatus.

HAND Impervious gloves. e.g. nitrile.

EYE Goggles/face visor in circumstances where eye contact may occur.

OTHER If contact likely impervious clothing must be worn. Avoid all personal contact.

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## 9. PHYSICAL / CHEMICAL PROPERTIES

APPEARANCE	Dark brown/black viscous liquid.
ODOUR	Hydrocarbon
VISCOSITY	40 cs @ 100°C max
FLASH POINT	>66°C
DENSITY @ 15°C	Max 1005 kg/m <sup>3</sup>
SOLUBILITY	Negligible, < 0.1%
FLAMMABILITY LIMITS	LEL:0.6 VEL:6.5 (Approx) in air % by volume.

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## 10. STABILITY AND REACTIVITY

STABILITY	Stable at ambient temperatures.
CONDITIONS TO AVOID	Avoid exposure to excessive heat and flame.
MATERIALS TO AVOID	Avoid strong oxidising materials, halogens, strong acids, alkalis.
HAZARDOUS DECOMPOSITION PRODUCTS	Toxic hydrogen sulphide and other sulphur containing gases can be given off when heated. Product does not decompose at ambient temperature. Incomplete combustion may generate smoke and toxic fumes and gases including carbon monoxide.

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## 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS	
EYES	Unlikely to cause more than transient stinging or redness. Will cause burns if hot material contacts eyes.
SKIN	Prolonged or repeated skin contact may result in dermatitis or more serious irreversible skin disorders, including cancer in absence of good personal hygiene. Will cause burns if hot material contacts skin.
INGESTION	Unlikely to occur in normal use. Low order of acute/systemic toxicity.
INHALATION	Hydrogen sulphide gas may accumulate in storage tanks and compartments. Symptoms of exposure to hydrogen sulphide may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death.
CHRONIC EFFECTS	Ash from boilers in which decanted oil has been burned can contain high concentrations of antimony, nickel, vanadium and arsenic which if inhaled in sufficient quantities could be harmful and irritation to skin following extended contact. Soot and tar fractions of ash are likely to be carcinogenic.

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## 12. ECOLOGICAL INFORMATION

MOBILITY	Spillages may penetrate the soil causing groundwater contamination.
PERSISTENCE & DEGRADABILITY	This product is inherently biodegradable.
BIO-ACCUMULATION	This material may accumulate in sediments.
AQUATIC TOXICITY	This product is considered harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired. Likely to biodegrade slowly.

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## 13. DISPOSAL CONSIDERATIONS

Dispose of via a licensed waste carrier in accordance with local/national regulations. Incineration in an approved facility is recommended. Do not discharge into the public drainage system.

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## 14. TRANSPORT INFORMATION

	Not classified as hazardous for transport.
SUBSTANCE IDENTIFICATION NUMBER	Flashpoint >61°C Non-Hazardous
ADR CLASS	3, 31°(c)

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## 15. REGULATORY INFORMATION (Supply & Labelling)

SUPPLY CLASSIFICATION	Carcinogen Category 2. Dangerous for the environment.
LABELLING SYMBOLS	Toxic - Black skull and crossbones.
RISK PHRASES	R45 May cause cancer. R52/R53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R66 Repeated exposure may cause skin dryness or cracking.
SAFETY PHRASES	S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53 Avoid exposure - obtain special instructions before use. S61 Avoid release to the environment. Refer to special instructions/Safety Data Sheet.

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## 16. OTHER INFORMATION

This product is intended for use as a fuel for commercial and industrial applications, including marine engines.

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The information given in this data sheet is presented as guidance only for the purpose of determining health, safety and environmental measures. No warranty or representation express or implied is made as to the accuracy of completeness of the data and information contained in this data sheet. It is the users responsibility to evaluate this product and its intended use and to ensure compliance with applicable laws and regulations.

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