

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Intermediate Fuel Oil -
Other Name	Fuel Oil
Chemical Family	Hydrocarbon Liquid
Product Use	Marine Fuel Oil
Supplier	BHARAT CHEMICAL
Telephone	02836-237776

2. PRODUCT COMPONENTS

Residual fuel oil consists of variable mixtures of straight run and residual fractions and likely to contain trace amounts of hydrogen sulfide

3. POTENTIAL HEALTH EFFECTS

Skin contact with hot oil may cause severe thermal burns.

3.1 Inhalation: no significant signs or symptoms indicative of any adverse health effects are expected to occur upon short-term exposures.

3.2 Eye Contact: eye irritation may result from contact with liquid, mists, and/or vapors.

3.3 Skin Contact: skin irritation may occur upon prolonged or repeated skin contact.

3.4 Ingestion: nausea, vomiting, diarrhea, and restlessness.

3.5 Overexposure Effects: this product may contain aromatic oils. Although there is no specific evidence that this material is carcinogenic to humans, experiments have shown that similar materials containing polycyclic aromatic hydrocarbons have caused skin cancer on test animals.

4. FIRE AND EXPLOSION

4.1 Unusual Fire and Explosion Hazards:

Moderately combustible when heated above the flash point, this material will release flammable vapors which if exposed to a source of ignition can burn or be explosive in confined spaces. Mists or sprays may be flammable at temperatures below the normal flash point. Keep away from heat and open flame.

4.2 Extinguishing Media:

Use Dry chemical, Halon and Carbon Dioxide. Foam and water fog are effective, but may cause frothing.

4.3 Special Firefighting Procedures:

For fires involving this material, always use proper protective equipment, including self-contained breathing apparatus. Cool tanks and containers exposed to fire with water. Improper use of water and extinguishing media containing water may cause frothing which can spread the fire over a larger area.

5. PROTECTION

5.1 Respiratory: none is needed under normal conditions with adequate ventilation. If exposure exceeds the control limits, respiratory protective equipment must be worn.

5.2 Ventilation: use adequate ventilation to keep oil mists/vapors below the occupational exposure limits. Special ventilation may be required for handling conditions at elevated temperatures.

5.3 Eye: eye protection (chemical-type goggles and/or face shield) should be worn whenever there is a likelihood of splashing or spraying liquid. Contact lenses should not be worn. Eyewash water should be provided.

5.4 Skin: When skin contact is possible, and especially when handling hot material, protective clothing such as gloves, impervious apron, long-sleeves, boots, and face protection must be worn.

6. EMERGENCY AND FIRST AID

6.1 Inhalation: immediately remove from contaminated area to fresh air. For respiratory distress, give oxygen or administer cpr (cardiopulmonary resuscitation), if necessary. Obtain prompt medical attention.

6.2 Eye Contact: flush with clean low-pressure water for at least 15 minutes. If irritation persists, obtain medical attention.

6.3 Skin Contact: remove contaminated clothing. Wash affected area thoroughly with soap and water. if irritation persists, seek medical attention. Wash clothing thoroughly before reuse, but discard contaminated leather goods. Hot liquid may cause burns; flush with cool low-pressure water and get medical treatment.

6.4 Ingestion: do not induce vomiting, since aspiration into the lungs will cause chemical pneumonia. Obtain medical attention promptly.

7. ACCIDENTAL RELEASE MEASURES

Ventilate the area and avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Avoid contact with skin, eyes or clothing.

8. HANDLING AND STORAGE

8.1 Handling: It contains residual fuels which must be considered as a potential flammability risk. Light hydrocarbons may be released in the headspace vapors of bunker tanks. The headspace vapors may be flammable at temperatures below the flashpoint of the liquid.

8.2 Storage: Store away from heat and open flame. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.
Colour	Dark brown to black colored
Odour	Asphaltic Odour
Flash Point	> 66 °C (ASTM D-93 B)
Density at 15 ° C Kg/L	0.991 Max
Pour point ° C	(+) 18 – (+) 6
Viscosity, kinematic at 50 ° C	180 max

10. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.

Skin Protection:

Protective clothing such as coveralls or lab coats should be worn. Launder or dry-clean when soiled. Gloves and boots resistant to chemicals and petroleum distillates required.

Respiratory Protection:

When Hydrogen Sulfide (H₂S) concentrations are unknown or are equal to or greater than 10 ppm, (as in such activities as: loading, unloading, gauging, cleaning large spills or upon entry into tanks, vessels, or other confined spaces, and during rescue of individuals suspected to be overexposed to H₂S), use supplied-air (airline or self-contained breathing apparatus) respiratory protection (NIOSH/MSHA Approved). The respirators must be equipped with pressure-demand regulators and operated in the pressure-demand mode ONLY. If airline units are used, a 5-minute egress bottle MUST also be carried. GAS MASKS OR OTHER AIR-PURIFYING RESPIRATORS MUST NEVER BE USED FOR H₂S DUE TO POOR WARNING PROPERTIES OF THE GAS.

Ventilation:

Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Exposure Control for Total Product:

None established for product. Recommend coal tar pitch volatiles (benzene soluble fraction): Coal tar pitch volatiles: OSHA PEL-TWA 0.2 mg/m³. Hydrogen sulfide: OSHA PEL-TWA 10 ppm, STEL 15ppm. ACGIH TLV-TWA 10 ppm, STEL 15 ppm.

11. OCCUPATIONAL EXPOSURE LIMITS

Substance Value Time/Type Date Source

OIL MIST, MINERAL 5 MG/M³ 8 Hr PEL 1989 OSHA

(SEE SECTION 11) 10 MG/M³ 15 Min STEL 1983 ACGIH

HYDROGEN SULFIDE 10 PPM 8 Hr PEL 1989 OSHA

15 PPM 15 Min STEL 1989 OSHA

12. TRANSPORTATION DETAILS:

Not Dangerous for Conveyance under UN,IMO, ADR/RID & IATA/ICAO/ Codes

13. NFPA DETAILS:

HEALTH	2
FIRE	2
REACTIVITY	0
SPECIAL	NIL

14. STABILITY AND REACTIVITY

This material reacts violently with:

Strong Oxidizers

Products Evolved When Subjected to Heat or Combustion:

Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones. May evolve hydrogen sulfide, sulfur oxides and other sulfur containing compounds.

Hazardous Polymerizations: No

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. REGULATORY INFORMATION

EC Label name:	Fuel oil, residual
EC Classification:	Carcinogenic, category 2 Dangerous for the environment
EC Symbols:	T
EC Risk Phrases:	R45 May cause cancer R52/53 Harmful to aquatic organisms, r term adverse effects in the aquatic e
EC Safety Phrases:	S53 Avoid exposure - obtain special instr use. S45 In case of accident or if you feel unv advice immediately (show the label v S61 Avoid release to the environment, R instructions/Safety data sheets.
EINECS (EC):	All components listed

16. OTHER INFORMATION

Other Information:

Hazardous concentrations of hydrogen sulfide (H₂S) gas can accumulate in storage and rundown tanks, marine vessel compartments, sump pits or other confined spaces. When opening valves,

Hatches and dome covers, stand upwind, keep face as far from the opening as possible and avoid breathing any gases or vapors.

When exposure concentrations are unknown and respiratory protection is not used, personal H₂S warning devices should be worn. These devices should not be relied on to warn of life threatening concentrations. H₂S fatigues the sense of smell rapidly.

The rotten egg odor of H₂S disappears quickly, even though high concentrations are still present. The ACGIH TLV/TWA for H₂S is 10 ppm; the ACGIH STEL is 15 ppm.

Texaco recommends that all exposures to this product be minimized by strictly adhering to recommended occupational controls procedures to avoid any potential adverse health effects.

The ash from combustion products will contain nickel, vanadium, and other potentially toxic heavy metal oxides. Take appropriate precautions to avoid contact with and inhalation of ash from combustion and exhaust spaces.

THIS PRODUCT IS INTENDED FOR USE AS A FUEL ONLY.

DISCLAIMER

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use of the product are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind. Appropriate warnings and safe handling procedures should be provided to handlers and users.