MATERIAL SAFETY DATA SHEET

Issue Date: 02/15/03 Supersedes: 05/08/95

1. CHEMICAL PRODUCT IDENTIFICATION & COMPANY IDENTIFICATION

Product name: **Marine Diesel Oil**
Product Code: Multiple
Synonyms: MDO
Marine Gas Oil
MGO
#2 High Sulfur Diesel – Dyed

Responsible Party: McCall Oil and Chemical Corporation
5480 NW Front Avenue
Portland, Oregon 97210
Phone: 503-221-6400
Fax: 503-221-6414

24 Hour Emergency Phone Numbers:

McCall Oil:	503-219-0995
Foss Environmental:	503-283-1150

NFPA HAZARD CLASS:

Health:	2 (Moderate)
Flammability:	2 (Moderate)
Reactivity:	0 (Insignificant)

2. COMPOSITION & INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Volume	EXPOSURE GUIDELINES		
		Limits	Agency	Type
Diesel Fuel No. 2	99+	100*mg/m^3	ACGIH	TWA-skin
CAS# 068476-34-6				
Combustible Liquid, Eye, Skin and Respiratory Irritant				
Naphthalene	<0.5	10 ppm	ACGIH	TWA
CAS# 000091-20-3		15 ppm	ACGIH	STEL
Combustible Liquid, Eye, Skin and Respiratory Irritant,		10 ppm	OSHA	TWA
Toxic by Ingestion		15 ppm	OSHA	STEL
Benzene	Trace	10 ppm	ACGIH	TWA
CAS# 000071-43-2		10 ppm	OSHA	TWA
Flammable Liquid, Eye, Skin, and Respiratory Irritant,				
CNS Toxin, Carcinogen per OSHA, IRAC, and NTP				

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: A clear bright liquid with a petroleum odor. Can be straw-colored to dyed red. Combustible liquid and vapors. Vapors from this product may concentrate in confined spaces and form an explosive mixture. Vapors, mists and liquid are moderately irritating to eyes, skin and respiratory tract. Inhalation of high concentrations may cause a narcotic effect.

POTENTIAL HEALTH EFFECTS:

INHALATION: Exposure to vapors or mists may be moderately irritating to the respiratory tract. Symptoms of exposure may include: headache, dizziness, drowsiness, nausea, vomiting, and loss of coordination. Use in poorly ventilated areas or confined spaces may result in unconsciousness and asphyxiation.

EYE CONTACT: Exposure to vapors, mists or liquids may cause mild eye irritation. Symptoms of exposure may include watering, redness and a stinging sensation. Exposure is not expected to cause corneal damage or visual impairment.

SKIN CONTACT: Prolonged exposure to vapors, mists or liquid may cause moderate skin irritation. Symptoms of exposure may include redness, swelling, chemical burns, blister formation and possible tissue destruction. Product may be absorbed through the skin in harmful amounts.

INGESTION: Aspiration hazard. This product can enter the lungs and cause severe lung damage during swallowing or vomiting. Symptoms of exposure may include nausea, vomiting, diarrhea and abdominal pain.

CHRONIC: Prolonged or repeated exposure to this product may cause the development of dermatitis. Possible cancer hazard. Contains material which may cause cancer based on animal data.

4. FIRST AID MEASURES

INHALATION: If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. **Do not use mouth to mouth method** if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure – arm lift) or proper respiratory medical device. If breathing is difficult, give oxygen. Call a physician.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention if irritation persists.

SKIN CONTACT: In case of contact, cleanse affected area thoroughly by washing with mild soap and water. Remove contaminated clothing and shoes. If irritation occurs and persists, get medical attention.

INGESTION: Aspiration hazard. If swallowed, **DO NOT INDUCE VOMITING** or give anything by mouth. This material can enter the lungs and cause severe damage if vomited. If victim is drowsy or unconscious, place on left side with the head down. Get medical attention immediately.

NOTE TO PHYSICIANS: Direct treatment of overexposure to control symptoms. Lung injury may have occurred if material was aspirated. Emesis should not be induced by mechanical or pharmacological means. If evacuation of the stomach contents is necessary, this should be done by gastric levage in the presence of endotracheal intubation.

5. FIRE FIGHTING MEASURES

Flashpoint and Method: ≥ 60° C (140° F) Pensky-Martens Closed Cup (ASTM D 93)

Flammable Limits (in air, % by volume): Lower: 0.5% Upper: 4.1%

Autoignition Temperature: 260° C (500° F)

GENERAL HAZARD: The Uniform Fire Code physical hazard rating for this product is: Class III-A Combustible Liquid. Combustible liquid and vapor. Vapors from this product may concentrate in confined spaces and form an explosive mixture. Heated containers may rupture violently from excessive heat.

FIRE FIGHTING INSTRUCTIONS: EXTINGUISHING MEDIA: Water spray, foam CO2 and dry chemcials. Use water spray to cool containers exposed to fire. This product may produce a floating fire hazard.

FIRE FIGHTING EQUIPMENT: Fire fighters should wear full protective equipment, including self-contained breathing apparatus.

HAZARDOUS COMBUSION PRODUCTS: Thermal decomposition will produce carbon monoxide and carbon dioxide, with possible minute quantities of hydrogen sulfide and toxic oxides of sulfur.

6. ACCIDENTAL RELEASE MEASURES

LAND SPILL: Remove all ignition sources. Vapors are heavier than air and will be concentrated at ground level. Vapors may be depressed by the use of a water fog. Wear recommended protective clothing. Dike spill and pick up bulk of liquid using non-sparking tools or absorb liquid in sand or a non-flammable absorbent. Place in approved containers for disposal. Flush spill area with water, collect rinsates and containerize for disposal. Prevent run-off from contaminating sewers, streams or other bodies of water.

WATER SPILL: This material has negligible solubility in water. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. Notify all downstream users of possible contamination.

NOTIFICATION: Any spill or release, or substantial threat of release, of this material to navigable water sufficient to cause a visible sheen upon the water must be reported immediately to the National Response Center (800-424-8802), as required by U.S. Coast Guard regulations (33 CFR part 153) and EPA regulations (40 CFR part 110). Failure to report may result in substantial civil and criminal penalties.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Ambient
STORAGE PRESSURE: Ambient

GENERAL: Store in a cool, dry area away from all sources of ignition and incompatible material. Ground and bond containers prior to transferring contents to reduce the possibility of static spark-initiated fire or explosion. Avoid breathing vapors, mists or aerosols. Use only with adequate ventilation. Protect eyes, skin and clothing from contact with product. Wear recommended protective equipment. Wash thoroughly after handling. Do not enter vapor spaces without proper respiratory equipment. Empty containers may be hazardous. They may contain combustible residues and vapors. Do not cut, puncture or weld on or near empty containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL MEASURES: General mechanical room ventilation is sufficient for normal use of this product. If use generates vapors, mists or aerosols, use local mechanical exhaust ventilation capable of maintaining emissions in the work area below a level where irritation is noticeable or below the OSHA and ACGIH levels for the trace component.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:
RESPIRATOR: Not required for normal use of this product. If use generates vapors, mists or aerosols, wear a NIOSH-approved half mask air-purifying cartridge respirator equipped with an organic vapor cartridge or supplied air.

EYES; Wear chemical goggles (recommended by ANSI Z87.1-1979).

GLOVES: Nitrile rubber gloves.

CLOTHING & EQUIPMENT: Wear a nitrile apron or protective suit when handling material . An eye wash station and safety shower should be available in the work area.

FOOTWEAR: Nitrile or neoprene boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Straw-colored to dyed red
Physical State:	Liquid
Odor:	Petroleum odor
Odor Threshold:	No data available
Molecular Formula:	Not applicable – Mixture
Molecular Weight:	Not applicable – Mixture
Boiling Point:	343.3° C (650° F)
Freezing/Melting Point:	No data available
Specific Gravity:	0.852 @ 20° C
Density (pounds/gallon):	7.10
Bulk Density (pounds/cuft):	Not applicable
Vapor Pressure:	Less than 10 mm HG @ 20° C
Vapor Density (air=1):	No data available
Evaporation Rate (n-Butyl Acetate+1):	No data available
VOC Content:	Very low
% Volatile:	Negligible
Solubility in H2O:	Negligible
Octanol/Water Partition Coefficient:	No data available
PH (as is):	Not applicable
PH (1% solution):	Not applicable

10. STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur

CONDITIONS TO AVOID: Avoid prolonged excessive heat.

INCOMPATIBLE MATERIAL: Strong oxidating agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition will produce carbon monoxide and carbon dioxide, with possible minute quantities of hydrogen sulfide and toxic oxides of sulfur.

SENSITIVITY TO MECHANICAL IMPACT: This product is not sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE: This product is sensitive to static discharge.

11. TOXICOLOGICAL INFORMATION SUMMARY

Estimate of product toxicological data based on available individual component information.

Eye Irritation: No specific data available – product should be a mild irritant
Skin Irritation: No specific data available – product should be a moderate to severe irritant
Oral Rat LD50: Estimated at 8 gm/kg
Dermal Rabbit LD50: Estimated at 4 gm/kg
Inhalation Rat LC50: No specific data available
Synergistic Products: None reported
Target Organs: Eyes, Skin, and Lungs
Medical Conditions Aggravated by Exposure: Respiratory and skin disorders
Toxicological Notes: Petroleum and petrochemical products may contain trace amounts of chemicals known to cause cancer and/or birth defects or other reproductive harm. Trace contaminates may be naturally present in the raw materials, may result from the manufacturing process, or the product may become inadvertently contaminated during handling.

This product contains middle distillates which have caused skin irritation and skin cancer in laboratory animals when repeatedly applied and left in place between applications. Studies to further evaluate the carcinogenic potential of middle distillates are currently underway. Kidney damage has also been observed in laboratory animals exposed to middle distillates.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:
The environmental fate of this product is expected to be: **Land**: biodegradation with some leaching into the groundwater. **Water:** volatilization and biodegradation. **Air:** expected to exist in vapor phase only due to low vapor pressure. Product is not expected to bioaccumulate.

ENVIRONMENTAL EFFECTS:
Aquatic toxicity information for this product is not available.

NOTIFICATION: Any spill or release, or substantial threat of release, of this material to navigable water sufficient to cause a visible sheen upon the water must be reported immediately to the **National Response Center** (800-424-8802), as required by U.S. Coast Guard regulations (33CFR part 153) and EPA regulations (40 CFR part 110). Failure to report may result in substantial civil and criminal penalties.

13. DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATION: Not applicable

U.S. EPA WASTE NUMBER/DESCRIPTION: None

If this product is disposed of as shipped, it does not meet the criteria of a hazardous waster of subpart C, nor is it listed as a hazardous waste under Subpart D. As a non-hazardous liquid waste, it should be disposed of in accordance with all local, state and federal regulations. Consult state or local officials for proper disposal method.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: FUEL OIL
DOT HAZARD CLASS: 3
UN NUMBER: NA1993
PACKING GROUP: III
DOT LABELS: Primary: Flammable Liquid Subsidiary: None required
DOT PLACARDS: Flammable Liquid
CERCLA Reportable Quantity: 10 pounds for Benzene. For product: 11,111.1 pounds (1,546.9gallons)
MARINE POLLUTANT: No
DOT Emergency Response Guidebook Number: 27

15. REGULATORY INFORMATION ON PRODUCT

Target Organs: Eyes, Skin and Lungs
Carcinogenic Potential:
Regulated by OSHA: No
Listed on NTP Report: No
IARC Listing: Benzene is listed as a Group 1
ACGIH Appendix A: Product contains trace amounts of benzene
A1 Confirmed Human: Product contains trace amounts of benzene
A1 Suspected Human: Not applicable for any of the components of this product

U.S. EPA Requirements
Release Reporting under CERCLA (40 CFR 302):
Listed Substance: Benzene and 1-methylethylbenzene
Reportable Quantity: 10 pounds (benzene) 5,000 pounds (1-methylethylbenzene)
RCRA Waste No: U019 (benzene) UO55 (1-methylethylbenzene)

SARA TITLE III
Section 302 & 303 (40 CFR 355)
Listed Substance: Not applicable for any of the components of this product
Reportable Quantity: Not applicable for any of the components of this product
Planning Threshold: Not applicable for any of the components of this product

Section 311 & 312 (40 CFR 372)
Hazard Categories: Fire: Y
Sudden Release of Pressure: N
Reactive: N
Acute Health: Y
Chronic Health: Y
Planning Threshold: 10,000 pounds

15. REGULATORY INFORMATION ON PRODUCTS (continued)

SARA TITLE III (continued)
Section 313 (40 CFR 372)
Listed Toxic Chemical: Product does not contain any listed components above the diminimus level
Reporting Threshold: Not applicable for any of the components of this product

U.S. TSCA STATUS
Listed (40 CFR 710): All components of this product are listed in the TSCA Inventory

STATE REGULATIONS:
State of California
Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65)
Carcinogen: Product contains trace amounts of benzene
Reproductive Toxin: Not applicable for any of the components of this product

OTHER REGULATIONS
State Right to Know Laws: Benzene and 1-Methylethylbenzene are listed on the CT, FL, IL, LA, MA, NJ, PA,RI and MI listings

16. OTHER INFORMATION

Special Notes: WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes.

Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum, if subjected to a sudden ingress of air, or outside process equipment operating under elevated pressure if a sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

NOTE: This product contains trace amount of benzene, 1-methylethylbenzene and 1,2,4-trimethyl benzene. Actual concentrations range between 0.01 and 0.09% by weight.

MSDS Revision Information: Form Revision made 05/02/95
Information Revised This Issue Date: Combined product information and changed contact numbers
MSDS distributed by: McCall Oil & Chemical Corporation
Phone: 503-221-6400 Fax: 503-221-6414