



January 15, 2007

Via Certified Mail  
Return Receipt Requested  
Article No. 7006 2150 0002 4009 8585

Mr. Al Linero, P.E.  
Administrator  
South Permitting Section  
Department of Environmental Protection  
Division Air resource Management  
2600 Blair Stone Road, MS # 5505  
Tallahassee, Florida 32399-2400

RECEIVED

JAN 22 2008

BUREAU OF AIR REGULATION

Re: On Specification Oil Usage – Raw Mill Air Heater

Dear Mr. Linero:

The current Air Construction Permit No. 1190042-001-AC, PSD-FL-361, for American Cement Company, LLC, allows the burning of on-specification used oil system (1,500,000 gallons per year). In the state of Florida there was 41,386,124 gallons of on-specification used oil marketed during 2004 (Florida's Used Oil Recycling Program 21<sup>st</sup> Annual Report March, 2006). The Raw Mill Air Heater is permitted to burn No. 2 and No. 4 fuel oil. No. 4 fuel oil is typically a mixture of No. 2 Diesel Fuel and No. 6 fuel oil (Bunker C) and is identified by a dark brown or black color with properties similar to on-specification used oil. We believe on-specification used oil can be burned in the air heater in addition to No. 4 fuel oil as there will be no increase in emissions. Our findings show if anything a potential reduction in VOC emissions will be realized as on-specification used oil has negligible volatiles.

It is our desire to operate both the Pyroprocessing system and Raw Mill air heater with on-specification used oil including our initial compliance test.

The following is a summary indicating the properties of on-specification used oil and No. 4 fuel oil which supports our position. Attached are supplier data sheets for used oil and MSDS sheets for No. 4 fuel oil.

	On-Specification Used Oil Data		Fuel Oil MSDS Data	
	Siemens Hydrocarbon Service	Atlantic Industrial Services	Marathon No. 4 Fuel Oil	Hess No. 4 Fuel Oil
Viscosity, SUS	180	109.8		
Flash Point, °F	190	206	131	140
API Gravity	29.4	29.1		30 - 13
Percent Water	0.6	1.18		
Percent Ash	0.8684	NR		
Percent Sulfur	0.4305	0.31	1 - 3	
Pounds/ Gal.	7.318	7.339	7.4 - 7.8	
BTU/ Gal.	143,177	NR		

NR – Not reported

We respectfully request the Departments support of this clarification as it relates to our fuel usage.

Should, you have any question and/or comments concerning the information above or require additional information, please contact me at 352- 569-5393.

Respectfully,  
American Cement Company, LLC



George Townsend  
Environmental Manager

pc: Cary O. Cohrs  
William P. Wall

**CERTIFIED ANALYSIS**

Project ID:	Finished Product	Company Name:	Siemens Water Technologies Corp. - Plant City
Site address:	Plant City, FL	Client address:	105 S. Alexander St.
Sample Date:	6/11/2007	City, State, zip:	Plant City, FL 33566
Siemens Lab ID#:	07-0643	Client Phone:	813-754-1504
Tank:	552	Sampled By:	Jesus Valencia
Matrix:	Oil	Report Date:	6/13/2007

Parameter	Method	Result/Initials	Analysis date	Prep date	Units	RL	Dilution Factor	Regulatory Limit*
Viscosity	Visgage	180 AS	6/11/2007	6/11/2007	SSU@100°F	10	1	N/A
Flash Point	EPA1010A	190 AS	6/11/2007	6/11/2007	°F	30	1	<140°F
API Gravity	D287	29.4 AS	6/11/2007	6/11/2007	N/A	0	1	N/A
Percent Water	D95	0.6 AS	6/11/2007	6/11/2007	%	0.1	2	N/A
Percent Ash	D482	0.8684 CB	6/14/2007	6/14/2007	%	0.01	1	N/A
Total Halides (TX)	9075	139 AS	6/11/2007	6/11/2007	mg/Kg	20	1	1000
Percent Sulfur	D4294-03	4305 AS	6/11/2007	6/11/2007	%	0.05	1	N/A
PCBs Aroclor 1016	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1221	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1232	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1242	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1248	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1254	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
PCBs Aroclor 1260	8082	ND CB	6/11/2007	6/11/2007	mg/Kg	2	4	2
Pounds per Gallon	CALC	7.318 CB	6/13/2007	6/13/2007	Lbs/gal	N/A	N/A	N/A
BTU per Gallon	CALC	143177 CB	6/13/2007	6/13/2007	BTU/gal	N/A	N/A	N/A
Arsenic	3040A/6010B	BRL CB	6/13/2007	6/13/2007	mg/Kg	2.0	10	5
Cadmium	3040A/6010B	BRL CB	6/13/2007	6/13/2007	mg/Kg	0.3	10	2
Chromium	3040A/6010B	1.6 CB	6/13/2007	6/13/2007	mg/Kg	0.5	10	10
Lead	3040A/6010B	16.6 CB	6/13/2007	6/13/2007	mg/Kg	1.0	10	100

ND= analyte was analyzed for but not detected above the reporting limit

BRL= Below Reporting Limit



Chemist/Lab Technician

Chemist/Lab Technician

State of Florida Certification: EB4160



Chemist/Lab Technician

Laboratory Manager

\*The regulatory limit stated above reflects the Federal EPA limit for on-specification fuel oil as defined in 40 CFR 279.11. The on-specification limit for PCB's is imposed by 40 CFR 761.20 (e). These regulatory limits may be less stringent than those required by site-specific permit requirements that may be held by the consumer. Please reference any applicable permits prior to acceptance of this material to ensure compliance.

\*This lab is not currently certified for PCB's.

The lab certifies results meet all requirements of the NELAC standards, unless otherwise noted. All weights are based on wet weights unless otherwise specified.

# ATLANTIC INDUSTRIAL SERVICES-LABORATORY

24-Jul-07

## ANALYTICAL REPORT

Report Number 2927 Division # 541- Ocala,FL. Protocol 901 Used Oil- Outbound DHO

Date Sampled 7/21/2007 5:00:00 AM Sampler Eddie Richardson

Date Received and Analyzed 24-Jul-07 Received By Yvette Festervan Date Sold

Manifest Number Tank Number 8 Truck Number

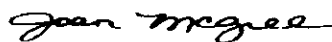
Customer

Comments

2927

Parameter	SOP	Method	Result	Unit
Ignitability	111	EPA SW846-1010	>206	deg. F
Water	112	ASTM D-1744	1.18	%
API Gravity, Hydrometer	113a	ASTM D-1298	29.1	API deg.
Pounds/Gallon	113c	ASTM D-4052	7.339	lb./gal.
Viscosity @ 140 Deg. F	120	ASTM D-445	109.8	SUS
Arsenic	121a	EPA SW846-6010	BDL	ppm
Cadmium	121b	EPA SW846-6010	BDL	ppm
Chromium	121c	EPA SW846-6010	1.40	ppm
Lead	121d	EPA SW846-6010	12.6	ppm
Chlorine	122a	EPA SW846-9075	288	ppm
Sulfur	122b	ASTM D4294-03	0.31	%
PCB	131	EPA SW846-8082	BDL	ppm

\* Out of Acceptable Limits



Laboratory Manager

Atlantic Industrial Services, Inc.

The reported results are supplied as documentation of analysis under 40 CFR 279.11 for used oil specification.  
The reported results are not to be used as determination of solid or hazardous waste classifications.



MATERIAL SAFETY DATA SHEET

No. 4 Fuel Oil

MSDS No. 15054

EMERGENCY OVERVIEW

CAUTION!

COMBUSTIBLE LIQUID - SLIGHT TO MODERATE IRRITANT - EFFECTS  
CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF SWALLOWED

Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause moderate eye irritation and skin irritation. Long-term, repeated exposure may cause skin cancer. Hot liquid may cause thermal burns. If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).



NFPA 704 (Section 16)

1. CHEMICAL PRODUCT and COMPANY INFORMATION

Hess Corporation  
1 Hess Plaza  
Woodbridge, NJ 07095-0961

SYNONYMS: 4 Fuel Oil; 4 Oil; Low Sulfur No. 4 Fuel Oil

EMERGENCY TELEPHONE NUMBER (24 hrs):

CHEMTREC (800) 424-9300

COMPANY CONTACT (business hours):

Corporate EHS (732) 750-6000

MSDS Internet Website:

[www.hess.com](http://www.hess.com)

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Fuel Oil No. 4 (68476-31-3)	100

A complex combination of heavy (high boiling point) petroleum hydrocarbons and is a blend of distillate (such as No. 2 Fuel Oil) and residual fuel oil (such as No. 6 Fuel Oil). The amount of sulfur varies with product specification and does not affect the health and safety properties as outlined in this Material Safety Data Sheet.

3. HAZARDS IDENTIFICATION

**EYES**

Contact with eyes may cause mild to moderate irritation.

**SKIN**

May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. May cause dermal sensitization.

**INGESTION**

This material has a low order of acute toxicity. If large quantities are ingested, nausea, vomiting and diarrhea may result. Ingestion may also cause effects similar to inhalation of the product. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.



## MATERIAL SAFETY DATA SHEET

No. 4 Fuel Oil

MSDS No. 15054

### INHALATION

Because of its low vapor pressure, this product presents a minimal inhalation hazard at ambient temperature. Upon heating, fumes may be evolved. Inhalation of fumes or mist may result in respiratory tract irritation and central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

**WARNING:** the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

### CHRONIC and CARCINOGENICITY

Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11, Toxicological Information.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

### FUEL OIL COMBUSTION ASH

Trace amounts of nickel, vanadium, and other metals in slurry oil can become concentrated in the oxide form in combustion ash deposits. Vanadium is a toxic metal affecting a number of organ systems. Nickel is a suspect human carcinogen (lung, nasal, and sinus), an eye, nose, and throat irritant, and can cause allergic skin reaction in some individuals. See Section 7 for appropriate work practices.

## 4. FIRST AID MEASURES

### EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

### SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

### INGESTION

**DO NOT INDUCE VOMITING.** Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

### INHALATION

Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

## 5. FIRE FIGHTING MEASURES

### FLAMMABLE PROPERTIES:

FLASH POINT:	140 °F (>60 °C) (minimum) ASTM D-93
AUTOIGNITION TEMPERATURE:	> 505 °F (>263 °C)
OSHA/NFPA FLAMMABILITY CLASS:	IIIA (COMBUSTIBLE)
LOWER EXPLOSIVE LIMIT (%):	N/D
UPPER EXPLOSIVE LIMIT (%):	N/D

### FIRE AND EXPLOSION HAZARDS

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or



## MATERIAL SAFETY DATA SHEET

**No. 4 Fuel Oil**

**MSDS No. 15054**

explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

**CAUTION:** flammable vapor production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. However, industry experience indicates that light hydrocarbon vapors can build up in the headspace of storage tanks at temperatures below the flash point of the oil, presenting a flammability and explosion hazard. Tank headspaces should be regarded as potentially flammable, since the oil's flash point can not be regarded as a reliable indicator of the potential flammability in tank headspaces.

### **EXTINGUISHING MEDIA**

**SMALL FIRES:** Any extinguisher suitable for Class B fires, dry chemical, CO<sub>2</sub>, water spray, fire fighting foam, or Halon.

**LARGE FIRES:** Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

### **FIRE FIGHTING INSTRUCTIONS**

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

## **6. ACCIDENTAL RELEASE MEASURES**

### **ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.**

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment.

## **7. HANDLING and STORAGE**

### **HANDLING PRECAUTIONS**

Product is generally transported and stored hot (typical 110 - 120 °F). Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified



## MATERIAL SAFETY DATA SHEET

No. 4 Fuel Oil

MSDS No. 15054

area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

### STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

### WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use gasoline or solvents (naphtha, kerosene, etc.) for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

### OTHER/GENERAL PROTECTION

Petroleum industry experience indicates that a program providing for good personal hygiene, proper use of personal protective equipment, and minimizing the repeated and prolonged exposure to liquids and fumes, as outlined in this MSDS, is effective in reducing or eliminating the carcinogenic risk of high boiling aromatic oils (polynuclear aromatic hydrocarbons) to humans.

### FUEL OIL ASH PRODUCTS

Personnel exposed to ash should wear appropriate protective clothing (example, DuPont Tyvek ®), wash skin thoroughly, launder contaminated clothing separately, and wear respiratory protection approved for use against toxic metal dusts (such as HEPA filter cartridges). Wetted-down combustion ash may evolve toxic hydrogen sulfide (H<sub>2</sub>S) - confined spaces should be tested for H<sub>2</sub>S prior to entry if ash is wetted.

## 8. EXPOSURE CONTROLS and PERSONAL PROTECTION

### EXPOSURE LIMITS

Components (CAS No.)	Source	Exposure Limits	
		TWA/STEL	Note
Fuel Oil (68476-31-3)	OSHA	5 mg/m <sup>3</sup> as mineral oil mist TWA	
	ACGIH	0.2 mg/m <sup>3</sup> as mineral oil TWA	A2, skin

### ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

### EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying

### SKIN PROTECTION





## MATERIAL SAFETY DATA SHEET

**No. 4 Fuel Oil**

**MSDS No. 15054**

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont Tyvek QC®, Saranex®, TyChem® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information

### **RESPIRATORY PROTECTION**

NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

### **9. PHYSICAL and CHEMICAL PROPERTIES**

#### **APPEARANCE**

Black, viscous liquid

#### **ODOR**

Heavy, petroleum/asphalt-type odor

#### **BASIC PHYSICAL PROPERTIES**

BOILING RANGE: 350 - 700 °F (177 - 371 °C)  
SPECIFIC GRAVITY (H<sub>2</sub>O=1) 0.876 - 0.979 (API 30.0 - 13.0)  
VAPOR PRESSURE: <0.007 psia @ 100 °F (38 °C)  
VAPOR DENSITY (air = 1): N/A  
PERCENT VOLATILES: Negligible  
EVAPORATION RATE: Negligible  
SOLUBILITY (H<sub>2</sub>O): Negligible

### **10. STABILITY and REACTIVITY**

**STABILITY:** Stable. Hazardous polymerization will not occur.

#### **CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS**

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers.

#### **HAZARDOUS DECOMPOSITION PRODUCTS:**

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

### **11. TOXICOLOGICAL PROPERTIES**

#### **ACUTE TOXICITY**

Acute toxicity data is not available; the following is based on data for No. 2 and No. 6 fuel oils:

Acute dermal LD50 (rabbits): > 5 ml/kg

Acute oral LD50 (rats): 5.1 ml/kg

Primary dermal irritation: Moderately irritating (rabbits)

Draize eye irritation: mildly irritating (rabbits)

Guinea pig sensitization: Mildly sensitizing

#### **CHRONIC EFFECTS AND CARCINOGENICITY**

Carcinogenicity: OSHA: NO IARC: 2B (animal) NTP: YES ACGIH: A2



## MATERIAL SAFETY DATA SHEET

No. 4 Fuel Oil

MSDS No. 15054

This material contains polynuclear aromatic hydrocarbons (PNAs), some of which are animal carcinogens. Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

The presence of carcinogenic PNAs indicates that precautions should be taken to minimize repeated and prolonged inhalation of fumes or mists.

### **MUTAGENICITY (genetic effects)**

Materials of similar composition have been positive in mutagenicity studies.

## 12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage and waterways. Report spills and releases, as applicable, under Federal and State regulations.

## 13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options. Combustion ash may be a characteristic hazardous waste.

## 14. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Fuel Oil, No. 4  
HAZARD CLASS & PACKING GROUP: 3, PG III  
DOT IDENTIFICATION NUMBER: NA 1993  
DOT SHIPPING LABEL: Flammable Liquid

Placard:



May be reclassified for transportation as a COMBUSTIBLE LIQUID under conditions of DOT 49 CFR 173.120(b)(2).

## 15. REGULATORY INFORMATION

### **U.S. FEDERAL, STATE and LOCAL REGULATORY INFORMATION**

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

### **CLEAN WATER ACT (OIL SPILLS)**

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

### **CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)**

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.



**MATERIAL SAFETY DATA SHEET****No. 4 Fuel Oil****MSDS No. 15054****ACRONYMS:**

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
AIHA	American Industrial Hygiene Association	OPA	Oil Pollution Act of 1990
ANSI	American National Standards Institute (212)642-4900	OSHA	U.S. Occupational Safety & Health Administration
API	American Petroleum Institute (202)682-8000	PEL	Permissible Exposure Limit (OSHA)
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation [General info: (800)467-4922]	REL	Recommended Exposure Limit (NIOSH)
EPA	U.S. Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
HMIS	Hazardous Materials Information System	SCBA	Self-Contained Breathing Apparatus
IARC	International Agency For Research On Cancer	SPCC	Spill Prevention, Control, and Countermeasures
MSHA	Mine Safety and Health Administration	STEL	Short-Term Exposure Limit (generally 15 minutes)
NFPA	National Fire Protection Association (617)770-3000	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	TWA	Time Weighted Average (8 hr.)
		WEEL	Workplace Environmental Exposure Level (AIHA)
		WHMIS	Canadian Workplace Hazardous Materials Information System

**DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES**

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.



# Material Safety Data Sheet

MSDS ID NO.: 0242MAR019  
Revision date: 07/25/2006

UNCLASSIFIED//FOR OFFICIAL USE ONLY

**Product name:** Marathon No. 4 Fuel Oil  
**Synonym:** No. 4 Fuel Oil  
**Chemical Family:** Petroleum Hydrocarbon  
**Formula:** Mixture

**Manufacturer:**  
Marathon Petroleum Company LLC  
539 South Main Street  
Findlay OH 45840

**Other information:** 419-421-3070  
**Emergency telephone number:** 877-627-5463

UNCLASSIFIED//FOR OFFICIAL USE ONLY

Heavy or residual fuel is a complex mixture of high molecular weight hydrocarbons produced from high temperature treatment of heavy petroleum fractions.

### Product information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Marathon No. 4 Fuel Oil	Mixture	100			

### Component Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Catalytic Cracked Clarified Oil	64741-62-4	0-60			
No. 6 Fuel Oil	68553-00-4	30-60			
Diesel Oil	68334-30-5	10-40	= 100 mg/m <sup>3</sup> TWA vapor and aerosol, as total hydrocarbons skin - potential for cutaneous absorption (as total hydrocarbons)		
Petroleum Residua	Mixture	0-24			
Sulfur Compounds	Mixture	1-3			
Naphthalene	91-20-3	0.01-0.2	Skin - potential significant contribution to overall exposure by the cutaneous route = 10 ppm TWA = 15 ppm STEL	= 10 ppm TWA = 50 mg/m <sup>3</sup> TWA = 15 ppm STEL = 75 mg/m <sup>3</sup> STEL	
Hydrogen Sulfide	7783-06-4	0-0.01	= 10 ppm TWA = 15 ppm STEL	= 10 ppm TWA = 14 mg/m <sup>3</sup> TWA = 15 ppm STEL = 21 mg/m <sup>3</sup> STEL	

**Notes:**

The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

**EMERGENCY OVERVIEW**

THIS PRODUCT IS A BROWN TO BLACK VISCOUS COLORED LIQUID. THIS PRODUCT IS CONSIDERED TO BE A COMBUSTIBLE LIQUID PER THE OSHA HAZARD COMMUNICATION STANDARD AND SHOULD BE KEPT AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. LONG-TERM SKIN EXPOSURE TO COMPONENTS OF THIS PRODUCT HAS CAUSED CANCER IN LABORATORY ANIMALS AND HUMANS. REPEATED SKIN CONTACT TO SOME COMPONENTS OF THIS PRODUCT HAVE PRODUCED SYSTEMIC TOXICITY (INCLUDING LIVER DAMAGE) IN LABORATORY ANIMALS. WHEN HEATED THIS MATERIAL MAY VENT TOXIC LEVELS OF HYDROGEN SULFIDE (H<sub>2</sub>S) VAPORS THAT ACCUMULATE IN THE VAPOR SPACES OF STORAGE AND TRANSPORT COMPARTMENTS. H<sub>2</sub>S VAPORS CAN CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION AND ASPHYXIATION.

**OSHA WARNING LABEL:**

**DANGER!  
COMBUSTIBLE LIQUID.**

**LONG-TERM SKIN EXPOSURE TO COMPONENTS OF THIS PRODUCT HAS CAUSED CANCER IN LABORATORY ANIMALS.**

**REPEATED SKIN CONTACT TO SOME COMPONENTS IN THIS PRODUCT HAS PRODUCED SYSTEMIC TOXICITY (INCLUDING LIVER DAMAGE) IN LABORATORY ANIMALS.**

**MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H<sub>2</sub>S) GAS WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION.**

**CONSUMER WARNING LABEL:**

**A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.**

**Inhalation:** Exposure to vapor or mist may cause pulmonary irritation, dizziness, nausea and loss of consciousness. Significant concentrations of hydrogen sulfide gas can be present in the vapor space of storage tanks and bulk transport compartments (See Sections 7, 8 & 11).

**Ingestion:** Product would be expected to have a low order of acute toxicity. Significant ingestion of some components of this product may cause liver damage.

**Skin contact:** Prolonged and repeated liquid contact can cause dermatitis, folliculitis or oil acne. Components of this product may cause skin sensitization. Components of this product can cause liver damage if absorbed through the skin.

**Eye contact:** Liquid or vapor contact may result in slight eye irritation.

**Carcinogenic Evaluation:**

**Product information:**

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Marathon No. 4 Fuel Oil Mixture	NE			

**Notes:** The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of residual (heavy) fuel oil in animals.

**Component Information:**

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:

Diesel Oil 68334-30-5	Monograph 45, 1989; (Overall evaluation upgraded from 3 to 2B with supporting evidence from other data relevant to the evaluation of carcinogenicity and its mechanisms)		A3 - Animal Carcinogen (as total hydrocarbons)	
Naphthalene 91-20-3	Monograph 82, 2002	Reasonably Anticipated To Be A Carcinogen Listed	A4 - Not Classifiable as a Human Carcinogen	Present

**Notes:**

The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of catalytically cracked clarified oil (carbonblack feedstock) in animals.

The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of diesel fuel/fuel oil in humans. IARC determined that there was limited evidence for the carcinogenicity of marine diesel fuel in animals. Distillate (light) diesel fuels were not classifiable as to their carcinogenicity to humans (Group 3A)

The International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) have concluded that certain polycyclic aromatic hydrocarbons, i.e. (benzo(a)pyrene, benz(a)anthracene, benzo(a)phenanthrene, indeno(1,2,3-cd)pyrene, benzo(j)fluoranthene, benzo(j,k,fluorine, benzo(g,h,i)perylene, and 5-methylchrysene are probably carcinogenic to humans (Group 2A and B).

The International Agency for Research on Cancer (IARC) and the Environmental Protection Agency (EPA) have determined that naphthalene could be a possible human carcinogen.

**FIRST AID MEASURES**

- Inhalation:** If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.
- Skin contact:** Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.
- Ingestion:** Ingestion not likely. If swallowed, do not induce vomiting and do not give liquids. Immediately call a physician.
- Eye contact:** Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.
- Medical conditions aggravated by exposure:** Preexisting skin conditions, respiratory disorders, and impaired liver function may be aggravated by exposure to components of this product.

**FIREFIGHTING MEASURES**

- Suitable extinguishing media:** For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.



**Specific hazards:**

This product has been determined to be a combustible liquid per the OSHA Hazard Communication Standard and should be handled accordingly. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

**Special protective equipment for firefighters:**

Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Keep surrounding area cool with water spray from a distance and prevent further ignition of combustible material. Keep run-off water out of sewers and water sources.

**Flash point:**

131 (Min) F

**Autoignition temperature:**

No data available.

**Flammable limits in air - lower (%):**

1.0

**Flammable limits in air - upper (%):**

6.0

**NFPA rating:**

**HMIS classification:**

Health: 2

Health: 2

Flammability: 2

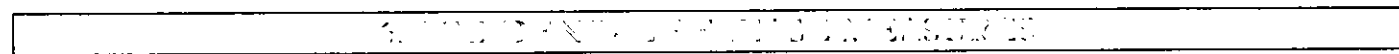
Flammability: 2

Reactivity: 1

Reactivity: 1

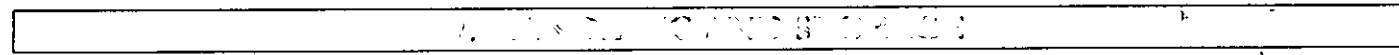
Other: -

Special: \*See Section 8 for guidance in selection of personal protective equipment.



**Personal precautions:**

Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Notify local health and pollution control agencies, if appropriate. Contain liquid with sand or soil. Recover and return product to source.

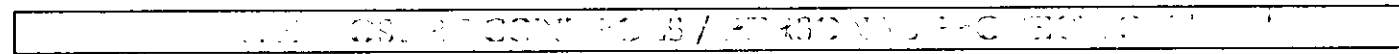


**Handling:**

Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. The fuel oil contained in this product may flash if product temperature is >131 F.

Harmful concentrations of hydrogen sulfide (H2S) gas can be generated and accumulate in storage tanks and bulk transport compartments. Stay upwind and vent open hatches before unloading.

Avoid skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.



**PERSONAL PROTECTIVE EQUIPMENT**

**Engineering measures:**

Local or general exhaust required in an enclosed area or when there is inadequate ventilation.

**Respiratory protection:**

Not required under normal conditions and adequate ventilation. Use atmosphere supplying respirators in confined spaces or when vapors exceed permissible limits; otherwise, an organic vapor respirator with pre-filter for fumes can be used. Self-contained breathing apparatus should be used for fire fighting.

**Skin and body protection:** Impermeable gloves (e.g., nitrile, viton, tyvek/saranex 23) to prevent skin contact.

**Eye protection:** Goggles and faceshield when handling hot material.

**Hygiene measures:** Use mechanical ventilation equipment that is explosion-proof. Chemical resistant apron or other protective clothing may be needed to avoid skin contact.

**PHYSICAL AND CHEMICAL PROPERTIES:**

<b>Appearance:</b>	Light-dark, Brown Liquid
<b>Physical state (Solid/Liquid/Gas):</b>	Liquid
<b>Substance type (Pure/Mixture):</b>	Mixture
<b>Color:</b>	Light to Dark brown
<b>Odor:</b>	Hydrocarbon
<b>Molecular weight:</b>	Not determined.
<b>pH:</b>	Neutral
<b>Boiling point/range (5-95%):</b>	400-1000 F
<b>Melting point/range:</b>	Not determined.
<b>Decomposition temperature:</b>	Not applicable.
<b>Specific gravity:</b>	Not determined
<b>Density:</b>	7.4-7.8 lbs/gal
<b>Bulk density:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Vapor pressure:</b>	1 mm Hg @ 160 F
<b>Evaporation rate:</b>	No data available.
<b>Solubility:</b>	Negligible
<b>Solubility in other solvents:</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>VOC content(%):</b>	No data available.
<b>Viscosity:</b>	No data available.

**STABILITY AND REACTIVITY:**

<b>Stability:</b>	The material is stable at 70 F, 760 mm pressure.
<b>Polymerization:</b>	Will not occur.
<b>Hazardous decomposition products:</b>	Combustion produces carbon monoxide, aldehydes, aromatic and other hydrocarbons.
<b>Materials to avoid:</b>	Strong oxidizers such as nitrates, chlorates, peroxides.
<b>Conditions to avoid:</b>	Sources of heat or ignition.

**TOXICOLOGY INFORMATION:**

**Acute toxicity:**

**Product information:**

Name	CAS Number	Inhalation:	Dermal:	Oral:
Marathon No. 4 Fuel Oil	Mixture	No data available	No data available	No data available

#### Summary of health effect data on No. 4 fuel oil components:

Lifetime skin painting studies in animals with products similar to Heavy catalytic cracked distillate, No. 6 fuel oil and/or its components have produced tumors in animals following prolonged and repeated skin contact. Repeated dermal application has produced severe irritation and systemic toxicity in subacute toxicity studies.

Lifetime skin painting studies in animals with similar distillate fuels have produced weak to moderate carcinogenic activity following prolonged and repeated exposure. Similar middle distillates, when tested at nonirritating dose levels, did not show any significant carcinogenic activity indicating that this tumorigenic response is likely related to chronic irritation and not to dose. Repeated dermal application has produced severe irritation and systemic toxicity in subacute toxicity studies. Some components of this product were found to be positive in some mutagenicity tests while negative in others. The exact relationship between these results and human health is not known.

This product may contain >0.1% naphthalene. Exposure to naphthalene at 30 ppm for two years caused lung tumors in female mice. Male mice with the same exposure did not develop tumors. Exposure to 10-60 ppm naphthalene for 2 years caused tumors in the tissue lining of the nose and respiratory tract in male and female rats. Oral administration of 133-267 mg/kg/day of naphthalene in mice for up to 90 days did not produce mortality, systemic toxicity, adversely affect organ or body weight or produce changes in blood. Repeated oral administration of naphthalene produced an anemia in dogs. Repeated intraperitoneal doses of naphthalene produced lung damage in mice. Repeated high doses of naphthalene has caused the formation of cataracts and retinotoxicity in the eyes of rats and rabbits due to accumulation of 1,2-naphthoquinone, a toxic metabolite. Effects in human eyes is uncertain and not well documented. Pregnant rats administered intraperitoneal doses of naphthalene during gestation gave birth to offspring that had delayed heart and bone development. Pregnant mice given near lethal doses of naphthalene showed no significant maternal toxicity and a reduction in the number of pups per litter, but no gross abnormalities in offspring. Suppressed spermatogenesis and progeny development have been reported in mice, rats and guinea pigs after exposure to high concentrations of naphthalene in their drinking water. Certain groups or individuals, i.e., infants, Semites, Arabs, Asians and Blacks, with a certain blood enzyme deficiency (glucose-6-phosphate dehydrogenase) are particularly susceptible to hemolytic agents and can rapidly develop hemolytic anemia and systemic poisoning from ingestion or inhalation of naphthalene.

Catalytic cracked slurry oil (CCSO) may be present in concentrations up to 60% in this product. Lifetime skin painting studies in animals with CCSO have produced tumors in animals following prolonged and repeated skin contact. Repeated dermal application of CCSO (30 mg/kg/day for 13 weeks) in rats resulted in anemia, liver degeneration and injury to bone marrow and lymphoid tissues. 100% mortality was observed at 2,000 mg/kg/day within three weeks. Repeated dermal application (30 mg/kg/day) of CCSO to pregnant rats during gestation produced maternal and fetal toxicity. Deaths and systemic toxicity (liver, thymus and blood). The number of viable offspring decreased at doses of 30 mg/kg/day and above. Many of the developmental effects (anomalies, resorptions and growth inhibition) were observed at doses which produced maternal toxicity. In a separate developmental study CCSO produced decreases in body weights and food consumption at doses from 10-250 mg/kg/day. Although fertility and reproductive function were not affected, the no observable adverse effect level for CCSO administered dermally was 1 mg/kg/day.

This product contains polynuclear aromatic hydrocarbons (PAC) at a level of >0.1%. Some PACs that have been identified in this product such as benzo(a)pyrene, benz(a)anthracene and indeno(1,2,3-cd)pyrene have been shown to be carcinogenic in experimental animals. An increased risk of cancer has been observed in workers employed in the aluminum production, coal gasification, coal-tar pitch, coke production and iron and steel industries that had been occupationally exposed to polynuclear aromatic hydrocarbons. Since these kinds of PACs have been measured at high levels in air samples taken in these industries, The International Agency for Research on Cancer (IARC) has concluded that these PACs are probably carcinogenic to humans.

Hydrogen sulfide gas (H<sub>2</sub>S) is toxic by inhalation. Prolonged breathing of 50-100 ppm H<sub>2</sub>S vapors can produce eye and respiratory tract irritation. Higher concentrations (250-600 ppm) for 15-30 minutes can produce headache, dizziness, nervousness, nausea and pulmonary edema or bronchial pneumonia. Concentrations of >1000 ppm will cause immediate unconsciousness and death through respiratory paralysis. Rats and mice exposed to 80 ppm H<sub>2</sub>S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H<sub>2</sub>S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H<sub>2</sub>S, respectively. Over the years a number of acute cases of H<sub>2</sub>S poisonings have been reported. Complete and rapid recovery is the general rule. However, if the exposure was sufficiently intense and sustained causing cerebral hypoxia (lack of oxygen to the brain), neurologic effects such as amnesia, intention tremors or brain damage are possible.

12. ECOTOXICITY EVALUATION

**Ecotoxicity effects:** Product can be toxic to fish and aquatic life. The 24 hour TLM of the water soluble fraction of bunker C fuel oil is 3-6 ppm in marine and estuarine crustaceans and fish.

13. DISPOSAL CONSIDERATIONS

**Cleanup Considerations:** This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

14. REGULATORY INFORMATION

49 CFR 172.101:

**DOT:**

**Transport Information:** This material when transported via US commerce would be regulated by DOT Regulations.

<b>Proper shipping name:</b>	Fuel Oil, No. 4
<b>UN/identification No:</b>	NA 1993
<b>Hazard Class:</b>	3
<b>Packing group:</b>	III
<b>DOT reportable quantity (lbs):</b>	Not applicable.

**TDG (Canada):**

<b>Proper shipping name:</b>	Fuel Oil, No. 4
<b>UN/identification No:</b>	NA 1993
<b>Hazard Class:</b>	3
<b>Packing group:</b>	III
<b>Regulated substances:</b>	Not applicable.

15. FEDERAL REGULATORY INFORMATION

**Federal Regulatory Information:**

**US TSCA Chemical Inventory Section 8(b):** This product and/or its components are listed on the TSCA Chemical Inventory.

**OSHA Hazard Communication Standard:** This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

**EPA Superfund Amendment & Reauthorization Act (SARA):**

**SARA Section 302:** This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Catalytic Cracked Clarified Oil	NA
No. 6 Fuel Oil	NA
Diesel Oil	NA
Petroleum Residua	NA
Sulfur Compounds	NA
Naphthalene	NA
Hydrogen Sulfide	hydrogen sulfide

**SARA Section 304:**

This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Catalytic Cracked Clarified Oil	NA
No. 6 Fuel Oil	NA
Diesel Oil	NA
Petroleum Residua	NA
Sulfur Compounds	NA
Naphthalene	= 0.454 kg final RQ = 1 lb final RQ = 100 lb final RQ = 45.4 kg final RQ
Hydrogen Sulfide	= 100 lb final RQ = 45.4 kg final RQ

**SARA Section 311/312:**

The following EPA hazard categories apply to this product:

Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard

**SARA Section 313:**

This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

Name	CERCLA/SARA 313 Emission reporting:
Catalytic Cracked Clarified Oil	None
No. 6 Fuel Oil	None
Diesel Oil	None
Petroleum Residua	None
Sulfur Compounds	None
Naphthalene	= 0.1 % de minimis concentration
Hydrogen Sulfide	None

**State and Community Right-To-Know Regulations:**

The following component(s) of this material are identified on the regulatory lists below:

**Catalytic Cracked Clarified Oil**

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed

New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
<b>No. 6 Fuel Oil</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
<b>Diesel Oil</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	[present]
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
<b>Petroleum Residua</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed

Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
<b>Sulfur Compounds</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed
<b>Naphthalene</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Listed
New Jersey Right-To-Know:	Listed
Pennsylvania Right-To-Know:	Listed
Massachusetts Right-To Know:	Listed
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Listed
Illinois - Toxic Air Contaminants	Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Listed
<b>Hydrogen Sulfide</b>	
Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1017
Pennsylvania Right-To-Know:	environmental hazard
Massachusetts Right-To Know:	Extraordinarily hazardous
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic, Flammable
Michigan critical materials register list:	Not Listed.

Massachusetts Extraordinarily Hazardous Substances:	extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1017
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 100 lbs Air RQ = 100 lbs Land/Water RQ

**Canadian Regulatory Information:**

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Diesel Oil	B3; D2B	
Naphthalene	B4, D2A	1 %
Hydrogen Sulfide	A; B1; D1A; D2B	1% (English Item 851, French Item 1550)

**16. OTHER INFORMATION**

**Additional Information:** The pronounced and easily-recognized rotten egg odor of hydrogen sulfide gas (H<sub>2</sub>S) can be detected at concentrations as low as 0.003-0.13 ppm. Since higher H<sub>2</sub>S concentrations (100-200 ppm) cause olfactory fatigue and other hydrocarbon odors can "mask" H<sub>2</sub>S, the sense of smell cannot be used as a reliable indicator of H<sub>2</sub>S exposure.

**Prepared by:** Craig M. Parker Manager, Toxicology And Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LLC (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

**End of Safety Data Sheet**