# Material Safety Data Sheet

**MSDS ID NO.:** 0137MAR019
**Revision date:** 07/25/2006

## 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

**Product name:** Marathon Anionic Emulsified Asphalt
**Synonym:** Anionic Emulsified Asphalt; AE-P; AE-PL; AE-T; AE-3; AE-60; AE-90; AE-90G; AE-150; AE-200; AE-300; EA-90; EA-150; EA-300; HFE-90; HFE-150; HFE-300; HFMS-2; HFP; HFRS-1; HFRS-2; HFRS-2P; L1P; MS-2; MS-3; MWS-90; MWS-150; MWS-300; PEA; PEP; RS-1; RS-2; RS-2L; RS-2P; RS-3; SS-1; SS-1H; SS-1HL;SS-1M; Shellycote; Shellycote Plus; Performac ™ AE Series; Performac™ HF Series; Performac™ L1P; Performac™ MS Series; Performac™ MWS Series; Performac™ PEA; Performac™ RS Series; Performac™ SS Series; Performac™ Shellycote Series
**Chemical Family:** Asphalt
**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

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

This product is an Anionic Emulsified Asphalt mixed with varying proportions of No. 2 fuel oil and/or heavy paraffinic distillate with an anionic emulsifier. May contain polymer modifiers. Composition varies depending on source of crude and specifications of final product. May contain minor amounts of sulfur, nitrogen and oxygen containing compounds.

**Product information:**

| Name | CAS Number | Weight % | ACGIH Exposure Limits: | OSHA - Vacated PELs - Time Weighted Ave | Other: |
|---|---|---|---|---|---|
| Marathon Anionic Emulsified Asphalt | Mixture | 100 | =0.5 mg/m$^3$ TWA | | |

**Component Information:**

| Name | CAS Number | Weight % | ACGIH Exposure Limits: | OSHA - Vacated PELs - Time Weighted Ave | Other: |
|---|---|---|---|---|---|
| Asphalt | 8052-42-4 | 30-80 | =0.5 mg/m³ TWA (inhalable fraction, as benzene-soluble aerosol) | | |
| Water | 7732-18-5 | 5-60 | | | |
| No. 2 Fuel Oil | 64741-44-2 | 0-40 | | | |
| Petroleum Distillates, Solvent Dewaxed Heavy Paraffinic | 64742-65-0 | 0-5 | | | Mineral Oil Mist (MOM) =5 mg/m³ TWA = 10 mg/m³ STEL |
| Sulfur Compounds | Mixture | 0-5 | | | |
| Polymer Modifier (SBS or SBR) | Mixture | 0-5 | | | |
| Anionic Emulsifier | Mixture | 0.1-4 | | | |
| 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/m³ TWA = 15 ppm STEL = 75 mg/m³ STEL | |
| Hydrogen Sulfide | 7783-06-4 | 0-0.5 | = 10 ppm TWA = 15 ppm STEL | = 10 ppm TWA = 14 mg/m³ TWA = 15 ppm STEL = 21 mg/m³ 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

EMULSIFIED ASPHALT IS A DARK BROWN TO BLACK LIQUID EMULSION. ASPHALT IS LIQUID AT 150-200 DEGREES F AND SKIN CONTACT WILL CAUSE THERMAL BURNS. WHEN HEATED THIS MATERIAL MAY VENT TOXIC LEVELS OF HYDROGEN SULFIDE (H2S) VAPORS THAT ACCUMULATE IN THE VAPOR SPACES OF STORAGE AND TRANSPORT COMPARTMENTS. H2S VAPORS CAN CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION AND ASPHYXIATION. AVOID SKIN CONTACT. LONG TERM SKIN EXPOSURE TO COMPONENTS OF THIS PRODUCT HAS CAUSED CANCER IN LABORATORY ANIMALS. THIS PRODUCT IS NEITHER A FLAMMABLE NOR COMBUSTIBLE MATERIAL PER THE OSHA HAZARD COMMUNICATION STANDARD BUT WILL BURN WHEN HEATED TO EXTREMELY HIGH TEMPERATURES.

**OSHA WARNING LABEL:**

**WARNING.**
**HOT ASPHALT**
**MAY PRODUCE SEVERE BURNS.**
**MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H2S) GAS WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION.**
**LONG-TERM SKIN EXPOSURE TO COMPONENTS OF THIS PRODUCT HAS CAUSED CANCER IN LABORATORY ANIMALS.**

**CONSUMER WARNING LABEL:**

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

**Inhalation:** Vapors and fumes can cause respiratory and nasal irritation. 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.

**Skin contact:** Hot product causes severe burns. Frequent or prolonged contact with cold material may cause irritation.

**Eye contact:** Hot product causes severe burns.

**Carcinogenic Evaluation:**

**Product information:**

| Name | IARC Carcinogens: | NTP Carcinogens: | ACGIH - Carcinogens: | OSHA - Select Carcinogens: |
|---|---|---|---|---|
| Marathon Anionic Emulsified Asphalt Mixture | NE | | | |

**Notes:** The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of extracts of steam-refined bitumens (asphalts), air-refined bitumens and pooled mixtures of steam- and air-refined bitumens in experimental animals. IARC has determined that there is inadequate evidence that bitumens alone are carcinogenic to humans.

**Component Information:**

| Name | IARC Carcinogens: | NTP Carcinogens: | ACGIH - Carcinogens: | OSHA - Select Carcinogens: |
|---|---|---|---|---|
| Asphalt 8052-42-4 | Supplement 7, 1987; Monograph 35, 1985; (extracts of steam and air refined bitumens) | | A4 - Not Classifiable as a Human Carcinogen (as benzene-soluble aerosol) | |

| | | | | |
|---|---|---|---|---|
| Naphthalene<br>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 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 carcinogeniicty to humans (Group 3A)

The International Agency for Reserch on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

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

## 4. 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:**

For contact with hot molten material, immerse or flush skin with cold water for at least 15 minutes. Call a physician. Do not attempt to remove solidified material since removal may cause further tissue injury. Cold material over a burn should not be removed except by a physician. Remove cold material (not associated with a burn) with waterless handcleaner and then wash with soap and water. If symptoms or irritation occur, call a physician.

**Ingestion:**

Ingestion not likely. If large amounts are swallowed, immediately call a physician.

**Eye contact:**

For contact with hot molten material, flush with large amounts of tepid water for at least 15 minutes. Immediately call a physician.

For contact with vapors or dust, flush with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.

**Notes to physician:**

Recommended practice is to not attempt to remove hot material associated with a burn. Allow the solidified material to remain in place until cooled so it can naturally fall off. Natural separation will occur in 48-72 hours. If removal is attempted, mineral oil may be used to remove asphalt once it is cooled. For best results, work it into the skin around the material and allow the material to "float" off.

**Medical conditions aggravated by exposure:**

Preexisting skin, eye and respiratory disorders may be aggravated by exposure to components of this product.

## 5. FIRE FIGHTING 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 (AFFT/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 is neither a flammable nor combustible material, but will burn when heated to extremely high temperatures. 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 run-off water out of sewers and water sources.

**Flash point:** >200 F
**Autoignition temperature:** No data available.
**Flammable limits in air - lower (%):** 1.0
**Flammable limits in air - upper (%):** 6.0

**NFPA rating:**
Health: 2
Flammability: 1
Reactivity: 1
Other: -

**HMIS classification:**
Health: 2
Flammability: 1
Reactivity: 1
Special: *See Section 8 for guidance in selection of personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**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.

## 7. HANDLING AND STORAGE

**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.

Significant concentrations of hydrogen sulfide (H2S) gas can be generated and accumulate in storage tanks and bulk transport compartments which may require additional precautions and procedures during loading/unloading. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized product. Stay upwind and vent open hatches before unloading. Keep heating coils and flues in storage tanks, trucks and kettles covered with product (8"). Do not overheat.

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

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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. When H2S vapors exceed permissible limits, i.e., in confined spaces or bulk transport loading/unloading, a positive-pressure atmosphere supplying respirator is recommended. Self-contained breathing apparatus should be used for fire fighting.

**Skin and body protection:** Insulated gloves when handling hot material.

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

**Hygiene measures:** Rubberized suits or coats may be needed for some maintenance operations with hot material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

| | |
|---|---|
| **Appearance:** | Black-brown Liquid Emulsion |
| **Physical state (Solid/Liquid/Gas):** | Liquid |
| **Substance type (Pure/Mixture):** | Mixture |
| **Color:** | Black-Brown |
| **Odor:** | Tar |
| **Molecular weight:** | Not determined. |
| **pH:** | Neutral |
| **Boiling point/range (5-95%):** | >212 F |
| **Melting point/range:** | 60 F |
| **Decomposition temperature:** | Not applicable. |
| **Specific gravity:** | Not determined |
| **Density:** | 7.5-8.7 lbs/gal |
| **Bulk density:** | No data available. |
| **Vapor density:** | No data available. |
| **Vapor pressure:** | Negligible @ 77 F |
| **Evaporation rate:** | No data available. |
| **Solubility:** | Negligible |
| **Solubility in other solvents:** | No data available. |
| **Partition coefficient (n-octanol/water):** | No data available. |
| **VOC content(%):** | No data available. |
| **Viscosity:** | No data available. |

## 10. STABILITY AND REACTIVITY

**Stability:** The material is stable at 70 F, 760 mm pressure.

**Polymerization:** Will not occur.

**Hazardous decomposition products:** Combustion produces toxic oxides of sulfur, carbon monoxide, sulfur dioxide, hydrogen sulfide and hydrocarbons.

**Materials to avoid:** Strong oxidizers such as nitrates, chlorates, peroxides.

**Conditions to avoid:** Excessive heat, sources of ignition, open flame.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:**

**Product information:**

| Name | CAS Number | Inhalation: | Dermal: | Oral: |
|---|---|---|---|---|
| Marathon Anionic Emulsified Asphalt | Mixture | No data available | No data available | No data available |

Some epidemiologic studies conducted on workers exposed to asphalt fume have shown no increased incidence of cancer while other studies have reported a slightly increased incidence of lung, other respiratory tract or gastrointestinal cancers. In those studies in which elevated cancer incidences were reported, concurrent or previous exposure to coal-tar products have been documented. therefore, it cannot be concluded that cancer incidence is related to exposure to asphalt fume.

Although early studies have some technical shortcomings, long term inhalation exposures to asphalt aerosols or fumes did not produce evidence of carcinogenicity even though chronic inflammatory changes similar to those produced by nonspecific respiratory irritants were observed. Inhalation of 150 $mg/m^3$ asphalt fume (particulate + vapor) 6 hours/day, 5 days/week for 13 weeks, did not produce toxicity except for reduced body weight and irritation in nasal passages in exposed rats.

Laboratory animals administered subcutaneous or intramuscular injections of asphalt preparations or repeated skin applications of hot (212 F) undiluted asphalt have occasionally produced a low incidence of skin tumors at the site of application. These findings are of questionable validity since repeated tissue trauma (and/or burns) at the application site can induce tumors. Solvent dilutions of different types of asphalts have been tested in chronic skin painting studies. Some of the studies have reported a low incidence of skin tumors. The use of diluents may enhance bioavailability or metabolic activation of chemicals in the mixture in a fashion not representative of occupational exposure. Skin painting studies in mice have been conducted using condensates from fumes generated at temperatures >450 F diluted in solvent. Asphalt fume condensate preparations have produced skin tumors. Experimental conditions (temperature and dose) were grossly exaggerated over that likely to occur in humans.

Extracts of whole asphalts tested in a modified Ames assay gave negative or slightly positive findings (mutagenicity index <1.5). Fume condensates derived from heating asphalts to high temperatures (>450 F) were moderately active (MI 4-9). Fumes generated from coal tar pitch were >1000 times more active. Asphalt fume samples collected under actual field conditions did not show any significant mutagenic activity.

Summary of health effect data on asphalt components:

This product can contain a toxicologically significant concentration of hydrogen sulfide (H2S). Hydrogen sulfide gas (H2S) is toxic by inhalation. Prolonged breathing of 50-100 ppm H2S 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 H2S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H2S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H2S, respectively. Over the years a number of acute cases of H2S 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.

This product may contain No. 2 fuel oil at a level of >1.0%. Lifetime skin painting studies in animals with similar middle distillate fuel oils and gas oils have produced tumors following prolonged and repeated skin contact. Some middle distillates and/or light gas oils, when tested at nonirritating dose levels, did not show any significant carcinogenic activity indicating that this tumorigenic response may be 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, i.e., paraffins and olefins, have been shown to produce a species specific sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Subsequent research has shown that the kidney damage develops via the formation of alpha-2u-globulin, a mechanism unique to the male rat. Humans do not form alpha-2u-globulin, therefore, the kidney effects resulting from this mechanism are not relevant in humans. Some components were found to be positive in a few mutagenicity tests while negative in the majority of 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.

This product many contain >1% highly solvent refined heavy paraffinic distillate. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** If spilled, hot product and/or the coating action of the oil components could harm plant life. This product does not concentrate or accumulate in the food chain. This product is not expected to cause any acute or chronic toxicity to aquatic organisms due to its extremely low water solubility.

## 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. TRANSPORT INFORMATION

**49 CFR 172.101:**

**DOT:**

**Transport Information:** This material when transported via US commerce is NOT REGULATED by DOT regulations.

**Packing group:** Not applicable.
**DOT reportable quantity (lbs):** Not applicable.

**TDG (Canada):**

**Packing group:** Not applicable.
**Regulated substances:** Not applicable.

## 15. 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 |
|---|---|
| Asphalt | NA |
| Water | NA |
| No. 2 Fuel Oil | NA |
| Petroleum Distillates, Solvent Dewaxed Heavy Paraffinic | NA |
| Sulfur Compounds | NA |
| Polymer Modifier (SBS or SBR) | NA |
| Anionic Emulsifier | 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 |
|---|---|
| Asphalt | NA |
| Water | NA |
| No. 2 Fuel Oil | NA |
| Petroleum Distillates, Solvent Dewaxed Heavy Paraffinic | NA |
| Sulfur Compounds | NA |
| Polymer Modifier (SBS or SBR) | NA |
| Anionic Emulsifier | NA |
| Naphthalene | = 0.454 kg final RQ<br>= 1 lb final RQ<br>= 100 lb final RQ<br>= 45.4 kg final RQ |
| Hydrogen Sulfide | = 100 lb final RQ<br>= 45.4 kg final RQ |

**SARA Section 311/312:** The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health 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: |
|---|---|
| Asphalt | None |
| Water | None |
| No. 2 Fuel Oil | None |
| Petroleum Distillates, Solvent Dewaxed Heavy Paraffinic | None |
| Sulfur Compounds | None |
| Polymer Modifier (SBS or SBR) | None |
| Anionic Emulsifier | 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:

Asphalt

| | |
|---|---|
| Louisiana Right-To-Know: | Not Listed |
| California Proposition 65: | Not Listed |
| New Jersey Right-To-Know: | sn 0170 |
| Pennsylvania Right-To-Know: | [present] |
| Massachusetts Right-To Know: | Present |
| Florida substance List: | Not Listed. |

| | |
|---|---|
| Rhode Island Right-To-Know: | Toxic, 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 |

Water

| | |
|---|---|
| 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 |

No. 2 Fuel Oil

| | |
|---|---|
| Louisiana Right-To-Know: | Not Listed |
| California Proposition 65: | Not Listed |
| New Jersey Right-To-Know: | sn 2452 |
| 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 |

Petroleum Distillates, Solvent Dewaxed Heavy Paraffinic

| | |
|---|---|
| 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 |

Sulfur Compounds

| | |
|---|---|
| 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 |

Polymer Modifier (SBS or SBR)

| | |
|---|---|
| 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 |

Anionic Emulsifier

| | |
|---|---|
| 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 |

Naphthalene

| | |
|---|---|
| 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 |

Hydrogen Sulfide

| | |
|---|---|
| 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<br>= 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: |
|---|---|---|
| Water | Uncontrolled product according to WHMIS classification criteria. | |
| 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 (H2S) can be detected at concentrations as low as 0.003-0.13 ppm. Since higher H2S concentrations (100-200 ppm) cause olfactory fatigue and other hydrocarbon odors can "mask" H2S, the sense of smell cannot be used as a reliable indicator of H2S exposure.

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**End of Safety Data Sheet**