



- 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. 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. Irritating and toxic hydrogen sulfide gas may be present. Greater than 15 - 20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50 - 500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500 ppm can cause rapid unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and successfully resuscitated. Greater than 1000 ppm can cause immediate unconsciousness and death if not promptly revived. After-effects from overexposure are not anticipated except what would be expected if the victim was without oxygen for more than 3 to 5 minutes (asphyxiation). The "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure, since olfactory fatigue (loss of smell) readily occurs, especially at concentrations above 50 ppm. At high concentrations, the victim may not even recognize the odor before becoming unconscious.
- Chronic Exposure** : Similar products produced skin cancer and skin tumors in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11, Toxicological Information. 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.
- Target Organs** : Skin, Eyes, Central nervous system

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Weight %
Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil	64741-62-4	100%
Polycyclic aromatic compounds (PACs or PNAs)		Typically 1.5%
Benzo[a]pyrene; Benzo[def]chrysene	50-32-8	Trace to 0.2%
Hydrogen Sulfide	7783-06-4	Trace to 0.2%
Sulfur	17704-34-9	Trace to 4.5%

**SECTION 4. FIRST AID MEASURES**

- Inhalation** : Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.
- Skin contact** : Take off all contaminated clothing immediately. Wash off immediately with soap

	and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
<b>Eye contact</b>	: Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
<b>Ingestion</b>	: Do NOT induce vomiting. Do not give liquids. Seek medical attention immediately. If vomiting does occur naturally, keep head below the hips to reduce the risks of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.
<b>Notes to physician</b>	: Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Liver disorders, Kidney disorders, Aspiration may cause pulmonary edema and pneumonitis.

**SECTION 5. FIRE-FIGHTING MEASURES**

<b>Form</b>	: Liquid
<b>Flash point</b>	: 65.5°C (150°F) Minimum
<b>Suitable extinguishing media</b>	: Carbon dioxide (CO2), Water spray, Dry chemical, Foam, Keep containers and surroundings cool with water spray.
<b>Specific hazards during fire fighting</b>	: 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.
<b>Special protective equipment for fire-fighters</b>	: 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.
<b>Further information</b>	: Flammable vapor production at ambient temperature in the open is expected to be minimal, as the material is generally wet. However, depending on oil content and conditions, it is possible flammable vapors could accumulate in the headspace of storage containers, presenting a flammability and explosion hazard. 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.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions</b>	: 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 contain spill areas.
<b>Environmental precautions</b>	: 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.
<b>Methods for cleaning up</b>	: Take up with sand or oil absorbing materials. Carefully vacuum, shovel, scoop or sweep up into a waste container for reclamation or disposal.

**SECTION 7. HANDLING AND STORAGE**

- Handling** : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.
  
- Advice on protection against fire and explosion** : Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:
  - (1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.
  - (2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).
  - (3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).
  
- Dust explosion class** : Not applicable
  
- Requirements for storage areas and containers** : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". 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".
 

Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapors when opening hatches and dome covers. Confined spaces should be ventilated and gas tested prior to entry.
  
- Advice on common storage** : Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.
  
- Other data** : No decomposition if stored and applied as directed.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines**

List	Components	CAS-No.	Type:	Value
OSHA	Polycyclic aromatic compounds (or coal tar pitch volatiles – benzene soluble)		PEL	0.2 mg/m3
	Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil	64741-62-4	PEL	5 mg/m3 (as mineral oil mist)

	Hydrogen Sulfide	7783-06-4	STEL	20 ppm
<b>ACGIH</b>	Hydrogen Sulfide	7783-06-4	TWA	1 ppm
		7783-06-4	STEL	5 ppm
	Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil	64741-62-4	TWA	0.2 mg/m <sup>3</sup> (as mineral oil) Sum of 15 NTP-listed polynuclear aromatic hydrocarbons 0.005 mg/m <sup>3</sup>
	Polycyclic aromatic compounds (or coal tar pitch volatiles – benzene soluble)		TWA	0.2 mg/m <sup>3</sup>

- Engineering measures** : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.
- Eye protection** : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.
- Hand protection** : Gloves constructed of nitrile, neoprene, or PVC are recommended.
- Skin and body protection** : Chemical protective clothing such as DuPont Tyvek QC, TyChem® or equivalent, recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.
- Respiratory protection** : If hydrogen sulfide concentration may exceed permissible exposure limit, a positive-pressure SCBA or Type C supplied air respirator with escape bottle is required as respiratory protection. If hydrogen sulfide concentration is below H<sub>2</sub>S permissible exposure limit a NIOSH/ MSHA-approved air-purifying respirator with acid gas cartridges may be acceptable for odor control, but continuous air monitoring for H<sub>2</sub>S is recommended. Protection provided by air-purifying respirators is limited. Use a NIOSH/ MSHA-approved positive-pressure supplied-air 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. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.
- Work / Hygiene 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 solvents or harsh abrasive skin cleaners 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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Form** : Liquid
- Appearance** : Dark brown to black

<b>Odor</b>	: Petroleum asphalt odor
<b>Flash point</b>	: 65.5 °C (150 °F) Minimum
<b>Thermal decomposition</b>	: No decomposition if stored and applied as directed.
<b>pH</b>	: Not applicable
<b>Boiling point</b>	: 343 - 538 °C(649 - 1,000 °F)
<b>Vapor Pressure</b>	: 1.33 hPa at 37.78 °C (100.00 °F)
<b>Density</b>	: 1.01 - 1.1 g/cm3
<b>Water solubility</b>	: Insoluble
<b>Percent Volatiles</b>	: 100 %
<b>Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)</b>	Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to avoid</b>	: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers.
<b>Materials to avoid</b>	: Strong oxidizing agents. Peroxides.
<b>Hazardous decomposition products</b>	: Carbon monoxide, carbon dioxide and noncombusted hydrocarbons (smoke).
<b>Thermal decomposition</b>	: No decomposition if stored and applied as directed.
<b>Hazardous reactions</b>	: Keep away from oxidizing agents, and acidic or alkaline products.

**SECTION 11. TOXICOLOGICAL INFORMATION**

<b><u>Carcinogenicity</u></b>	
<b>NTP</b>	: Benzo[a]pyrene; Benzo[def]chrysene (CAS-No.: 50-32-8)
<b>IARC</b>	: Benzo[a]pyrene; Benzo[def]chrysene (CAS-No.: 50-32-8)
<b>OSHA</b>	: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>CA Prop 65</b>	: WARNING! This product contains a chemical known to the State of California to cause cancer. Benzo[a]pyrene; Benzo[def]chrysene (CAS-No.: 50-32-8)
<b>Skin irritation</b>	: Irritating to skin.
<b>Eye irritation</b>	: Irritating to eyes.
<b>Further information</b>	: This material contains polynuclear aromatic hydrocarbons (PNAs), some of which are animal carcinogens. Studies have shown that similar products produce skin cancer or 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. Dermal application of gas oil to rats resulted in limited evidence of liver damage (i.e., increased liver weight and changes in hepatic serum enzyme activity) and bone marrow toxicity (hypoplasia and decreased hemoglobin.) Liver and kidney injuries may occur. Components of the product may affect the nervous system.

**Component:**

**Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil** 64741-62-4

Acute oral toxicity: LD50 rat  
Dose: 4,320 mg/kg

Acute dermal toxicity: LD50 rabbit  
Dose: 2,001 mg/kg

Skin irritation: Classification: Irritating to skin.  
Result: Mild skin irritation

Eye irritation: Classification: Irritating to eyes.  
Result: Mild eye irritation

Carcinogenicity: Animal experiments showed a statistically significant number of tumors.

**SECTION 12. ECOLOGICAL INFORMATION**

**Additional ecological information** : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal** : Consult federal, state and local waste regulations to determine appropriate waste characterization of material and allowable disposal methods.

**SECTION 14. TRANSPORT INFORMATION**

**CFR**

Proper shipping name : Not regulated if shipped below 140 °F (60 °C)  
Elevated temperature liquid, flammable (if shipped above 140 °F (60 °C)).

UN-No. : Not regulated if shipped below 140 °F (60 °C)  
3256 if shipped above 140 °F (60 °C)

Class : 9

Packing group : III

Hazard inducer : (Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil)

**TDG**

Proper shipping name : Not regulated if shipped below 140°F (60°C)  
 Elevated temperature liquid, flammable (if shipped above 140°F (60°C)).

UN-No. : Not regulated if shipped below 140°F (60°C)  
 3256 if shipped above 140°F (60°C)

Class : 9

Packing group : III

Hazard inducer : (Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil)

**IATA Cargo Transport**

UN-No. : Not regulated if shipped below 140°F (60°C)  
 3256 if shipped above 140°F (60°C)

Class : Not regulated if shipped below 140°F (60°C)  
 Not permitted for transport (at 140°F (60°C) or higher temperature)  
 9

**IATA Passenger Transport**

UN-No. : Not regulated if shipped below 140°F (60°C)  
 3256 if shipped above 140°F (60°C)

Class : Not regulated if shipped below 140°F (60°C)  
 Not permitted for transport (at 140°F (60°C) or higher temperature)  
 9

**IMDG-Code**

UN-No. : Not regulated if shipped below 140°F (60°C)  
 3256 if shipped above 140°F (60°C)

Description of the goods : Elevated temperature liquid, n.o.s.  
 (Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil)

Class :  
 Not regulated if shipped below 140°F (60°C)  
 Not permitted for transport (at 140°F (60°C) or higher temperature)  
 9

Packaging group : III

IMDG-Labels : 9

EmS Number : F-A S-P

Marine pollutant : No

**SECTION 15. REGULATORY INFORMATION**

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

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

OSHA Hazards : Combustible Liquid  
 Moderate skin irritant  
 Moderate eye irritant  
 Probable carcinogen

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard  
 Acute Health Hazard

**Chronic Health Hazard**

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

<u>Components</u>	<u>CAS-No.</u>
<b>Benzo[a]pyrene; Benzo[def]chrysene</b>	50-32-8

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR355, Appendix A)

<u>Components</u>	<u>CAS-No.</u>
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PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<u>Components</u>	<u>CAS-No.</u>
<b>Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil</b>	64741-62-4
<b>Benzo[a]pyrene; Benzo[def]chrysene</b>	50-32-8

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<u>Components</u>	<u>CAS-No.</u>
<b>Benzo[a]pyrene; Benzo[def]chrysene</b>	50-32-8

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<u>Components</u>	<u>CAS-No.</u>
<b>Clarified oils (petroleum), catalytic cracked; Heavy Fuel oil</b>	64741-62-4
<b>Benzo[a]pyrene; Benzo[def]chrysene</b>	50-32-8

California Prop. 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.  
 Benzo[a]pyrene; 50-32-8  
 Benzo[def]chrysene

**SECTION 16. OTHER INFORMATION**

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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