

Section 1: Product and Company Identification

Manufacturer: Kern Energy – 7724 East Panama Lane – Bakersfield – CA 93307-9210
(661) 845-0761 – sds@KernEnergy.com – www.KernEnergy.com

Chemical Name: Biodiesel
Chemical Family: Aliphatic and Aromatic Hydrocarbons
Trade Name: Biodiesel
Synonyms: Biodiesel
Recommended Uses: Diesel Fuel
CAS #: 68476-34-6 and 67762-26-9
RTECS #: None
SDS Number: KOR060
SDS Date: September 30, 2022

CHEMTREC (800) 424-9300
or (703) 527-3887
POISON CONTROL CENTER
(800) 346-5922

Section 2: Hazard Identification

Signal Word: **DANGER**

Pictograms: Flame - Health Hazard – Exclamation Mark



Physical Hazards: Flammable Liquids – Category 3 - Flammable liquid and vapor.

Health Hazards: Acute Toxicity, Inhalation - Category 4 - Harmful if inhaled.
Skin Corrosion/Irritation – Category 2 - Causes skin irritation.
Eye Damage/Irritation – Category 2B - Causes eye irritation.
Carcinogenicity - Category 2 - Suspected of causing cancer.
Germ Cell Mutagenicity – Category 1 – May cause genetic defects.
Specific Target Organ Toxicity (Single Exposure) – Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1 - May be fatal if swallowed and enters airways.

Environmental Hazards: Acute Aquatic Toxicity – Category 3 - Harmful to aquatic life with long lasting effects

Precautionary Statements:

Prevention: Keep away from heat, sparks, open flames and hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear eye and face protection. Avoid breathing fumes or mist. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Wear protective gloves or clothing. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response: **In case of fire:** Use dry chemical, foam or water fog to extinguish. Do not use direct water stream. **If inhaled:** Remove person to fresh air and keep comfortable for breathing. Seek medical attention if you feel unwell. **If on skin:** Wash with plenty of water. See First Aid on this label for specific treatment. If skin irritation occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. **If exposed or concerned:** Get medical advice/attention. Manufacturer/Supplier or competent authority to select medical advice or attention as appropriate. Immediately get medical attention. Do NOT induce vomiting. **Collect spillage.**

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/containers in accordance with local, state and national regulations.

HNOC:* None Known

Supplemental Info: CERCLA Rating: (Scale 0-3) Health = 3, Fire = 2, Reactivity = 0, Persistence = 1
 NFPA Rating: (Scale 0-4) Health = 1, Fire = 2, Reactivity = 0
 HMIS Rating: Fire 2, Health 1, Physical 0, Chronic

* Hazard(s) not otherwise classified or not covered by GHS.

Section 3: Composition / Information on Ingredients

Component	CAS No.	Percent
Diesel Fuel No. 2	68476-34-6	80-94
Methyl Esters, Biodiesel	67762-26-9	6-20
2-Ethylhexyl Nitrate	27247-96-7	0.2

This product is a blend of petroleum-derived diesel fuel and Biodiesel B-99.9 where the percentage of biodiesel blended into the final product is indicated as B% - for example, B6 is 6% biodiesel and B20 is 20% biodiesel. Petroleum diesel fuel is a complex mixture of hydrocarbons with carbon numbers in the range of C9 and higher produced from the distillation of petroleum crude oil. Biodiesel consists of animal- and/or plant-derived methyl esters.

Section 4: First Aid Measures

Eye Contact: Immediately flush eyes with water for at least 15 minutes. Get medical attention if irritation persists.

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

Ingestion: Get medical attention immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. Careful evacuation of stomach by medical personnel imperative.

Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get immediate medical attention.

NOTE TO PHYSICIANS: Vomiting may cause aspiration of this product, which may result in pneumonitis.

Section 5: Fire Fighting Measures

Small Fire: Dry chemical, CO₂, water spray or foam.

Large Fires:

- Water spray, fog or foam.
- Use water spray or fog, do not use straight streams.
- Move containers from fire area if you can do it without risk.

Fire Involving Tanks or Tank Car / Truck Trailer Loads:

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzle.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of hissing sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fires, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Fire Fighting Equipment/Instructions: Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other firefighting 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 face piece 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 large 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 firefighting foam.

Special protective equipment for fire-fighters: Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.

Further information: Vapors may form explosive mixture with air. Flammable vapor production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. When heated above flash point and mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. 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 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.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Section 6: Accidental Release Measures

Recovery and Neutralization: Carefully contain and stop the source of the spill, if safe to do so. Eliminate any source of ignition near the spill and the associated vapors. Stop all work in vicinity and remove personnel immediately. Monitor release area with a combustible gas detection device.

Materials and Methods for Clean-Up: Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Do not flush to sewer. Prevent the contamination of soil, surface waters, and groundwater. Wear appropriate personal protective equipment. Assure all equipment used in the clean-up effort is grounded. Use non-sparking tools only. Fire suppression foam may be used to reduce vapors. Remove and properly dispose of contaminated soils using approved containers in compliance with local regulations. 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. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Environmental Precautions: 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. Report spills to local authorities. If appropriate or required, report spills to the US Coast Guard National Response Center (800) 424-8802. EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 101(14) - Petroleum Exclusion - excludes crude oil and fractions of crude oil - including the hazardous substances, such as benzene, that are indigenous in those petroleum substances.

Section 7: Handling and Storage

Handling Procedures: Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this product is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures: Keep containers closed and clearly labeled. Use approved vented storage containers. 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."

Incompatibilities: Keep away from strong oxidizers.

Unusual Hazards: This product should not be used in portable heating devices. Toxic fumes may accumulate and cause death.

Static Electricity Hazard: Static electricity charges may accumulate and present a hazardous condition while handling this material. Ground and bond containers when transferring materials. Perform a Job Safety Analysis and train all persons involved in operations that have the potential to generate static charges or flammable vapors. Implement proper mitigation techniques. Improper filling of portable containers presents the risk of fire. Only fill containers on the ground. Do not fill containers that are inside a vehicle or truck/trailer bed. For additional information refer to: OSHA Standard 29 CFR 1910.106 – "Flammable and Combustible Liquids" Cal OSHA CCR Title 8 – General Industry Safety Orders, Group 20 – "Flammable Liquids, Gases, and Vapors" NFPA 77 – "Recommended Practices on Static Electricity" American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents"

Section 8: Exposure Control and Personal Protection

Component Exposure Limits:

Fuel oil No. 2 (68476-30-2)

ACGIH: 0.2 mg/m³ TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)

Skin - potential significant contribution to overall exposure by the cutaneous route.

Naphthalene (91-20-3)

ACGIH: 10 ppm TWA 15 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route

OSHA: 10 ppm TWA; 50 mg/m³ TWA

NIOSH: 10 ppm TWA; 50 mg/m³ TWA 15 ppm STEL; 75 mg/m³ STEL

Methyl Esters, Biodiesel (67762-26-9)

There are no OSHA PELs, ACGIH TLVs, or NIOSH RELs for this component.

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

Personal Protective Equipment

Respiratory: A 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. 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.

Hands: Gloves constructed of nitrile, neoprene, or PVC are recommended.

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

Skin and Body: Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® 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.

Section 9: Physical and Chemical Properties

Appearance:	Straw, amber, or light brown colored liquid.
Odor:	Mild, petroleum distillate and animal fat odor
Physical State:	Liquid
pH:	Not Determined
Vapor Pressure:	0.009 psia @70°F (21°C)
Vapor Density:	>1.0
Volatility (Vol. %):	100
Viscosity (SSU@ 100°F):	32.8–39.3 Pour Point: -5°F
Boiling Point/Range:	325-690°F (171-371°C)
Melting Point:	NA
Solubility (H2O):	Negligible
Specific Gravity:	0.86
API Gravity:	33.0
Evaporation Rate:	< BuAc
Flash Point:	130-168°F
Flammability Limit:	UFL: 7.5 LFL: 0.6
Auto Ignition:	494°F (257°C)

Section 10: Stability and Reactivity

Chemical Stability: This is a stable material. This product is considered stable during handling and storage under normal ambient conditions of pressure and temperature.

Hazardous Reaction Potential: Will not occur.

Conditions to Avoid: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products: Keep away from strong acids and oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Burning produces carbon dioxide and carbon monoxide. May release acrid smoke and irritating fumes.

Hazardous Polymerization: Hazardous polymerization will not occur.

Section 11: Toxicological Information
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Component Acute Toxicity:

Fuel oil No. 2 (68476-30-2)

Oral LD50 Rat 12 g/kg;

Dermal LD50 Rabbit 4720 µL/kg; dermal LD50 Rabbit >2000 mg/kg;

Inhalation LC50 Rat 4.6 mg/L 4 h.

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m³ 1 h;

Oral LD50 Rat 490 mg/kg;

Dermal LD50 Rat >2500 mg/kg; LD50 Rabbit >20 g/kg.

Potential Health Effects:

Skin Corrosion: Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Contact with eyes may cause mild irritation.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Inhalation: Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. 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.

Respiratory Organs Sensitization/Skin Sensitization: This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity: This product is not reported to have any mutagenic effects. Material of similar composition has been positive in a mutagenicity study.

Carcinogenicity: Mixture: Suspected of causing cancer. **Dermal carcinogenicity:** positive – mice: 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. This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A) and NIOSH regards it as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

Component Carcinogenicity Fuel oil No. 2 (68476-30-2) ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel) Naphthalene (91-20-3) ACGIH: A4 - Not Classifiable as a Human carcinogen NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen) IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans)).

Reproductive Toxicity: This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure: This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure: This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Section 12: Ecological Information

Ecotoxicity

General Product Information: Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component Analysis: Fuel oil No. 2 (68476-30-2) Test & Species Conditions 96 Hr. LC50 Pimephales promelas 35 mg/L [flow-through] Naphthalene (91-20-3) Test & Species Conditions 96 Hr. LC50 Pimephales promelas 5.74-6.44 mg/L [flow-through] 96 Hr. LC50 Oncorhynchus mykiss 1.6 mg/L [flow-through] 96 Hr. LC50 Oncorhynchus mykiss 0.91-2.82 mg/L [static] 96 Hr. LC50 Pimephales promelas 1.99 mg/L [static] 96 Hr. LC50 Lepomis macrochirus 31.0265 mg/L [static] 72 Hr. EC50 Skeletonema costatum 0.4 mg/L 48 Hr. LC50 Daphnia magna 2.16 mg/L 48 Hr. EC50 Daphnia magna 1.96 mg/L [Flow through] 48 Hr. EC50 Daphnia magna 1.09 - 3.4 mg/L [Static] Persistence/Degradability No information available.

Bioaccumulation: No information available.

Mobility in Soil: No information available.

Section 13: Disposal Considerations
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Waste Disposal Instructions: See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. Recycle unused material. This product may meet the definition of a hazardous waste under RCRA (40 CFR 261) or definitions of a hazardous waste by State or local regulation. Analysis of the waste generated must be tested to correctly categorize the material for disposal. If this product meets the definition of a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Disposal of Contaminated Containers or Packaging: Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14: Transportation Information

	DOMESTIC	INTERNATIONAL
DOT SHIPPING NAME:	Diesel Fuel	Diesel Fuel
DOT HAZARD CLASS:	3 – Flammable Liquid	3 – Flammable Liquid
DOT IDENTIFICATION NUMBER:	NA 1993	UN 1202
DOT PACKING GROUP:	III	III

Section 15: Regulatory Information

OSHA – This material is classified as hazardous under OSHA regulations.

SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4): This material contains one or more of the following chemicals required to be identified under SARA 313: 0.1 % de minimis concentration: Naphthalene (91-20-3) CERCLA: 100 lb. final RQ; 45.4 kg final RQ.

SARA 311/312 - Hazard Classes

- | | |
|--------------------------------------|-----|
| 1. Immediate (acute) health effects: | Yes |
| 2. Delayed (chronic) health effects: | Yes |
| 3. Fire Hazard: | Yes |
| 4. Sudden Release of Pressure: | No |
| 5. Reactivity Hazard: | No |

State Regulations: The following components appear on one or more of the following state hazardous substances lists: Naphthalene (91-20-3) CA, MA, MN, NJ, PA.

CALIFORNIA PROPOSITION 65 WARNING: Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in crude oil and petroleum products. Although it is possible to sufficiently refine a crude oil or its end products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling crude oil and petroleum products.

Canada:

WHMIS IDL: No components are listed in the WHMIS IDL.

Section 16: Other Information

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, Kern Energy (Kern) 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 may be required. Kern assumes no responsibility for results obtained or for incidental or consequential, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.