

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: Mixture of Petroleum Hydrocarbons
Chemical Family: Aliphatic and Aromatic Hydrocarbons
Trade Name: Atmospheric Gas Oil (AGO)
Generic Name: Atmospheric Gas Oil
Synonyms: Marine Diesel, No. 4 Diesel Fuel
Recommended Uses: Marine Fuel
CAS #: 64741-44-2
RTECS #: LX3296000
SDS Number: KOP032
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 – Environment



Physical Hazards: Flammable Liquids (Category 3) Flammable liquid and vapor.

Health Hazards: Skin Irritation (Category 2) Causes skin irritation.
Eye Irritation (Category 2B) Causes eye irritation.
Carcinogenicity (Category 2) Suspected of causing cancer.
Specific Target Organ Toxicity - Single Exposure (Category 3) May cause respiratory irritation. May cause drowsiness or dizziness.
Aspiration Hazard (Category 1) May be fatal if swallowed and enters airways.

Environmental Hazards: Chronic Aquatic Toxicity – Category 2 Toxic 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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/gas/fume/mist/vapors/spray. Use only outdoors or in a well-ventilated area. 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. Avoid release to the environment.

Response: **In case of fire:** Use dry chemical, foam or water fog to extinguish. Do not use direct water stream. **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 swallowed:** Immediately get medical attention. Do NOT induce vomiting. **If exposed or concerned:** Get medical advice/attention. Manufacturer/Supplier or competent authority to select medical advice or attention as appropriate. **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Manufacturer/supplier or the competent authority to specify the appropriate source of emergency medical advice. **Collect spillage.**

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

Disposal Recycle unused material. Dispose of contents/container in accordance with local / regional / national / international 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 |
|------------------|------------|---------|
| Gas Oil | 64741-44-2 | 100 |
| Mineral Oil Mist | 8012-95-1 | 0-1 |

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 is 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: If employees are expected to fight fires they must be trained and equipped as stated in the OSHA Fire Brigades Standard (29 CFR 1910.156). 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: See Table 1. AGO is harmful by inhalation and by skin contact. Inhalation can cause dizziness, lightheadedness, and passing out. Contact can irritate both the skin and eyes.

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.

| Table 1 – Component Exposure Limits | | | | | | |
|-------------------------------------|------------------|------------|--|------|---------------------|----------|
| Percent Max Vol % | Component | CAS # | Recommended Exposure Limits - ppm (mg/m ³) | | | |
| | | | 8 HR TWA | STEL | CEILING | * Agency |
| 100% | Gas Oil | 64741-44-2 | -- | -- | -- | |
| | Mineral Oil Mist | 8012-95-1 | 5mg/m ³ | -- | -- | O |
| | | | 5mg/m ³ | -- | 10mg/m ³ | N |

* O = OSHA, C = Cal / OSHA, N = NIOSH

Section 9: Physical and Chemical Properties

General Information:

Physical State: Liquid

Form: Liquid

Color: Clear, Colorless to Light Straw

Odor: Strong, Characteristic

Important Health, Safety and Environment Information:

Boiling Point/Range: 350-500°F

Flash Point: 190-210°F

Auto Ignition Temp: 410°F

Lower Flammability Limit: 1%

Upper Flammability Limit: 6%

Vapor Pressure (mm Hg@100°F): 5

Vapor Density: Heavier than air

Freezing Point/Melting Point: NA

Solubility (Water): Negligible

Specific Gravity: 0.83-0.85

Evaporation Rate: Slower than BuAc

Viscosity (SSU@ 100°F): 2

pH: NA

Other Information:

Volatility: 100% Vol.

Pour Point: NA

API Gravity: 36-38

Note: Physical Data is typical values based on material tested, but may vary based on composition. Values should not be accepted as guaranteed for every lot or as specifications for this product.

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. This material is a fire and explosion hazard and may be ignited by ignition sources under almost all conditions. Vapors may travel to ignition source and flash back. Containers may explode in fire. Vapor explosion hazard indoors, outdoors or in sewers. Empty containers retain flammable and explosive vapors.

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: 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

Potential Health Effects: Acute Toxicity: Oral Rabbit LD50: 2,835 mg/kg Remarks: Behavioral: Muscle weakness. Lungs, Thorax, or Respiration: Respiratory stimulation. Endocrine: Hypoglycemia.

| Table 2 – Potential Health Effects | | | |
|--|---|---|---|
| | Route/Organism | Dose | Effect |
| EYE EFFECT: | Eye / Man | 500 ppm/1 hour | Moderate |
| SKIN EFFECT: | Parenteral / Man | lowest published toxic dose: 53 mg/kg | Skin: After systemic exposure: Skin tumors |
| ACUTE ORAL EFFECT: | Oral / Rat | lowest published toxic dose: 1,500 mg/kg/3 day- intermittent | Kidney, Ureter, and Bladder: Other changes in urine composition |
| ACUTE INHALATION EFFECT: | Inhalation / Man | lowest published toxic concentration: 900 ppm/1 hour | Eye: Conjunctiva irritation Behavioral: Hallucinations, distorted perceptions Lung, Thorax, or Respiration: Cough |
| CHRONIC EFFECTS/ CARCINOGENICITY: | IARC has determined that the exhaust from diesel engines is most likely carcinogenic. (IARC Class – 2A) NIOSH recommends whole diesel exhaust be regarded as a potential occupational carcinogen. | | |
| MUTAGENICITY: | N/R | N/R | N/R |

Inhalation: Central nervous system depressant. May cause headaches and irritation to the nose, throat, and lungs.

Ingestion: May cause irritation and burning of the gastrointestinal tract (mouth, throat, and stomach.) May cause nausea, vomiting, diarrhea, and restlessness.

Skin Contact: May cause irritation, drying, and cracking of the skin. May cause dermatitis.

Eye Contact: Irritation of the eye.

Chronic Exposure: The most common health effect associated with chronic kerosene exposure is dermatitis.

Additional Toxicological Information: Section 2.

Carcinogenicity: Possible human carcinogen. Kerosene generally contains benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International agency for Research on Cancer and the Occupational Safety and Health Administration.

Reproductive Toxicity: Exposure of pregnant rats during gestation to toluene at levels of 250 ppm and higher produces some maternal toxicity and fetotoxicity.

Specific Target Organ Toxicity - Single Exposure: Section 2.

Specific Target Organ Toxicity - Repeated Exposure: No data available.

Section 12: Ecological Information

Ecotoxicity: The American Petroleum Institute (API) * concludes that adequate data regarding the ecotoxicity of kerosene and jet fuels are available to demonstrate moderate acute toxicity to aquatic organisms.

Persistence and Degradability: According to API *, generally, kerosene/jet fuel components biodegrade significantly under aerobic conditions provided sufficient nutrients are present for conversion of the hydrocarbons to microbial biomass.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other adverse effects: No information available.

* Kerosene / Jet Fuel Category Assessment Document submitted to the US EPA: September 21, 2010

Section 13: Disposal Considerations

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

| | |
|-----------------------------------|--|
| DOT SHIPPING NAME: | Atmospheric Gas Oil (AGO) |
| DOT HAZARD CLASS: | 3 – Flammable Liquid, Marine Pollutant |
| DOT IDENTIFICATION NUMBER: | UN 1268 |
| DOT PACKING GROUP: | III |

Section 15: Regulatory Information

IRS- This product may be dyed red for tax exempt identification purposes.

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: State Right-to-Know: MA MI NJ PA – Benzene (CAS 71-43-2).

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.

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.