Kern Oil & Refining Co.

Material Safety Data Sheet
K-1 Kerosene
KOP005

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:	K-1 Kerosene	Trade Name:	Kerosene
MSDS Number:	KOP005	Generic Name:	Kerosene
Synonyms:	White Kerosene, Kerosene, Kerosine, Straight-Run Kerosene	Chemical Name:	Mixture of petroleum hydrocarbons
		Chemical Family:	Aliphatic and aromatic hydrocarbons mixture
Manufacturer's Address:	Kern Oil & Refining Co. 7724 East Panama Lane Bakersfield, CA 93307-9210 (661) 845-0761	CAS # RTECS #	64742-47-8 OA5504000
Poison Control Center:	(800) 346-5922		
CHEMTREC:	(800) 424-9300 or (703) 527-3887		
CERCLA Rating:	(Scale 0-3) Health = 0 Fire = 2 Reactivity = 0 Persistence = 1		
NFPA Rating:	(Scale 0-4) Health = 0 Fire = 2 Reactivity = 0		

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	Concentration	Component
64742-47-8	100% volume	Kerosene, hydrotreated

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DESCRIPTION: A colorless petroleum liquid with a strong, characteristic odor

HEALTH HAZARDS: The substance is moderately irritating to the eyes and the skin. Inhalation of vapors of this substance may cause irritation of the eyes and upper respiratory tract. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system. Exposure to high concentration of vapors may result in unconsciousness.

PHYSICAL HAZARDS: This material is flammable and generates vapors which are heavier than air. Vapors may travel across the ground and reach a remote ignition source, causing a flashback fire hazard.

POTENTIAL HEALTH EFECTS:

CERCLA Rating: (Scale 0-3) **Health = 0 Persistence = 1** **NFPA Rating:** (Scale 0-4) **Health = 1**

EYE: Eye contact with this product causes mild irritation and redness.

SKIN: Contact with the skin causes irritation. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: May cause nausea, vomiting, diarrhea, and abdominal pain. Aspiration into lungs as a result of vomiting may cause lung and digestive system damage and central nervous system depression.

INHALATION: Can cause central nervous system depression (including unconsciousness), cough, sore throat, headache, nausea, fatigue, dizziness, and confusion.

SECTION 4: FIRST AID MEASURES

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

SKIN: Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and shoes.

INGESTION: Get medical attention immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person.

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

FIRE CLASSIFICATION: Class II Combustible Liquid **NFPA Rating:** (Scale 0-4) Fire = 2

FLAMMABILITY PROPERTIES:

Auto Ignition Temperature:	495°F
Flash Point Temperature:	140°F
Flammability Limits:	(% volume in air) Lower 0.7% Upper 5.0%

FIRE/EXPLOSION HAZARD: This material is a fire and explosion hazard and may be ignited by ignition sources under almost all conditions. Above 100°F explosive vapor/air mixtures may be formed. Above 100°F use a closed system, intrinsically safe electrical equipment. Prevent buildup of electrostatic charges (e.g., by grounding). 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.

COMBUSTION PRODUCTS: Hazardous decomposition products by fire: Carbon dioxide, carbon monoxide.

FIRE FIGHTING PROCEDURES: Wear protective equipment and clothing when fighting fires, including a self-contained breathing apparatus for fires in enclosed spaces. Use water spray to cool fire-exposed containers, to dilute and disperse vapors, protect personnel, and to flush spills from fire.

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, and water spray.

Small Fire: Dry chemical, CO_2, water fog, foam.

Large Fires:

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

Fire Involving Tanks or Tank Car/Truck Trailer Loads:

- Fight fire from a maximum distance or use unmanned hose holders or monitor nozzles.
- 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 the area and let the fire burn.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Protective Measures: In the event of a release, 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.

Spill Management: Do not flush to sewer. Control source of leak if it does not place personnel at risk. Control extent of spill using berms or absorbent materials in order to 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. This substance may be hazardous to the environment; special attention should be given to water.

Reporting: Report spills to local authorities. If appropriate or required, report spills to the US Coast Guard National Response Center (800) 424-8802. EPAs 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: Remove contaminated clothing and bag for proper disposal. Follow all MSDS/label precautions even after containers are empty because they contain product residues. Do not pressurize, cut, grind, weld, braze, solder, drill, or expose empty containers to heat sparks, static electricity, or sources of ignition. They may explode and cause injury or death. Empty storage containers should be completely drained, properly sealed and promptly returned to a container reconditioner, or properly disposed as per local regulations.

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

STORAGE: Contents are flammable. Do not store or use this product near sources of ignition, heat, or sparks. Use only in a well ventilated area. Store product in approved, properly labeled containers.

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"
- CalOSHA 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 CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT: A respiratory protection program that meets and conforms with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

EYE/FACE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield if there is potential for splashing.

SKIN PROTECTION: The glove(s) listed below may provide protection against permeation.

- Nitrile
- Viton
- Neoprene

Gloves of other chemically resistant materials may not provide adequate protection. An eye wash and drench shower facility should be available

RESPIRATORY PROTECTION: A NIOSH-approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where air-purifying respirators may not provide adequate protection

GENERAL HYGIENE CONSIDERATIONS: Where contact from splashing is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

EXPOSURE GUIDELINES:

Percent	Component	CAS #	Recommended Exposure Limits			
			10 HR TWA	STEL	CEILING	*Agency
100%	Kerosene, hydrotreated	64742-47-8	100 Mg/m^3	--	--	N OSHA PEL-None established

* O= OSHA C= CalOSHA N= NIOSH A=ACGIH

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: A colorless petroleum liquid with a strong, characteristic odor

SOLUBILITY:	Negligible (Water)	**MELTING POINT:**	N/A
SPECIFIC GRAVITY:	0.8353	**BOILING POINT/RANGE:**	370 - 520° F
API GRAVITY:	37.9	**VAPOR PRESSURE:**	0.5 mmHg @ 20° C
VAPOR DENSITY:	Heavier than air	**% VOLATILE BY VOLUME:**	100%
EVAPORATION RATE:	Slower than BuAc		

SECTION10: STABILITY AND REACTIVITY

NFPA Rating: (Scale 0-4) **Reactivity = 0**

STABILITY: This product is considered stable during handling and storage under normal ambient conditions of pressure and temperature.

CONDITIONS TO AVOID: Transfer of this product near open flames, sparks, or static electricity.

MATERIALS TO AVOID (INCOMPATIBILITY): Reacts vigorously with strong acids and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Burning produces carbon dioxide and carbon monoxide. May release smoke and irritating fumes.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

	ROUTE/ORGANISM	DOSE	EFFECT
SKIN/EYE IRRITATION	Skin/rabbit	1,00%/24 hour	Moderate
ACUTE TOXICITY DATA	Intravenous / Man	Lowest published toxic dose: 403 mg/kg	**Behavioral:** Somnolence (general depressed activity), hallucinations, distorted perceptions.
	Oral / Man	Lowest published toxic dose: 3,570 mg/kg	**Lung, Thorax, or respiration:** cough **Gastrointestinal:** Nausea or vomiting **Nutritional and Gross Metabolic:** Body temperature increase
MULTIPLE DOSE DATA	Inhalation / Human	Lowest published toxic concentration: 250 mg/m^3/4 year-intermittent	**Behavioral:** Excitement **Behavioral:** Irritability
MUTAGENICITY: Mutations in microorganisms	Salmonella typhimurium	25 µL/plate (+enzymatic activation step)	N/A
REPRODUCTIVE	N/R	N/R	N/R
CHRONIC EFFECTS/ CARCINOGENICITY:	There is inadequate evidence for carcinogenicity in humans from Kerosene. The product is not listed by NTP or OSHA as a carcinogen. IARC: Limited animal evidence. Exhaust is a potential.		

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: This substance may be hazardous to the environment; special attention should be given to water.

ENVIRONMENTAL FATE: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

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.

SECTION 14: TRANSPORTATION INFORMATION

DOT SHIPPING NAME: Kerosene
DOT HAZARD CLASS: 3
DOT IDENTIFICATION NUMBER: UN1223
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 311/312

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

Regulatory Listed Components: None

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

This document was prepared according to ANSI Z400.1-1998 – "American National Standard for Hazardous Industrial Chemicals – Material Safety Data Sheets – Preparation", OSHA Hazard Communication Standard (29 CFR 1910.1200) and CalOSHA CCR Title 8 – 5194 Hazard Communication.

The information found in this document is based on data available at the time of the MSDS generation and the information provided by Kern Oil & Refining Co. The authors believe the information to be correct and have based this MSDS on data available at the time. The authors cannot foresee the conditions under which the MSDS information may be used and the person interpreting this information is solely responsible for determining the suitability for the chosen application and assumes any inherent risks.