Material Safety Data Sheet

1. Chemical product and company identification

Product name	1-K KEROSENE, LS
MSDS #	10925
Historic MSDS #:	None.
Code	10925
Product use	Fuel.
Supplier	BP Products North America Inc. 150 West Warrenville Road Naperville, Illinois 60563-8460 USA
EMERGENCY HEALTH INFORMATION:	1 (800) 447-8735 Outside the US: +1 703-527-3887 (CHEMTREC)
EMERGENCY SPILL INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)
OTHER PRODUCT INFORMATION	1 (866) 4 BP - MSDS (866-427-6737 Toll Free - North America) email: bpcares@bp.com

2. Composition/information on ingredients

Ingredient name	CAS #	% by weight
Kerosene	8008-20-6	100
Contains:		
Xylene	1330-20-7	<1
naphthalene	91-20-3	0.5 - 1

3. Hazards identification

Physical state Liquid.

Color Clear. (may be dyed)

Emergency overview WARNING !

COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.
HARMFUL IF SWALLOWED.
ASPIRATION HAZARD.
HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS.
CAUSES SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS.

Do not ingest. Avoid contact with eyes, skin and clothing. Do not breathe vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation Wash thoroughly after handling.

Routes of entry Dermal contact. Eye contact. Inhalation. Ingestion.

Potential health effects

Eyes	Slightly irritating to the eyes.
Skin	Causes skin irritation.
Inhalation	May cause respiratory tract irritation. Inhalation causes headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness. See toxicological Information (section 11).
Ingestion	Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs. Ingestion may cause gastrointestinal irritation and diarrhea. See toxicological Information (section 11).
Medical conditions aggravated by over-exposure	None identified.

See toxicological information (section 11)

4. First aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin contact	Wash exposed skin with soap and water. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	If swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed- can enter lungs and cause damage. Get medical attention immediately.

5. Fire-fighting measures

Flammability of the product	Combustible liquid.
Auto-ignition temperature	210 °C
Flash point	>37.778 °C (Closed cup) Tagliabue.
Explosion limits	Lower: >0.7 % Upper: <5 %
Products of combustion	These products are carbon oxides (CO, CO_2) (carbon monoxide , carbon dioxide) . sulfur oxides (SO_2, SO_3 etc.), aldehydes.
Unusual fire/explosion hazards	Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Fire-fighting media and instructions	In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. Do not use water jet. DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. Withdraw from fire and let it burn. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. First move people out of line-of-sight of the scene and away from windows. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Protective clothing (fire)	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Special remarks on fire hazards	Do not use water jet.

6. Accidental release measures

Personal precautions

Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures"). Do not touch or walk through spilled material.

Environmental precautions and clean-up methods

If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion proof means to transfer material to a sealed, appropriate container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. See Section 13 for Waste Disposal Information.

Personal protection in case of a large spill

Splash goggles. Chemical resistant protective suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

7. Handling and storage

Handling

Aspiration hazard if swallowed- can enter lungs and cause damage. Never siphon by mouth. Do not ingest. If ingested do not induce vomiting. When using do not eat, drink or smoke. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Use only with adequate ventilation Avoid breathing vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling. Empty containers may contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

Storage

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Store and use only in equipment/containers designed for use with this product.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
Kerosene	**ACGIH TLV (United States, 1/2005). Skin** TWA: 200 mg/m^3 8 hour(s).
Contains:	
Xylene	**ACGIH TLV (United States, 1/2005).** STEL: 651 mg/m^3 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 434 mg/m^3 8 hour(s). TWA: 100 ppm 8 hour(s). **OSHA PEL (United States, 8/1997).** TWA: 435 mg/m^3 8 hour(s). TWA: 100 ppm 8 hour(s).
naphthalene	**ACGIH TLV (United States, 2001).** STEL: 79 mg/m^3 15 minute(s). STEL: 79 mg/m^3 15 minute(s). STEL: 15 ppm 15 minute(s). TWA: 52 mg/m^3 8 hour(s). TWA: 10 ppm 8 hour(s). **OSHA PEL (United States, 8/1997).** TWA: 50 mg/m^3 8 hour(s). TWA: 10 ppm 8 hour(s).

Control Measures	Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Personal protection	
Eyes	Avoid contact with eyes. Safety glasses with side shields.
Skin and body	Avoid contact with skin and clothing. Wear clothing and footwear that cannot be penetrated by chemicals or oil.
Respiratory	Use only with adequate ventilation Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.
Hands	Avoid prolonged or repeated contact with skin. Wear protective gloves if prolonged or repeated contact is likely. Wear gloves that cannot be penetrated by chemicals or oil. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions. Consult your supervisor or S.O.P. for special handling directions

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state	Liquid.
Odor	Hydrocarbon.
Color	Clear. (may be dyed)
Heat of combustion	Not available.
Boiling point / Range	171.11 to 287.78 °C
Pour Point	-33.889 °C
Specific gravity	0.83
Solubility	Insoluble in cold water.
Viscosity	Kinematic: 1 to 1.9 mm^2/s (1 to 1.9 cSt) at 40°C

10. Stability and reactivity

Stability and reactivity	Stable under recommended storage and handling conditions (See Section: "Handling and storage").
Conditions to avoid	Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).
Incompatibility with various substances	Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis. halogenated compounds.
Hazardous decomposition products	These products are carbon oxides (CO, CO_2) (carbon monoxide , carbon dioxide) .
Hazardous polymerization	Will not occur.

11. Toxicological information

Acute toxicity

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Ingredient name	Test	Result	Route	Species
1-K KEROSENE, LS	LD50	>2000 mg/kg	Oral	Rat
	LD50	>2000 mg/kg	Dermal	Rabbit
	LC50	>6 mg/l (4 hour (s))	Inhalation	Rat

Chronic toxicity

Carcinogenic effects

CONTAINS MATERIAL WHICH CAN CAUSE CANCER.
Risk of cancer depends on duration and level of exposure.
Classified 2B (Possible for human.) by IARC: [naphthalene]
Classified 2 (Reasonably Anticipated To Be Human Carcinogens.) by NTP: [naphthalene]

Other chronic toxicity data

Middle distillate: From skin-painting studies of petroleum distillates of similar composition and distillate range, it has been shown that these types of materials often possess weak carcinogenic activity in laboratory animals. In these tests, the material is painted on the shaved backs of mice twice a week for their lifetime. The material is not washed off between applications. Therefore, there may be a potential risk of skin cancer from prolonged or repeated skin contact with this product in the absence of good personal hygiene. This particular product has not been tested for carcinogenic activity, but we have chosen to be cautious in light of the findings with other distillate streams.

Occasional skin contact with this product is not expected to have serious effects, but good personal hygiene should be practiced and repeated skin contact avoided. This product can also be expected to produce skin irritation upon prolonged or repeated skin contact. Personal hygiene measures taken to prevent skin irritation are expected to be adequate to prevent risk of skin cancer. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

NIOSH has recommended that whole diesel exhaust be regarded as a potential occupational carcinogen, exposure should be minimized to reduce potential risk.

Naphthalene has been evaluated for carcinogenicity in laboratory rodents in studies sponsored by the National Toxicology Program (NTP). Results of these studies show some evidence of carcinogenic activity in female mice, and clear evidence of carcinogenic activity in male and female rats. Tumors were observed in the lung of female mice and in the nose of rats. Nonneoplastic lesions of the nose and respiratory tract were also observed in these studies. The International Agency for Research on Cancer has designated naphthalene as "possibly carcinogenic to humans" (Group 2B). Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phospahate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Xylenes: Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapor becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.
Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.
Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.
Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

12. Ecological information

Ecotoxicity Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Persistence/degradability The biodegradability of this material has not been determined.

Mobility Spillages may penetrate the soil causing ground water contamination.

Bioaccumulative potential This product is not expected to bioaccumulate through food chains in the environment.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

13. Disposal considerations

Waste information Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

Consult your local or regional authorities.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1223	Kerosene	3	III		**Reportable quantity** 100 lbs. (45.36 kg) **Remarks** Passenger Aircraft: 60L CARGO AIRCRAFT ONLY: 220L
TDG Classification	UN1223	Kerosene	3	III		Not determined.
IMDG Classification	UN1223	Kerosene	3	III		**Emergency schedules (EmS)** 3-07 **Remarks** IMDG page: 3375
IATA Classification	UN1223	Kerosene	3	III		Not determined.

15. Regulatory information

U.S. Federal regulations

US INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) one-time export notification:: naphthalene

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 1-K KEROSENE, LS: Fire hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

SARA 313

Form R - Reporting requirements

Supplier notification

Product name	CAS number	Concentration
Xylene	1330-20-7	0 - 1
naphthalene	91-20-3	0.5 - 1
Xylene	1330-20-7	0 - 1
naphthalene	91-20-3	0.5 - 1

CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4):: Xylene: 100 lbs. (45.36 kg); naphthalene: 100 lbs. (45.36 kg);

State regulations

Massachusetts RTK: Kerosene; Xylene; naphthalene
New Jersey: Kerosene; Xylene; naphthalene
Pennsylvania RTK: Kerosene (generic environmental hazard); Xylene (environmental hazard, generic environmental hazard); naphthalene (environmental hazard, generic environmental hazard)

WARNING: This product contains a chemical known to the State of California to cause cancer. naphthalene

May generate diesel exhaust particulate if used as fuel in compression ignition engines.

Inventories

AUSTRALIAN INVENTORY (AICS): Not determined.

CANADA INVENTORY (DSL): Not determined.

CHINA INVENTORY (IECS): Not determined.

EC INVENTORY (EINECS/ELINCS): Not determined.

JAPAN INVENTORY (ENCS): Not determined.

KOREA INVENTORY (ECL): Not determined.

PHILIPPINE INVENTORY (PICCS): Not determined.

16. Other information

Label requirements

WARNING !

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VAPOR MAY CAUSE FIRE.
HARMFUL IF SWALLOWED.
ASPIRATION HAZARD.
HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS.
CAUSES SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS.

HMIS® Rating :

Health	**1**	*
Flammability	**2**	
Physical Hazard	**0**	
Personal protection	**X**	

National Fire Protection Association (U.S.A.)

History

Date of issue 04/24/2006.

Date of previous issue No Previous Validation.

Prepared by Product Stewardship

Notice to reader

NOTICE : This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.