SAFETY DATA SHEET

Section 1. Identification

Product name Biodiesel Blends (B6-B20)

This SDS is applicable to Biodiesel Blends of B20 (20%) or less. (minimum 6 % Biodiesel)

SDS # 0000000051

Historic SDS #: 0000000050 (BP)

Code 0000000051

Relevant identified uses of the substance or mixture and uses advised against

Product use Fuel.

Supplier

BP Products North America Inc.
30 South Wacker Drive
Chicago, IL 60606
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)

Section 2. Hazards identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word Danger

Hazard statements

Combustible liquid.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver, thymus)

Precautionary statements

Section 2. Hazards identification

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from flames and hot surfaces. No smoking. Use only outdoors or in a well-ventilated area. Do not breathe vapor or spray. Wash hands thoroughly after handling.

Response IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention.

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

Disposal Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity.

Hazards not otherwise classified Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Mixture of: Petroleum distillates (Diesel fuel No. 1 and/or 2) with Biodiesel [Fatty Acid Methyl Esters (FAME)]
May contain renewable diesel.
May also contain small quantities of proprietary performance additives.

Ingredient name	CAS number	%
Kerosene (petroleum) [Diesel Fuel No. 1]	8008-20-6	0 - 94
and/or		
Fuels, diesel No. 2	68476-34-6	0 - 94
Contains:		
naphthalene	91-20-3	0.0194 – 0.12
Alkanes, C10-20-branched and linear	928771-01-1	0 - 94
Contains one or more of the following biodiesels:	Varies	6 - 20
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	-
Tallow, Me esters	68910-48-5	-
Fatty acids, sunflower-oil, Me esters	68919-54-0	-
Fatty acids, vegetable-oil, Me esters	68990-52-3	-
Rape oil, Me ester	73891-99-3	-
Soybean oil, Me ester	67784-80-9	-

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.

Section 4. First aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention. If exposure to vapor, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis.
Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments

No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Vapors can form explosive mixtures with air. Vapors are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Liquid will float and may reignite on surface of water.

Hazardous combustion products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)

Section 5. Fire-fighting measures

Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal. Collect spillage.

Methods and materials for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Section 7. Handling and storage

Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/ containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Kerosene (petroleum) [Diesel Fuel No. 1]	**ACGIH TLV (United States). [Kerosene] Absorbed through skin.** TWA: 200 mg/m³, (as total hydrocarbon vapor) 8 hours. Issued/Revised: 1/2003
Fuels, diesel No. 2	**ACGIH TLV (United States). [Diesel Fuel] Absorbed through skin.** TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor
Alkanes, C10-20-branched and linear	None.
naphthalene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 52 mg/m³ 8 hours. Issued/Revised:

	4/2014 TWA: 10 ppm 8 hours. Issued/Revised: 4/2014 **OSHA PEL (United States).** TWA: 50 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves. Recommended: Nitrile gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Body protection

Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.

Section 8. Exposure controls/personal protection

When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use only with adequate ventilation. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.

If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator.

Use with adequate ventilation.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state Liquid.

Color Colorless.. (May be dyed Red. Light Green. Yellow.)

Odor Diesel fuel, Kerosene, Petroleum

Odor threshold 0.7 ppm (Based on Fuels, diesel)

pH Not applicable. Based on: Solubility in water (negligible).

Melting point/freezing point -29 to -18°C (-20.2 to -0.4°F) (Based on Fuels, diesel)

Boiling point, initial boiling point, and boiling range 160 to 390°C (320 to 734°F) (Based on Fuels, diesel)

Flash point Closed cup: ≥93°C (≥199.4°F) [Pensky-Martens]

Evaporation rate Not applicable. Based on: low volatility.

Flammability Not applicable. Based on - Physical state

Lower and upper explosion limit/flammability limit Lower: 0.6%
Upper: 7.5%

Vapor pressure 0.4 kPa (3 mm Hg) [40°C (104°F)]

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Kerosene (petroleum) [Diesel Fuel No. 1]	2	0.27				
Alkanes, C10-20-branched and linear	0.65	0.087				
Fatty acids, C16-18 and C18-unsatd., Me esters	3.15	0.42	EU A.4			
Fatty acids, vegetable-oil, Me esters	3.15	0.42	EU A.4			

Relative vapor density >1 [Air = 1]

Density 815 to 875 kg/m³ (0.815 to 0.875 g/cm³)

Relative density <1

Solubility(ies)

Section 9. Physical and chemical properties

Not available.

Miscible with water No.

Partition coefficient: n-octanol/water Not applicable. Based on: Fuels, diesel - Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Auto-ignition temperature 257°C (494.6°F)

Decomposition temperature Not observed to decompose by final boiling point: >390°C (>734°F)

Viscosity Kinematic: 1.3 to 4.1 mm^2/s (1.3 to 4.1 cSt) at 40°C

Particle characteristics

Median particle size Not applicable.

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

Incompatible materials Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
halogenated compounds

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	LC50 Inhalation Vapor	Rat	>5.28 mg/l Mortality and Systemic Effects	4 hours	Based on Straight run kerosene
	LD50 Dermal	Rabbit	>2000 mg/kg Mortality and Systemic Effects	-	Based on Thermocracked kerosene
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Thermocracked kerosene
Fuels, diesel No. 2	LC50 Inhalation Dusts and mists	Rat	4.1 mg/l	4 hours	Based on Diesel fuel
	LD50 Dermal	Rabbit	>4300 mg/kg	-	Based on No. 2 Heating Oil.
	LD50 Dermal	Rabbit	>4300 mg/kg	-	Based on Diesel fuel
	LD50 Oral	Rat	17900 mg/kg	-	Based on No. 2 Heating Oil.

	LD50 Oral	Rat	7600 mg/kg	-	Based on Diesel fuel
naphthalene	LD50 Dermal	Rabbit	20 g/kg	-	-
	LD50 Oral	Rat	490 mg/kg	-	-

Conclusion/Summary Harmful if inhaled.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	Rabbit	Eyes - Non-irritating to the eyes.	-	100%	-	100%	Based on Thermocracked kerosene
	Rabbit	Skin - Irritation	-	24 hours 100%	-	100%	Based on Heating Oil.
	Rabbit	Skin - Non-irritant to skin.	-	4 hours 100 %	-	100 %	Based on Kerosene
Fuels, diesel No. 2	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on No. 2 Heating Oil.
	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Diesel fuel
	Rabbit	Skin - Irritation	-	-	-	-	Based on No. 2 Heating Oil.
	Rabbit	Skin - Irritation	-	-	-	-	Based on Diesel fuel

Skin Causes skin irritation.

Eyes Not classified. Based on available data, the classification criteria are not met.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	skin	Guinea pig	Not sensitizing	Based on Thermocracked kerosene
Fuels, diesel No. 2	skin	Guinea pig	Not sensitizing	Based on No. 2 Heating Oil.
	skin	Guinea pig	Not sensitizing	Based on Diesel fuel

Skin Not classified. Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Hydrodesulfurized kerosene
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Hydrodesulfurized kerosene
	Equivalent to OECD 471	Experiment: In vitro	Negative	Based on Hydrodesulfurized

					kerosene
		Subject: Non-mammalian species			
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Straight run kerosene	
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Straight run kerosene	
Fuels, diesel No. 2	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal	Positive	Based on Hydrodesulfurized gas oil	
	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive	Based on Diesel fuel	
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive	Based on Cracked gas oil	
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative	Based on Heating Oil.	
	not guideline 475	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative	Based on Heating Oil.	
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gas oil	

Conclusion/Summary Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Test authority / Test number	Species	Route	Exposure	Result	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	Equivalent to OECD 451	Mouse	Dermal	2 years	Negative - Dermal - Unspecified	Based on Hydrotreated Kerosene
	Equivalent to OECD 451	Mouse	Dermal	2 years	Positive - Dermal - Unspecified	Based on Jet Fuel
Fuels, diesel No. 2	Equivalent to OECD 451	Mouse	Dermal	2 years	Positive - Dermal - Unspecified	Based on Heating Oil.
	not guideline -	Mouse	Dermal	2 years	Positive - Dermal - Unspecified	Limited relevance to man. (Based on Heating Oil.)

Conclusion/Summary Suspected of causing cancer.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
Kerosene (petroleum) [Diesel Fuel No. 1]	-	3	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Descriptors:

OSHA:
+ - Potential occupational carcinogen

IARC:
1 - Carcinogenic to human.
2A - Probable human carcinogen.
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.
4 - Probably not a human carcinogen.

NTP:
Proven - Known to be human carcinogens.
Possible - Reasonably anticipated to be human carcinogens.

Carcinogenicity Additional information Not applicable.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Kerosene (petroleum) [Diesel Fuel No. 1]	-	Negative	-	Rat	Dermal	34 days
	-	-	Negative	Rat	Inhalation	10 days
	-	-	Negative	Rat	Oral	10 days
	-	Negative	-	Rat	Oral	90 days
Fuels, diesel No. 2	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	20 days
	-	-	Negative	Rat	Dermal	20 days

Conclusion/Summary Development: Not classified. Based on available data, the classification criteria are not met.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Kerosene (petroleum) [Diesel Fuel No. 1]	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Fuels, diesel No. 2	Category 2	-	bone marrow, liver, thymus

Aspiration hazard

Name	Result
Kerosene (petroleum) [Diesel Fuel No. 1]	ASPIRATION HAZARD - Category 1
Fuels, diesel No. 2	ASPIRATION HAZARD - Category 1
Alkanes, C10-20-branched and linear	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Skin contact Causes skin irritation.

Section 11. Toxicological information

Inhalation Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Skin contact Adverse symptoms may include the following:
irritation
redness

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects May be harmful by inhalation if exposure to vapor, mists or fumes resulting from thermal decomposition products occurs. Vapor, mist or fume may irritate the nose, mouth and respiratory tract.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

General May be harmful by inhalation if exposure to vapor, mists or fumes resulting from thermal decomposition products occurs. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Carcinogenicity Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	4.1 mg/l

Other information 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.

Section 11. Toxicological information

Additional information

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.

Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

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 (National Toxicology Program) 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-phosphate 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.

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Product/ingredient name	Species	Test/Result	Exposure	Effects	Remarks
Kerosene (petroleum) [Diesel Fuel No. 1]	Algae	EL50 1 to 3 mg/l Nominal Fresh water	72 hours	cell number	Based on Solvent naphtha (petroleum), heavy aromatic
	Micro-organism	LL50 677.9 mg/l Nominal Fresh water	72 hours	growth inhibition	Based on Kerosene
	Algae	LOEL 1 mg/l Nominal Fresh water	72 hours	cell number	Based on Solvent naphtha (petroleum), heavy aromatic
	Algae	NOEL 1 mg/l Nominal Fresh water	24 hours	cell number	Based on Solvent naphtha (petroleum), heavy aromatic
	Algae	NOEL 1 mg/l Nominal Fresh water	48 hours	cell number	Based on Solvent naphtha (petroleum), heavy aromatic
	Micro-organism	NOEL 1.641 mg/l Nominal Fresh water	72 hours	growth inhibition	Based on Kerosene
	Daphnia	Acute EL50 1.4 mg/l Nominal Fresh water	48 hours	Mobility	Based on Kerosene (petroleum), hydrodesulfurized

	Fish	Acute LL50 2 to 5 mg/l Fresh water	96 hours	Mortality	Based on Heavy aromatic solvent naphtha
	Daphnia	Acute NOEL 0.3 mg/l Nominal Fresh water	48 hours	Mobility	Based on Kerosene (petroleum), hydrodesulfurized
	Fish	Acute NOEL 2 mg/l Fresh water	96 hours	Mortality	Based on Solvent naphtha (petroleum), heavy aromatic
	Daphnia	Chronic EL50 0.89 mg/l Fresh water	21 days	Reproduction	Based on Kerosene (petroleum), hydrodesulfurized
	Daphnia	Chronic EL50 0.81 mg/l Fresh water	21 days	Immobilization	Based on Kerosene (petroleum), hydrodesulfurized
	Daphnia	Chronic LOEL 1.2 mg/l Fresh water	21 days	Reproduction	Based on Kerosene (petroleum), hydrodesulfurized
	Daphnia	Chronic LOEL 0.48 mg/l Fresh water	21 days	Adult Length	Based on Kerosene (petroleum), hydrodesulfurized
	Daphnia	Chronic NOEL 0.48 mg/l Fresh water	21 days	Reproduction	Based on Kerosene (petroleum), hydrodesulfurized
	Daphnia	Chronic NOEL 1.2 mg/l Fresh water	21 days	Adult Length	Based on Kerosene (petroleum), hydrodesulfurized
	Fish	Chronic NOEL 0.098 mg/l Nominal Fresh water	28 days	Mortality	Based on Kerosene
Fuels, diesel No. 2	Micro-organism	EL50 >1000 mg/l Nominal Fresh water	40 hours	growth inhibition	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Micro-organism	NOELR 3.217 mg/l Nominal Fresh water	40 hours	growth inhibition	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Algae	Acute EL50 22 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	Daphnia	Acute EL50 210 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel

	Daphnia	Acute EL50 68 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel
	Algae	Acute ErL50 78 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	Fish	Acute LL50 65 mg/l Nominal Fresh water	96 hours	Mortality	Based on Diesel fuel
	Fish	Acute LL50 21 mg/l Nominal Fresh water	96 hours	Mortality	Based on Diesel fuel
	Algae	Acute NOELR 10 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	Algae	Acute NOELR 1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	Daphnia	Acute NOELR 46 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel
	Daphnia	Chronic NOELR 0.2 mg/l Nominal Fresh water	21 days	Immobilization	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Fish	Chronic NOEL 0.083 mg/l Nominal Fresh water	14 days	Mortality	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
naphthalene	Algae	EC50 0.4 mg/l	96 hours	-	-
	Crustaceans	EC50 2.16 mg/l	48 hours	-	-

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

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

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

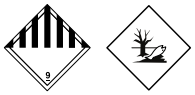
Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	NA1993	UN3082	UN3082	UN3082
UN proper shipping name	Combustible liquid, n. o.s. (Diesel fuel)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Kerosene, Fuels, diesel No. 2)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.. Marine pollutant (Kerosene, Fuels, diesel No. 2)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Kerosene, Fuels, diesel No. 2)
Transport hazard class(es)	Combustible liquid.	9 	9 	9 
Packing group	III	III	III	III
Environmental hazards	No.	Yes.	Yes.	Yes.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Emergency schedules** F-A, S-F	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user

Not available.

Transport in bulk according to IMO instruments

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gas oils, including ship's bunkers

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b)

Please contact your supplier for information on the inventory status of this material.

TSCA 5(a)2 proposed significant new use rules: 4-nonylphenol, branched

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
HNOC - Static-accumulating flammable liquid

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	naphthalene	91-20-3	0.0194 – 0.12
Supplier notification	naphthalene	91-20-3	0.0194 – 0.12

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

The following components are listed: Kerosene (petroleum) [Diesel Fuel No. 1]

New Jersey

The following components are listed: Kerosene (petroleum) [Diesel Fuel No. 1]; NAPHTHALENE

Pennsylvania

The following components are listed: Kerosene (petroleum) [Diesel Fuel No. 1]

California Prop. 65

Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including diesel exhaust, a Prop 65 carcinogen, and carbon monoxide, a Prop 65 reproductive toxin.

⚠ **WARNING**: This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Naphthalene, cumene, Ethylbenzene, Benzo[a]pyrene, cumene and Propylene oxide, which are known to the State of California to cause cancer, and Toluene and Methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Other regulations

Australia inventory (AIIC)

At least one component is not listed.

Canada inventory

Please contact your supplier for information on the inventory status of this material.

China inventory (IECSC)

At least one component is not listed.

Japan inventory (CSCL)

At least one component is not listed.

Korea inventory (KECI)

At least one component is not listed.

Philippines inventory (PICCS)

At least one component is not listed.

Taiwan Chemical Substances Inventory (TCSI)

Not determined.

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

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

History

Date of issue/Date of revision	11/10/2022.
Date of previous issue	02/08/2022.
Prepared by	Product Stewardship

Key to abbreviations

ACGIH = American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS Number = Chemical Abstracts Service Registry Number
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure limit
TWA = Time weighted average
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Indicates information that has changed from previously issued version.

Notice to reader

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