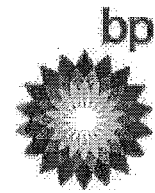


SAFETY DATA SHEET



Section 1. Identification

Product name Biodiesel Blends (B6-B20)
Chemical name Fuels, diesel
This MSDS is applicable to Biodiesel Blends of B6-B20
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.
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

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) (thymus, liver and bone marrow) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms



Signal word Danger

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Section 2. Hazards identification

Hazard statements	Combustible liquid. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. May be fatal if swallowed and enters airways. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver, thymus)
Precautionary statements	
Prevention	Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Do not breathe vapor. Wear protective gloves and eye protection. Avoid release to the environment.
Response	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, seek medical advice/attention.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	This material may contain significant quantities of polycyclic aromatic hydrocarbons (PAHs), some of which have been shown by experimental studies to induce skin cancer. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition/information on ingredients

Substance/mixture Mixture
Chemical name

Ingredient name	CAS number	%
PETROLEUM DISTILLATE (Diesel Fuel No. 1) and/or PETROLEUM DISTILLATE (Diesel Fuel No. 2)	8008-20-6 68476-34-6	>79 >79
Contains: Naphthalene May also contain small quantities of proprietary performance additives.	91-20-3	<1
Contains one or more of the following biodiesels: soybean oil, me ester Fatty acids, sunflower-oil, Me esters Fatty acids methyl esters Fatty acids, vegetable-oil, Methyl esters rape oil, me ester Tallow, Me esters	Varies 67784-80-9 68919-54-0 67762-38-3 68990-52-3 73891-99-3 68910-48-5	6 - 20

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 or the environment 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.

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Section 4. First aid measures

Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
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.
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	Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Runoff to sewer may create fire or explosion hazard.
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Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide) other hazardous substances.
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Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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Special protective equipment for fire-fighters	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.
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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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
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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). Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Avoid contact of spilled material and runoff with soil and surface waterways. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Do not breathe vapor or mist. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.
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.

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Section 7. Handling and storage

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 to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. 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
Petroleum distillates (Kerosene)	ACGIH TLV (United States). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours. Issued/Revised: 1/2003
fuel, diesel no. 2	ACGIH TLV (United States). Absorbed through skin. TWA: 100 mg/m ³ , (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor
naphthalene	ACGIH TLV (United States). Absorbed through skin. TWA: 52 mg/m ³ 8 hours. Issued/Revised: 5/1996 TWA: 10 ppm 8 hours. Issued/Revised: 5/1996 OSHA PEL (United States). TWA: 50 mg/m ³ 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.

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Section 8. Exposure controls/personal protection

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

Recommended: Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves. 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.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Body protection

Use of protective clothing is good industrial practice. 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 from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. 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. 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. 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. Recommended: overall

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. Recommended: nitrile rubber

Section 8. Exposure controls/personal protection

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.

In case of insufficient ventilation, wear suitable respiratory equipment.

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.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Colorless. to Various Color. (May be dyed Red. Light Green. Yellow.)
Odor	Diesel fuel, Kerosene, Petroleum
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Closed cup: $\geq 93^{\circ}\text{C}$ ($\geq 199.4^{\circ}\text{F}$) [Pensky-Martens.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Lower: 0.6% Upper: 7.5%
Vapor pressure	Not available.
Vapor density	Not available.
Density	815 to 875 kg/m ³ (0.815 to 0.875 g/cm ³)
Relative density	<1 [Water = 1]
Solubility	negligible <0.1%
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic: 1.3 to 4.1 mm ² /s (1.3 to 4.1 cSt) at 40°C

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).

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Section 10. Stability and reactivity

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
Petroleum distillates	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 kerosine
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Thermocracked kerosine
fuel, 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	LC50 Inhalation Dusts and mists	Rat	>340 mg/m ³	1 hours	-
	LD50 Dermal	Rabbit	20 g/kg	-	-
	LD50 Oral	Rat	490 mg/kg	-	-

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Petroleum distillates	Rabbit	Skin - Non-irritant to skin.	-	4 hours	100 %	100 %	Based on Kerosine
	Rabbit	Skin - Irritation	-	24 hours	100%	100%	Based on Heating Oil.
	Rabbit	Eyes - Non-irritating to the eyes.	-	100%	-	100%	Based on Thermocracked kerosine
fuel, diesel no. 2	Rabbit	Skin - Irritation	-	-	-	-	Based on No. 2 Heating Oil.

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Section 11. Toxicological information

Rabbit	Skin - Irritation	-	-	-	-	Based on Diesel fuel
Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on No. 2 Heating Oil.
Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Diesel fuel

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Petroleum distillates	skin	Guinea pig	Not sensitizing	Based on Thermocracked kerosine
fuel, diesel no. 2	skin	Guinea pig	Not sensitizing	Based on No. 2 Heating Oil.
	skin	Guinea pig	Not sensitizing	Based on Diesel fuel

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Petroleum distillates	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Hydrosulfurized Kerosine
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Hydrosulfurized Kerosine
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Hydrosulfurized Kerosine
	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
fuel, 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-	Positive	Based on Cracked gas oil

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mammalian species

Equivalent to OECD 476 Experiment: In vitro Negative Based on Heating Oil.

Subject:
Mammalian-Animal
Cell: Germ

not guideline 475 Experiment: In vivo Negative Based on Heating Oil.

Subject: Unspecified
Cell: Somatic

Equivalent to OECD 475 Experiment: In vivo Negative Based on Gas oil

Subject: Unspecified
Cell: Germ

Conclusion/Summary Not available.

Carcinogenicity

Product/ingredient name

Petroleum distillates	Equivalent to OECD	451	Mouse	Dermal	2 years	Positive - Dermal - Unspecified	Based on Jet Fuel
	Equivalent to OECD	451	Mouse	Dermal	2 years	Negative - Dermal - Unspecified	Based on Hydrotreated Kerosine
fuel, 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

Product/ingredient name	OSHA	IARC	NTP
Petroleum distillates (Kerosene)	-	3	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

IARC :

2B - Possible carcinogen to human.

3 - Not classifiable as a human carcinogen.

NTP :

Possible - Reasonably anticipated to be human carcinogens.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Result	Exposure
Petroleum distillates	-	Negative	-	Rat	Dermal	34 days
	-	Negative	-	Rat	Oral	90 days
	-	-	Negative	Rat	Oral	10 days
	-	-	Negative	Rat	Inhalation	10 days
fuel, diesel no. 2	-	-	Negative	Rat	Dermal	20 days

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-	-	Negative	Rat	Dermal	10 days
-	-	Negative	Rat	Dermal	10 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
Petroleum distillates (Kerosene)	Category 3	Not applicable.	Narcotic effects

Aspiration hazard

Name	Result
Petroleum distillates (Kerosene) fuel, diesel no. 2	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

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

Potential acute health effects

Eye contact No known significant effects or critical hazards.
Skin contact Causes skin irritation.
Inhalation Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
Ingestion Can cause central nervous system (CNS) depression. 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.

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Section 11. Toxicological information

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

Not available.

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.

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
Petroleum distillates (Kerosene)	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 Kerosine

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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 Kerosine
Daphnia	Acute EL50 1.4 mg/l Nominal Fresh water	48 hours	Mobility	Based on Kerosine (petroleum), hydrodesulfurised
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 Kerosine (petroleum), hydrodesulfurised
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 Kerosine (petroleum), hydrodesulfurised
Daphnia	Chronic EL50 0. 81 mg/l Fresh water	21 days	Immobilization	Based on Kerosine (petroleum), hydrodesulfurised
Daphnia	Chronic LOEL 1. 2 mg/l Fresh water	21 days	Reproduction	Based on Kerosine (petroleum), hydrodesulfurised
Daphnia	Chronic LOEL 0. 48 mg/l Fresh water	21 days	Adult Length	Based on Kerosine (petroleum), hydrodesulfurised
Daphnia	Chronic NOEL 0. 48 mg/l Fresh water	21 days	Reproduction	Based on Kerosine (petroleum), hydrodesulfurised
Daphnia	Chronic NOEL 1. 2 mg/l Fresh water	21 days	Adult Length	Based on Kerosine (petroleum), hydrodesulfurised

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	Fish	Chronic NOEL 0.098 mg/l Nominal Fresh water	28 days	Mortality	Based on Kerosine
fuel, 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 EL50 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
	Fish	Chronic NOEL 0.083 mg/l Nominal Fresh water	14 days	Mortality	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Daphnia	Chronic NOELR 0.2 mg/l Nominal Fresh water	21 days	Immobilization	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	-	-

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Section 12. Ecological information

Conclusion/Summary Not available.

Persistence and degradability

Not available.

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.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Naphthalene	91-20-3	Listed	U165

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	NA1993	UN1202	UN1202	UN1202
UN proper shipping name	Diesel fuel	Gas oil	Gas oil Marine pollutant	Gas oil
Transport hazard class(es)	Combustible liquid.	3 	3  	3 
Packing group	III	III	III	III

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Section 14. Transport information

Environmental hazards	No.	No.	Yes.	No.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. <u>Reportable quantity</u> 100 lbs / 45.4 kg [14.193 gal / 53.728 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Emergency schedules (EmS)</u> F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code 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) All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

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Section 15. Regulatory information

	Product name	CAS number	Concentration
Form R - Reporting requirements			<1
Supplier notification	naphthalene	91-20-3	<1

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: Kerosine; Naphthalene
New Jersey	The following components are listed: Kerosene; Fuel Oil #1; Naphthalene; MOTH FLAKES
Pennsylvania	The following components are listed: Kerosine (Petroleum); Naphthalene
California Prop. 65	<p>WARNING: This product contains a chemical known to the State of California to cause cancer. naphthalene; cumene; ethylbenzene</p> <p>WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene; Methanol</p> <p>WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. ;Benzene</p>

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.

Other regulations

Australia inventory (AICS)	At least one component is not listed.
Canada inventory	Not determined.
China inventory (IECSC)	At least one component is not listed.
Japan inventory (ENCS)	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 inventory (CSNN)	
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		2
Physical hazards		0
Personal protection		X

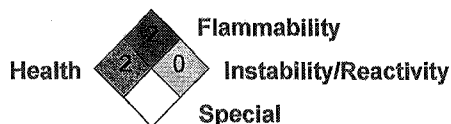
Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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

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Section 16. Other information



History

Date of issue/Date of revision	12/16/2014.
Date of previous issue	No previous validation.
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 73/78 = 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.

▼ Indicates information that has changed from previously issued version.

Notice to reader

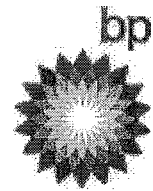
All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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SAFETY DATA SHEET



Section 1. Identification

Product name Diesel Fuel No. 2
Chemical name Fuels, diesel
Other means of identification Heating Oil.
Hydrocracker Diesel
SDS # 11155
Historic SDS #: APPC174
Code 11155

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

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

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

Precautionary statements

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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 heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. 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. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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 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. Defatting to the skin. This material may contain significant quantities of polycyclic aromatic hydrocarbons, some of which have been shown by experimental studies to induce skin cancer. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition/information on ingredients

Substance/mixture Mixture
 May contain fatty acid methyl esters (FAME). (0 - 5%)
 May also contain small quantities of proprietary performance additives.

Ingredient name	CAS number	%
Fuels, diesel, No 2 (Petroleum distillates)	68476-34-6	0 - 100
Contains: naphthalene	91-20-3	0.028062 - 0.14319
Contains one or more of the following renewable diesels: Alkanes, C10-20-branched and linear	Varies 928771-01-1	0 - 100 .
Contains one or more of the following biodiesels: Soybean oil, Me ester	Varies 67784-80-9	0 - 5 .
Fatty acids, sunflower-oil, Me esters	68919-54-0	.
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	.
Fatty acids, vegetable-oil, Me esters	68990-52-3	.
Rape oil, Me ester	73891-99-3	.
Fatty acids, canola-oil, Me esters	129828-16-6	.
fatty acids, tallow, me esters	61788-61-2	.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.
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.
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	<p>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.</p> <p>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.</p>
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. The use of a water jet may cause the fire to spread by splashing the burning product.

Specific hazards arising from the chemical

Flammable liquid and vapor. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. 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



Section 5. Fire-fighting measures

	<p>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.</p>
Hazardous combustion products	<p>Combustion products may include the following: carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)</p>
Special protective actions for fire-fighters	<p>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.</p>
Special protective equipment for fire-fighters	<p>Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.</p>

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	<p>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.</p>
For emergency responders	<p>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".</p>
Environmental precautions	<p>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). Water polluting material. May be harmful to the environment if released in large quantities. 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.</p>

Methods and materials for containment and cleaning up

Small spill	<p>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.</p>
Large spill	<p>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.</p>

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. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. 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

286-6-20-01573/F1.1.ps 887139669 13-29



Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Fuels, diesel, No 2	ACGIH TLV (United States). [Diesel Fuel] Absorbed through skin. TWA: 100 mg/m ³ , (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor
Renewable hydrocarbons (diesel type fraction)	None.
naphthalene	ACGIH TLV (United States). Absorbed through skin. TWA: 52 mg/m ³ 8 hours. Issued/Revised: 4/2014 TWA: 10 ppm 8 hours. Issued/Revised: 4/2014 OSHA PEL (United States). TWA: 50 mg/m ³ 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.

Section 8. Exposure controls/personal protection

Body protection	<p>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.</p> <p>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.</p> <p>Wear suitable protective clothing.</p> <p>Footwear highly resistant to chemicals.</p> <p>When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.</p> <p>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.</p> <p>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.</p> <p>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.</p>
Other skin protection	<p>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.</p>
Respiratory protection	<p>Use only with adequate ventilation. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.</p> <p>If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator.</p> <p>Use with adequate ventilation.</p> <p>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.</p> <p>The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.</p>

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	Petroleum
Odor threshold	0.7 ppm (Based on Fuels, diesel)
pH	Not applicable. Based on Solubility in water (Very slightly soluble in water)
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: ≥52°C (≥125.6°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)]
Relative vapor density	>1 [Air = 1]
Density	820 to 875 kg/m ³ (0.82 to 0.875 g/cm ³)
Relative density	<1

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Section 9. Physical and chemical properties

Solubility(ies)

Media	Result
water	Very slightly soluble

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: 1.7 to 4.1 mm ² /s (1.7 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
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
Renewable hydrocarbons (diesel type fraction)	LD50 Dermal	Rat	>2000 mg/kg	-	-
	LD50 Oral	Rat	>2000 mg/kg	-	-
naphthalene	LD50 Dermal	Rabbit	20 g/kg	-	-

Section 11. Toxicological information

LD50 Oral Rat 490 mg/kg - -

Conclusion/Summary Harmful if inhaled.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
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
Renewable hydrocarbons (diesel type fraction)	Unspecified	Eyes - Non-irritating to the eyes.	-	-	-	-	-
	Unspecified	Skin - Non-irritant to skin.	-	-	-	-	-
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
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	Unspecified	Not sensitizing	-
Renewable hydrocarbons (diesel type fraction)	skin	Unspecified	Not sensitizing	-
Skin	Not classified. Based on available data, the classification criteria are not met.			

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Fuels, diesel, No 2	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive	Based on Diesel fuel
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative	Based on Heating Oil.
	not guideline	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative	Based on Heating Oil.
Renewable hydrocarbons (diesel type fraction)	EU B10	Experiment: In vitro Subject: Unspecified	Negative	-
	EU B13/14	Experiment: In vitro Subject: Unspecified	Negative	-
	EU B17	Experiment: In vitro	Negative	-



Section 11. Toxicological information

Subject: Unspecified

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
Fuels, diesel, No 2	Equivalent 451 to OECD	Mouse	Dermal	2 years	Positive - Dermal - Unspecified	Based on Heating Oil.

Conclusion/Summary Suspected of causing cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Descriptors:

<i>OSHA:</i> + - Potential occupational carcinogen	<i>IARC:</i> 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.	<i>NTP:</i> Proven - Known to be human carcinogens. Possible - Reasonably anticipated to be human carcinogens.
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Carcinogenicity Additional information Not applicable.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Fuels, diesel, No 2	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	20 days
Renewable hydrocarbons (diesel type fraction)	Negative	Negative	Negative	Unspecified	Oral	-

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 (repeated exposure)

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

Aspiration hazard

Name	Result
Fuels, diesel, No 2	ASPIRATION HAZARD - Category 1
Renewable hydrocarbons (diesel type fraction)	ASPIRATION HAZARD - Category 1

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

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Skin contact	Causes skin irritation.
Inhalation	Harmful if inhaled.
Ingestion	Irritating to mouth, throat and stomach. Aspiration hazard if swallowed – harmful or fatal if liquid is aspirated into lungs.

Section 11. Toxicological information

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

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.

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Section 11. Toxicological information

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
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 EL50 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

Section 12. Ecological information

	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
Renewable hydrocarbons (diesel type fraction)	Micro-organism	Acute EC50 >100 mg/l	3 hours	-	-
	Aquatic plants	Acute EL50 >100 mg/l WAF	48 hours	-	-
	Daphnia	Acute EL50 >100 mg/l WAF	48 hours	-	-
	Fish	Acute LL50 >1000 mg/l WAF	96 hours	-	-
	Daphnia	Chronic NOEC 1 mg/l WAF	21 days	-	-
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.

Product/ingredient name	Test	Result	Remarks
Fuels, diesel, No 2	OECD 301 F	60 % - Readily - 28 days	Based on Diesel fuel
	OECD 301 F	57.5 % - Not readily - 28 days	Based on Diesel fuel
	Equivalent to EPA OTS 796.3100	35 % - Not readily - 28 days	Based on Gas Oils (petroleum), solvent refined
Conclusion/Summary	Not available.		

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	UN1202	UN1202	UN1202
UN proper shipping name	Diesel fuel RQ	Gas oil	Gas oil. Marine pollutant	Gas oil
Transport hazard class(es)	Combustible liquid.	3 	3 	3 
Packing group	III	III	III	III
Environmental hazards	No.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity. Reportable quantity 100 lbs / 45.4 kg [14.152 gal / 53.569 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user Not available.

Section 14. Transport information

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 3

ACUTE TOXICITY (inhalation) - Category 4

SKIN IRRITATION - Category 2

CARCINOGENICITY - Category 2

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	0.027337 - 0.14042
Supplier notification	Naphthalene	91-20-3	0.027337 - 0.14042

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

None of the components are listed.

New Jersey

The following components are listed: NAPHTHALENE

Pennsylvania

None of the components are listed.

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, cumene, Propylene oxide and Benzo[a]pyrene, 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 (AIC)

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.

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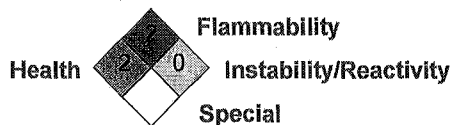
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Section 16. Other information

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



History

Date of issue/Date of revision 04/19/2023.

Date of previous issue 11/03/2022.

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.

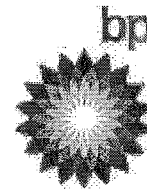
Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

SAFETY DATA SHEET



Section 1. Identification

Product name Gasoline, All Grades, United States
SDS # 12631
Code 12631

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

Product use USE AS MOTOR FUEL ONLY.

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 1
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Extremely flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye irritation.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.

Precautionary statements

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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 heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. 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. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical 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	
Ingredient name	CAS number	%
Gasoline	Mixture	85 - 100
Ethanol	64-17-5	0 - 15
Contains:		
Benzene	71-43-2	0 - 3.8
Cyclohexane	110-82-7	0 - 1
Ethylbenzene	100-41-4	0 - 2
Toluene	108-88-3	4 - 11
1,2,4-Trimethylbenzene	95-63-6	0 - 3
xylene	1330-20-7	4 - 11
Naphthalene	91-20-3	0 - 0.5

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. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	If inhaled, remove to fresh air. 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.

Section 4. First aid measures

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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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.
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. The use of a water jet may cause the fire to spread by splashing the burning product.

Specific hazards arising from the chemical

Extremely flammable liquid and vapor. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. 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, CO₂) (carbon monoxide, carbon dioxide)

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. 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 positive pressure breathing apparatus (SCBA).
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	Liquid leaks generate large volumes of flammable vapor, heavier than air, which may travel to remote sources of ignition (eg. along drainage systems). 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). Water polluting material. May be harmful to the environment if released in large quantities. 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.
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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. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid breathing vapor or mist. 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. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. Handling operations that can promote accumulation of
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Section 7. Handling and storage

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. Contaminated work clothing should not be allowed out of the workplace. 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.

Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapor concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	ACGIH TLV (United States). TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m ³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m ³ 15 minutes. Issued/Revised: 5/1996
Ethanol	ACGIH TLV (United States). STEL: 1000 ppm 15 minutes. Issued/Revised:

Product name Gasoline, All Grades, United States

Product code 12631

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Section 8. Exposure controls/personal protection

	<p>11/2008 OSHA PEL (United States). TWA: 1900 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 1000 ppm 8 hours. Issued/Revised: 6/1993</p>
Toluene	<p>OSHA PEL Z2 (United States). AMP: 500 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 300 ppm Issued/Revised: 6/1993 TWA: 200 ppm 8 hours. Issued/Revised: 6/1993 ACGIH TLV (United States). Ototoxicant. TWA: 20 ppm 8 hours. Issued/Revised: 1/2021</p>
xylene	<p>OSHA PEL (United States). [Xylenes] TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993 ACGIH TLV (United States). [p-xylene and mixtures containing p-xylene] Ototoxicant. TWA: 20 ppm 8 hours. Issued/Revised: 1/2022</p>
Benzene	<p>ACGIH TLV (United States). Absorbed through skin. STEL: 8 mg/m³ 15 minutes. Issued/Revised: 5/1997 STEL: 2.5 ppm 15 minutes. Issued/Revised: 5/1997 TWA: 1.6 mg/m³ 8 hours. Issued/Revised: 5/1997 TWA: 0.5 ppm 8 hours. Issued/Revised: 5/1997 OSHA PEL (United States). STEL: 5 ppm 15 minutes. Issued/Revised: 6/1993 TWA: 1 ppm 8 hours. Issued/Revised: 6/1993 OSHA PEL Z2 (United States). AMP: 50 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 25 ppm Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993</p>
1,2,4-Trimethylbenzene	<p>ACGIH TLV (United States). TWA: 10 ppm 8 hours. Issued/Revised: 1/2022</p>
Ethylbenzene	<p>ACGIH TLV (United States). Ototoxicant. TWA: 20 ppm 8 hours. Issued/Revised: 1/2022 OSHA PEL (United States). TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993</p>
cyclohexane	<p>ACGIH TLV (United States). TWA: 100 ppm 8 hours. Issued/Revised: 1/2002</p>

Section 8. Exposure controls/personal protection

naphthalene	OSHA PEL (United States). TWA: 1050 mg/m ³ 8 hours. Issued/Revised: 6/1993 TWA: 300 ppm 8 hours. Issued/Revised: 6/1993
	ACGIH TLV (United States). Absorbed through skin. TWA: 52 mg/m ³ 8 hours. Issued/Revised: 4/2014 TWA: 10 ppm 8 hours. Issued/Revised: 4/2014
	OSHA PEL (United States). TWA: 50 mg/m ³ 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

Ingredient name	Exposure indices
Toluene	ACGIH BEI (United States, 1/2023) BEI: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift. BEI: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift. BEI: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.
xylene	ACGIH BEI (United States, 1/2023) [xylenes (technical or commercial grade)] BEI: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.
Benzene	ACGIH BEI (United States, 1/2023) BEI: 25 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of shift. BEI: 500 µg/g creatinine, t,t-muconic acid [in urine]. Sampling time: end of shift.
Ethylbenzene	ACGIH BEI (United States, 1/2023) BEI: 0.15 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
cyclohexane	ACGIH BEI (United States, 1/2023) BEI: 50 mg/g creatinine, 1,2-cyclohexanediol [in urine]. Sampling time: end of shift at end of workweek.
naphthalene	ACGIH BEI (United States, 1/2023) BEI: Nonquantitative: Biological monitoring should be considered for this compound based on the review; however, a specific BEI® could not be determined due to insufficient data., 1-naphthol + 2-naphthol [(sample not specified)]. Sampling time: end of shift.



Section 8. Exposure controls/personal protection

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.

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.

Recommended: Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals.

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.

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.

Section 8. Exposure controls/personal protection

Respiratory protection

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.

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	Clear, Liquid.
Color	Colorless to light yellow.
Odor	Gasoline
Odor threshold	0.025 ppm (Based on Gasoline)
pH	Not applicable. Based on Solubility in water (Very slightly soluble in water)
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	26.67 to 221.1°C (80 to 430°F)
Flash point	Closed cup: -42.778°C (-45°F)
Evaporation rate	Not available.
Flammability	Not applicable. Based on - Physical state
Lower and upper explosion limit/flammability limit	Lower: 1.3% Upper: 7.6% (Estimated.)
Vapor pressure	48.3 to 103.4 kPa (361.97 to 775.66 mm Hg) [37.8°C (100°F)]
Relative vapor density	3 to 4 [Air = 1]
Density	750 kg/m ³ (0.75 g/cm ³)
Solubility(ies)	

Media	Result
water	Very slightly soluble

Miscible with water	No.
Partition coefficient: n-octanol/water	>3
Auto-ignition temperature	257°C (494.6°F)
Decomposition temperature	Not available.
Viscosity	Kinematic: <20.5 mm ² /s (<20.5 cSt) at 40°C

Particle characteristics

Median particle size	Not applicable.
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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.



Section 10. Stability and reactivity

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	Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials. Chlorine and Fluorine
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
Gasoline	LC50 Inhalation Vapor	Rat	>5610 g/m ³ analytical	4 hours	Based on Gasoline
	LC50 Inhalation Vapor	Rat	>7630 mg/m ³ Nominal	4 hours	Based on Gasoline
	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on Gasoline
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Gasoline
Ethanol	LC50 Inhalation Vapor	Rat	124.7 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	116.9 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	133.8 mg/l	4 hours	Based on Ethanol
	LD50 Oral	Rat	10470 mg/kg	-	Based on Ethanol

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

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Gasoline	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol
	Rabbit	Skin - Non-irritant to	-	-	-	-	Based on Ethanol

Section 11. Toxicological information

skin.

Skin Causes skin irritation.

Eyes Causes serious eye irritation.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Gasoline	skin	Guinea pig	Not sensitizing	Based on Gasoline
Skin	Not classified. Based on available data, the classification criteria are not met.			

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Gasoline	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Gasoline
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Gasoline
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline vapor condensate
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline
Ethanol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Ethanol
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Ethanol
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Ethanol

Conclusion/Summary May cause genetic defects.

Carcinogenicity

Product/ingredient name	Test authority / Test number	Species	Route	Exposure	Result	Remarks
Gasoline	Equivalent to OECD 451	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	Based on Gasoline
	Equivalent to OECD 451	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	Based on Gasoline
Ethanol	Equivalent to OECD -	Rat	Oral	104 weeks	Negative - Oral - Unspecified	Based on Ethanol
	EPA OPPTS 870.4200	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	Based on Ethanol

Conclusion/Summary May cause cancer.



Section 11. Toxicological information

Classification

Product/ingredient name	OSHA	IARC	NTP
Gasoline	-	2B	-
Toluene	-	3	-
xylene	-	3	-
Benzene	+	1	Known to be a human carcinogen.
Ethylbenzene	-	2B	-
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.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Gasoline	-	-	Negative	Rat	Inhalation	14 days
	-	Negative	-	Rat	Inhalation	2 generation
Ethanol	-	-	Negative	Rat	Inhalation	18 days
	-	Positive	-	Rat	Oral	2 generation

Conclusion/Summary

Development: Suspected of damaging the unborn child.

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
Gasoline	Category 3	-	Narcotic effects
Toluene	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
1,2,4-Trimethylbenzene	Category 3	-	Respiratory tract irritation
Ethylbenzene	Category 3	-	Respiratory tract irritation
cyclohexane	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	-	hearing organs
Benzene	Category 1	-	blood system

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Inhalation	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 reduced fetal weight increase in fetal deaths skeletal malformations
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 reduced fetal weight increase in fetal deaths skeletal malformations

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

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

General	Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.
Carcinogenicity	May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	May cause genetic defects.
Teratogenicity	Suspected of damaging the unborn child.
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



Section 11. Toxicological information

Route	ATE value
Oral	>2000 mg/kg
Dermal	>2000 mg/kg
Inhalation (vapors)	>20 mg/l
Inhalation (dusts and mists)	>5 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.

Additional information Gasoline - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital). Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline: Additional toxicity information on components.

Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests.

Prolonged high level exposure to toluene or xylene has caused some degree of hearing loss in experimental animals.

Inhalation of very high concentrations of gasoline vapors and some of its components can result in cardiac sensitization and irregular heartbeats, leading to potentially fatal changes in heart rhythms. Injection of adrenaline-like agents may enhance this effect.

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

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Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.

Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Toluene: Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Fetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

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.

Ethylbenzene: The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100 to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung



Section 11. Toxicological information

weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice.

NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

This product contains trimethylbenzenes. These compounds cause irritation to the eyes, nose and respiratory tract. Repeated dermal exposure can defat and irritate the skin. Inhalation may cause dizziness and drowsiness. Studies in laboratory animals with mixtures of C9 aromatic hydrocarbons produced adverse effects on development such as increased fetal mortality, reduced fetal weight, and delayed ossification at high exposure concentrations. Effects were reduced if exposure was terminated prior to delivery. There was no evidence of reproductive toxicity.

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.

Ethanol - Human data: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring. Reduced birth weight and physical and mental defects occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. In humans high lifetime consumption of alcoholic beverages can be associated with certain cancers and effects on the liver. There is no evidence that these can be caused by exposure other than direct ingestion of alcoholic drinks (IARC 1988).

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Product/ingredient name	Species	Test/Result	Exposure	Effects	Remarks
Gasoline	Micro-organism	Acute EC50 15.41 mg/l Nominal Fresh water	40 hours	growth inhibition	-
	Algae	Acute EL50 3.1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Algae	Acute EL50 3.7 mg/l Nominal Fresh water	96 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute EL50 4.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on straight- run light gasoline
	Fish	Acute LL50 10 mg/l Nominal	96 hours	Mortality	Based on Naphtha

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	Fresh water			(petroleum), isomerisation	
Fish	Acute LL50 8.2 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), light alkylate	
Algae	Acute NOELR 0.5 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline	
Daphnia	Acute NOELR 0.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on Straight run gas oil	
Daphnia	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate	
Daphnia	Chronic EL50 >40 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate	
Fish	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species	
Fish	Chronic LL50 5.2 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed	
Daphnia	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate	
Daphnia	Chronic NOELR 16 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate	
Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed	
Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species	
soil, plants	Chronic PNEC >0.4 mg/kg	-	-	-	
Ethanol	Algae	EC50 675 mg/l	4 days	-	Based on Ethanol
	Aquatic plants	EC50 4432 mg/l	7 days	-	Based on Ethanol
	Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol



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Fish	Acute LC50 153 g/l	96 hours	-	Based on Ethanol
Fish	Acute LC50 14.2 g/l	96 hours	-	Based on Ethanol
Daphnia	Chronic LC50 2 mg/l	10 days	-	Based on Ethanol
Daphnia	Chronic LC50 9.6 mg/l	9 days	-	Based on Ethanol

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

Persistence and degradability

Expected to be biodegradable.

Product/ingredient name	Test	Result	Remarks
Ethanol	EPA	95 % - Readily - 15 days	Based on Ethanol
	EPA	84 % - Readily - 20 days	Based on Ethanol
	EPA	74 % - Readily - 5 days	Based on Ethanol
	EPA	74 % - Readily - 10 days	Based on Ethanol

Conclusion/Summary Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethylbenzene	-	-	Inherent

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 adverse effects No known significant effects or critical hazards.

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.

United States - RCRA Toxic hazardous waste "U" List

Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Xylene	1330-20-7	Listed	U239
Benzene (I,T)	71-43-2	Listed	U019
Cyclohexane (I)	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	-	-	-	-
UN proper shipping name	See: Special precautions for user RQ (Benzene, xylene)	See: Special precautions for user	See: Special precautions for user. Marine pollutant	See: Special precautions for user
Transport hazard class(es)	3 	3  	3  	3 
Packing group	II	II	II	II
Environmental hazards	No.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	Reportable quantity 263.16 lbs / 119.47 kg [42.082 gal / 159.3 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user

Proper classification to be determined at the time of shipment

Select UN number and Proper Shipping Name based on the ethanol content of the product:

Ethanol 0 - 10%: UN1203 GASOLINE

Ethanol >10 - 15%: UN3475 ETHANOL AND GASOLINE MIXTURE

Transport in bulk according to IMO instruments

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.

Category: gasoline and spirits



Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification
FLAMMABLE LIQUIDS - Category 1
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1
HNOC - Static-accumulating flammable liquid

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3.8
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	Ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	Naphthalene	91-20-3	0 - 0.5
Supplier notification	Toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3.8
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	Ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	Naphthalene	91-20-3	0 - 0.5

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: ETHYL ALCOHOL; TOLUENE; XYLENE; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE

New Jersey The following components are listed: ETHYL ALCOHOL; TOLUENE; XYLENES; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE; NAPHTHALENE

Pennsylvania The following components are listed: GASOLINE; ETHANOL; BENZENE, METHYL-; BENZENE, DIMETHYL-; BENZENE; PSEUDOCUMENE; BENZENE, ETHYL-; CYCLOHEXANE

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

⚠ WARNING: This product can expose you to chemicals including Benzene, Benzene and Benzene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Gasoline, Ethylbenzene, Naphthalene, Ethylbenzene, cumene, Ethylbenzene, Ethylbenzene, cumene, Naphthalene, Naphthalene, Naphthalene, acetaldehyde, Furan, Propylene oxide and Styrene, which are known to the State of California to cause cancer, and Toluene, Toluene, Toluene and Toluene, 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 (AIIIC) At least one component is not listed.

Canada inventory Not determined.

China inventory (IECSC) At least one component is not listed.

Japan inventory (CSCL) At least one component is not listed.

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Section 15. Regulatory information

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)	At least one component is not listed.
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	07/20/2024.
Date of previous issue	10/27/2022.
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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