SAFETY DATA SHEET

Biodiesel (all grades)

Revision Date: 10/10/2023

SECTION 1: IDENTIFICATION	
(a) PRODUCT IDENTIFIER: Biodiesel (all grades)	(b) OTHER MEANS OF IDENTIFICATION: Bio-Fuel Oil #2, Bio-Fuel Oil, B100 Biodiesel
	Product Group: Liquid **Chemical Family:**

(c) Recommended Use: Fuel

Restrictions on Use: Not to be used for anything other than recommended use.

(d) Manufacturer:

Colonial Pipeline Company. ● 1000 Lake Street ● Alpharetta, GA 30009 ● 678-762-2200

Fax: 678-762-2466 ● Email: info@colpipe.com ● Website: www.colpipe.com

(e) EMERGENCY PHONE NUMBER: US: 1-800-424-9300● INTL: +1-703-527-3887● 24 hours/day, 7 days/week

SECTION 2: HAZARDS IDENTIFICATION

The categories of Health Hazards as defined in OSHA 29 CFR 1910.1200 Hazard Communication Standard have been evaluated and are listed below. Refer to Sections 3, 8, and 11 for additional information.

Human Health Hazards

Hazard Classification	(a) Hazard Category	(b) Hazard Symbols	(b) Signal Word	(b) Hazard Statement	(b) Precautionary Statement
Acute Toxicity (Oral)	N/C	--	--	--	--
Acute Toxicity (Dermal)	N/C	--	--	--	--
Acute Toxicity (Inhalation)	4		Warning	Harmful if inhaled	P261, P271, P304/P340; P312
Skin Corrosion/Irritation	2		Warning	Causes skin irritation	Wear protective gloves P264, P280, P302/P352, P332/P313, P362/P364
Eye Damage/Irritation	N/C	--	--	--	--
Respiratory Sensitization	N/C	--	--	--	--
Skin Sensitization	N/C	--	--	--	--
Germ Cell Mutagenicity	1B		Danger	May cause genetic defects	Wear protective clothing P201, P202, P280, P308, P313, P405, P501

SECTION 2: HAZARDS IDENTIFICATION

The categories of Health Hazards as defined in OSHA 29 CFR 1910.1200 Hazard Communication Standard have been evaluated and are listed below. Refer to Sections 3, 8, and 11 for additional information.

Human Health Hazards

Hazard Classification	(a) Hazard Category	(b) Hazard Symbols	(b) Signal Word	(b) Hazard Statement	(b) Precautionary Statement
Carcinogenicity	1A		Danger	May cause cancer	Do not handle until all safety precautions have been read and understood P201, P202, P280, P308, P313, P405, P501
Reproductive Toxicity	N/C	--	--	--	--
Specific Target Organ Toxicity (STOT) Single-Exposure	1		Danger	May cause damage to blood if swallowed	Do not eat, drink, or smoke when using this product, P264, P301, P310, P405, P501
Specific Target Organ Toxicity (STOT) Repeated or Prolonged Exposure	2		Warning	May cause damage to blood, thymus, liver, and skin through prolonged or repeated exposure.	Get medical advice/attention if you feel unwell P260, P314, P501
Aspiration Hazard	1		Danger	May be fatal if swallowed and enters airways	If swallowed: Immediately call a poison center P301, P310, P405, P501

Physical Hazards

Hazard Classification	Hazard Category	Hazard Symbols	Signal Word	Hazard Statement	Precautionary Statement
Explosives	N/A	-	-	-	-
Flammable Gases	N/A	-	-	-	-
Flammable Aerosols	N/A	-	-	-	-
Oxidizing Gases	N/A	-	-	-	-
Gases Under Pressure	N/A	-	-	-	-
Flammable Liquids	3		Warning	Highly flammable liquid and vapor	-
Flammable Solids	N/A	-	-	-	-
Self-reactive Substances and Mixtures	N/A	-	-	-	-

Physical Hazards					
Hazard Classification	Hazard Category	Hazard Symbols	Signal Word	Hazard Statement	Precautionary Statement
Substances and mixtures which react with water to emit flammable gases	N/A	-	-	-	-
Oxidizing Liquids	N/A	-	-	-	-
Oxidizing Solids	N/A	-	-	-	-
Organic Peroxides	N/A	-	-	-	-
Corrosive to Metals	N/A	-	-	-	-

Health Hazard Precautionary Statement	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P233	Keep container tightly closed.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/eye protection/face protection.
P301	If swallowed:
P310	Immediately call a poison center or doctor.
P304	If inhaled:
P340	Remove person to fresh air and keep comfortable for breathing.
P305	If in eyes: Rinse cautiously with water for several minutes.
P351	Remove contact lenses.
P338	Continue rinsing.
P337	If eye irritation persists.
P313	Get medical advice/attention.
P308	If exposed or concerned:
P312	Call a poison center or doctor if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P403	Store in a well-ventilated place.
P405	Store locked up.
P501	Dispose of contents/container to an approved facility.

Physical Hazard Precautionary Statement	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P235	Keep cool.
P240	Ground/Bond container and receiving equipment.

Physical Hazard Precautionary Statement	
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P264	Wash all body parts in contact with material thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P303	If on skin or hair:
P352	Wash with plenty of water
P353	Rinse skin with water/shower.
P361	Remove/take off immediately all contaminated clothing.
P362/P364	Take off contaminated clothing and wash it before reuse.
P332/P313	If skin irritation occurs: Get medical advice/attention.
P370	In case of fire.
P378	Use dry chemical, carbon dioxide, or foam for extinction.
P403	Store in a well-ventilated place.
P501	Dispose of contents/container to an approved disposal facility.

Hazard Classification	(a) Hazard Category	(b) Hazard Symbols	(b) Signal Word	(b) Hazard Statement	(b) Precautionary Statement
Environmental Hazards					
Acute Toxicity to the Aquatic Environment	N/C	--	--	--	--
Chronic Toxicity to the Aquatic Environment	2		-	Toxic to aquatic life with long lasting effects	-

(d) Unknown toxicity: Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 5%

(e) Unknown ecotoxicity: Percentage of the mixture consisting of ingredient(s) of unknown hazard to the aquatic environment: 5%

Medical conditions which are generally recognized as being aggravated by exposure: Individuals who are deficient in the enzyme glucose-6-phosphate dehydrogenase may have increase susceptibility to the hemolytic effects of naphthalene.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS[1]			
(a) Chemical name (b) (Common name and synonyms)	**(c) CAS No.**	**(c) EC No.**	**(b) % Weight***
Distillates (petroleum), full-range straight-run middle	68814-87-9	272-341-5	60 – 100 %
Distillates (petroleum), light catalytic cracked	64741-59-9	265-060-4	30 – 60 %
Benzene	71-43-2	200-753-7	0.1 – 1 %
Naphthalene	91-20-3	202-049-5	0 – 3%

[1] May contain multifunctional additives and/or dyes including Fatty Acid Methyl Esters (FAME) found in biodiesel fuels

SECTION 4: FIRST AID MEASURES

(a) Description of necessary measures:

INHALATION:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Ger medical attention. If unconscious, place in recover position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.
INGESTION:	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at res in. apposition comfortable for breathing. If material has been swallowed and the exposed person in conscious give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do no induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.
SKIN CONTACT:	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
EYE CONTACT:	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes: Get medical advice/attention.

(b) Most important symptoms/effects:

- **Acute:** Headache, drowsiness, loss of mental alertness and coordination, dizziness, nausea
- **Delayed:** Dry skin and possible irritation with repeated or prolonged exposure

(c) Indication of immediate medical attention and special treatment: Significant over-exposure

Notes to physician: Treat symptomatically and supportively. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

SECTION 5: FIRE FIGHTING MEASURES

(a) Suitable extinguishing media: Foam, dry chemical, carbon dioxide, water spray can cool the fire but may not extinguish the fire.

Unsuitable extinguishing media: High volume water jet. It will spread the fire.

(b) Specific hazards arising from the chemical: Flammable liquid and vapor. It can be ignited by heat, spark, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, and pagers which have not been certified as intrinsically safe). Vapors can travel considerable distances to spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors can be heavier than air and can accumulate in low-lying areas. If container is not properly cooled, it can rupture in the heat of a fire. Hazardous combustion/decomposition products may be released by this material when exposed to heat or fire. Use caution and wear appropriate PPE, including respiratory protection.

(c) Special protective equipment and precautions for fire-fighters: Shut off flow immediately if it can be done safely. Isolate the area from personnel. Keep personnel upwind from fire. Fire fighters should use appropriate SCBA while in close proximity to fire and vapors coming from product. Move personnel upwind of any smoke or vapors.

(d) Flammability/Explosivity: NFPA RATING Hazard Class:

Health = 1
Fire = 2
Instability = 0
(0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

(e) Hazardous Decomposition Products: Normal combustion forms carbon dioxide and water vapor; incomplete combustion may produce carbon monoxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

(a) Personal precautions, Protective equipment, and Emergency procedures: No action shall be taken involving any personal risk without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk though spilled material. Shut off all ignition sources. No flares, smoking, or flames in hazard area. Avoid breathing vapor or mish. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

(b)Methods and materials for containment and cleaning up: Remove sources of ignition. Beware of explosion danger. Stop flow of product, if it is safe to do so. Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended if possible. Dike the spilled material. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water, remove with appropriate methods (e.g., skimming, booms, or absorbent boom). In the case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations. Recommended measures are based on the most likely spill scenarios for this material; however, local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

Environmental Precautions: Prevent product from entering drains and sanitary sewers. Prevent further leakage or spillage if safe to do so. If product impacts rivers, lakes, drains, or any other body of water, contact appropriate authorities. Consult with an environmental professional for the federal, state, and local cleanup and reporting requirements.

SECTION 7: HANDLING AND STORAGE

(a) Precautions for safe handling: Keep away from ignition sources such as heat/sparks/open flame. Take precautionary measures against static discharge. Non-sparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink, or smoke when using this product. Do not breathe vapors or mists. Use only outdoors or in well-ventilated area. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment.

Beware of accumulation in confined spaces and low-lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static-electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see

appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

Static Accumulation Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

(b) Conditions for safe storage, including any incompatibilities: May be incompatible with strong oxidizing agents such as nitric acid, peroxides, and perchlorates. Potentially Incompatible Absorbents: None identified.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:				
Components	**(a) OSHA PEL[1]**	**(a) ACGIH TLV[2]**	**(a) Manufacturer REL[3]**	**(a) IDLH[4]**
Distillates (petroleum), full-range straight-run middle				
Distillates (petroleum), light catalytic cracked				
Benzene	1 ppm TWA 5 ppm STEL	0.5 ppm TWA 2.5 ppm STEL	NA	500 ppm
Naphthalene	10 ppm TWA	10 ppm TWA 15 ppm STEL	NA	250 ppm

Notes:

1. OSHA PEL are 8-hour TWA (Time-weighted average) concentrations unless otherwise noted. A ("C") designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short-Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday.
2. Threshold Limit Values – TWA established by the ACGIH represents the TWA concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed , day after day, for a working lifetime without adverse effect; Short-Term Exposure Limit (TLV-STEL) represents a 15-minute TWA exposure that should not be exceeded at any time during a work day. ACGIH TLV's are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
3. The exposure limits developed by the manufacturer are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of a respiratory selection criteria.

(b) Appropriate engineering controls: Provide adequate general and local ventilation to maintain airborne chemical concentrations below applicable exposure limits, to prevent accumulation of flammable vapors and formation of

explosive atmosphere, and to prevent formation of an oxygen deficient environment. Use non-sparking explosion proof, totally enclosed ventilation systems. Only use non-sparking tools, if engineering controls or work activities are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

(c) Individual protection measures:

Eye/face protection: Wear approved safety glasses/goggles with side shields and/or an appropriate full-face shield. All eye protection should be selected and worn in accordance with the OSHA eye and face protection guidelines outlined in 29 CFR 1910.132 and 1910.133; and/or CSA Standard CAN/CSA-Z94.3-92.

Skin Protection: Wear appropriate clothing to prevent skin contact. Thoroughly decontaminate any articles of clothing that come into contact with product. The use of gloves is advised to prevent skin exposure and contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and conditions, additional protection may be necessary to prevent skin contact including items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. All PPE should be selected and worn in accordance with 29 CFR 1910.132 and 1910.138. Flame resistant clothing that meets the NFPA 212 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory protection: A positive pressure air line with full-face mask and escape bottle or a self-contained breathing apparatus (SCBA) should be available in case of an emergency and cases when the IDLH is exceeded. All respirators should be selected and worn in accordance with 29 CFR 1910.132 and 1910.134, and/or CSA Standard CAN/CSA-Z94.4-11.

(d) General hygiene considerations: Always observe good personal hygiene measures, such as washing after handling the material, and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Eye-wash and quick-drench shower facilities should be available in the work area.

General: Wear chemical protective equipment. Launder contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties	
(a) Appearance:	A bright and clear liquid
(b) Odor:	Petroleum-like
(c) Odor Threshold:	N/A
(d) pH:	N/A
(e) Melting point/Freezing point:	N/A
(f) Boiling point/range:	148 °C (298.4 °F)
(g) Flash Point:	Closed cup: >51.67°C (>125°F)
(h) Evaporation rate:	Slow; varies with conditions
(i) Flammability:	N/A
(j) UFL/LFL or UEL/LEL:	Lower: 0.5% Upper: 4.4%
(k) Vapor pressure:	0.0027 kPa (0.02 mm Hg) [20°C]

Physical and Chemical Properties	
(l) Vapor density (air =1.0):	N/A
(m) Relative density (water = 1.0):	0.85
(n) Solubility in water:	Negligible
(o) Partition coefficient:	N/A
(p) Auto-ignition temperature:	260°C (500°F)
(q) Decomposition temperature:	N/A
(r) Viscosity:	Kinematic (40°C(104°F)): 0.019 to 0.041 cm^2/s (1.9 to 4.1 cSt)

SECTION 10: STABILITY AND REACTIVITY

(a) **Reactivity:** No specific test data related to reactivity available for this product or its ingredients. When heated sufficiently or when ignited in the presence of air oxygen, Biodiesel will burn exothermically to produce carbon dioxide and water.

(b) **Chemical stability:** Material is stable under normal conditions.

(c) **Possibility of hazardous reactions:** Under normal conditions of storage and use, hazardous reaction will not occur

(d) **Conditions to avoid (e.g., static discharge, shock, or vibration):** Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

(e) **Incompatible materials:** Oxidizing materials

(f) **Hazardous decomposition products:** Carbon dioxide, carbon monoxide, smoke (non-combusted hydrocarbons). Oxides of nitrogen may also be formed.

(g) **Hazardous Polymerization:** Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

(a) **Information on likely routes of exposure:**

- **Inhalation:** causes irritation of upper respiratory tract; central nervous system stimulation followed by depression of varying degrees ranging from dizziness, headache, and incoordination to anesthesia, coma, and respiratory arrest; irregular heartbeat is dangerous complication.
- **Accidental Ingestion:** causes irritation of mucous membranes of throat, esophagus, and stomach; stimulation followed by depression of central nervous system; irregular heartbeat.
- **Skin contact:** May cause skin irritation with prolonged or repeated contact.
- **Eye contact:** May cause moderate irritation.

(b) **Symptoms related to physical, chemical and toxicological characteristics:** Skin contact may cause dermal irritation. Excessive inhalational exposures may cause irritation to nose, throat, lungs, and respiratory tract. Central nervous system effects may include headache, dizziness, loss or balance and coordination, unconsciousness, and respiratory failure

(c) **Delayed and immediate effects and also chronic effects from short- and long-term exposure:** Chronic skin exposures can lead to dermatitis. Laboratory animal studies of petroleum products by the dermal and inhalation exposure routes through prolonged or repeated exposure have demonstrated toxicity to the liver, blood, spleen and thymus.

(d) **Numerical measures of toxicity:** No toxicity data is available for Biodiesel as a whole.

Acute Toxicity (Oral)				
Chemical	Tested % Weight	Model	LD_{50} Range	Reference
Distillates (petroleum), full-range straight-run middle	100%	Rat	>5,000 mg/kg	ECHA, 2020
Distillates (petroleum), light catalytic cracked	100%	Rat	3,200 mg/kg	ECHA, 2020
Benzene	100%	Rat	3,306 mg/kg	Lewis, R.J. Sr (ed) Sax's Dangerous Properties of Industrial Materials, 2004
Naphthalene	100%	Mouse	533 mg/kg	ECHA, 2020

Acute Toxicity (Dermal)				
Chemical	Tested % Weight	Model	LD_{50} Range	Reference
Distillates (petroleum), full-range straight-run middle	100%	Rabbit	>2,000 mg/kg	ECHA, 2020
Distillates (petroleum), light catalytic cracked	100%	Rabbit	>2,000 mg/kg	ECHA, 2020
Benzene		No data available		
Naphthalene	100%	Rat	>5,000 mg/kg	ECHA, 2020

Acute Toxicity (Inhalation)			
Chemical	Model	LC_{50} Range (mg/L)	Reference
Distillates (petroleum), full-range straight-run middle	Rat	>2.5 mg/L	ECHA, 2020
Distillates (petroleum), light catalytic cracked	Rat	3.4 mg/L	Prior manufacturer SDS
Benzene	Rat	31.9 mg/L	Lewis, R.J. Sr (ed) Sax's Dangerous Properties of Industrial Materials, 2004
Naphthalene	Rat	>0.4 mg/L	ECHA, 2020

Skin Damage/Irritation			
Chemical	Model	Symptom	Reference
Distillates (petroleum), full-range straight-run middle	Rabbit	Slight to moderate erythema present following 24-hour	ECHA, 2020

		exposure to 0.5 ml of pure substance. Resolved within 14 days of treatment.	
Distillates (petroleum), light catalytic cracked	Rabbit	Skin – severe irritant with 500 mg exposure	Prior manufacturer SDS
Benzene	Human	Defatting of keratin layer causing erythema, vesiculation and dry, scaly dermatitis. Report of skin irritation following high level (> 60 ppm) occupational exposures.	Patty's Industrial Hygiene and Toxicology, 2001; Midzenski et al., 1992
Naphthalene	Rat	Not Irritating	ECHA, 2020

Eye Damage/Irritation			
Chemical	Model	Symptom	Reference
Distillates (petroleum), full-range straight-run middle	Rabbit	Not irritating	ECHA, 2020
Distillates (petroleum), light catalytic cracked	Rabbit	Not Irritating	ECHA, 2020
Benzene	Rabbit	Moderate to severe eye irritation	Lewis, R.J. Sr (ed) Sax's Dangerous Properties of Industrial Materials, 2004
Naphthalene	Rat	Not Irritating	ECHA, 2020

Respiratory Sensitization
No data available on respiratory sensitization

Skin Sensitization			
Chemical	Model	Symptom	Reference
Distillates (petroleum), full-range straight-run middle		Not sensitizing	ECHA, 2020
Distillates (petroleum), light catalytic cracked		Not sensitizing	ECHA, 2020
Benzene		No data available	
Naphthalene	Rat	Not sensitizing	ECHA, 2020

Germ Cell Mutagenicity		
Chemical	Test/Result	Reference
Distillates (petroleum), full-range straight-run middle	Results of in vitro and in vivo assays were predominantly negative	ECHA, 2020
Distillates (petroleum), light catalytic cracked	Results of in vitro and in vivo assays were predominantly negative	ATSDR, 1995
Benzene	Positive in vivo chromosomal aberration and micronuclei induction.	EU, 2008; European Union Risk Assessment Report on Benzene.

Naphthalene	Results of in vivo and invitro genotoxicity testing predominantly negative	ECHA, 2020

Carcinogenicity				
Compound	ACGIH	IARC	NTP	OSHA
Distillates (petroleum), full-range straight-run middle	Not Classified	Not Classified	Not Classified	Not Classified
Distillates (petroleum), light catalytic cracked	Not Classified	2A – Probably carcinogenic to humans	Not Classified	Not Classified
Benzene	A1 – Confirmed Human Carcinogen	Group 1 – Carcinogenic to Humans	Known to be a human carcinogen	Carcinogen
Naphthalene	A4 – Not classifiable as a human carcinogen	2B – Possibly carcinogenic to humans	Reasonably anticipated to be a human carcinogen	Not classified

Reproductive Toxicity		
Chemical	Test/Result	Reference
Distillates (petroleum), full-range straight-run middle	Insufficient Data	ECHA, 2020
Distillates (petroleum), light catalytic cracked	Insufficient Data	ECHA, 2020
Benzene	Mostly negative findings for reproductive end developmental endpoints	US EPA, 2002; Toxicological Review of benzene
Naphthalene	Mostly negative findings except some high dose effects relating to maternal toxicity	ECHA, 2020

Specific Target Organ Toxicity (STOT) – Single Exposure				
Chemical	Route/Organism	Dose	Effect	Reference
Distillates (petroleum), full-range straight-run middle	Dermal/Rabbit	0.3 mL	Severe photoirritation following UV-A exposure for 6 hours	ECHA, 2020
Distillates (petroleum), light catalytic cracked		No data available		
Benzene	Inhalation/Human	Unspecified	CNS Effects (dizziness, headache, nausea, euphoria)	HSDB, 2014
Naphthalene	Oral/Human	Unspecified	Hemolytic anemia and hypotension	ECHA, 2020

Specific Target Organ Toxicity (STOT) – Repeated Exposure

Chemical	Test	Result	Reference
Distillates (petroleum), full-range straight-run middle	No data available		
Distillates (petroleum), light catalytic cracked	90-day study (dermal)	Blood, thymus, liver effects at 125 mg/kg in males; 250 mg/kg in females	ECHA, 2020
Benzene	90-day toxicity study (inhalation)	Hematological effects at 300 ppm	Ward et al., 1985
Naphthalene	No data available		

Aspiration Hazard		
Chemical	Assessment	Reference
Distillates (petroleum), full-range straight-run middle	No data available; presumed aspiration hazard based on kinematic viscosity of <20.5 mm^2/s at 40°C	ECHA, 2020
Distillates (petroleum), light catalytic cracked	Aspiration of hydrocarbons such as fuel oils can cause hydrocarbon pneumonitis and secondary infections including pneumonia	ATSDR, 1995
Benzene	No data available	
Naphthalene	No data available	

SECTION 12: ECOLOGICAL INFORMATION

This product has no known adverse ecological effects.

(a) Ecotoxicity: This material is expected to be potentially toxic to aquatic organisms. Ecotoxicity data have not been determined specifically for this mixture.

(b) Persistence and degradability: Hydrocarbon mixtures are not considered readily biodegradable and most nonvolatile components are not biodegradable. Some components are persistent in water. Lighter components will tend to evaporate but the heavier components may become dispersed in water or absorbed to soil or sediment.

(c) Bioaccumulative potential: The octanol water coefficient (Log K_{ow}) values for the hydrocarbon components of this material range from less than 2 to greater than 6, and therefore would be regarded as having the potential to bioaccumulate.

(d) Mobility in soil: The log K_{oc} of petroleum distillates is reported to range from 1.8 to 3.2, a range that suggests low to no mobility in soil.

(e) Other adverse effects: coating with this mixture can kill birds, plankton, aquatic life, algae, and fish

SECTION 13: DISPOSAL CONSIDERATIONS

Description of waste residues and safe handling: It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations. Dispose of waste in accordance with the federal, state, and local laws and regulations. This material may be considered a RCRA hazardous waste under 40 CFR 261-271 due to its

ignitability. The product can be an ignitable hazardous waste. It is recommended that this product, in any form, be incinerated in suitable combustion chamber for disposal. If possible, use a flare.

Methods of disposal: 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 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 empty 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

- **(a)** UN number: UN1268
- **(b)** UN proper shipping name: PETROLEUM DISTILLATES, N.O.S
- **(c)** Transport Hazard classes: 3
- **(d)** Packing group: III
- **(e)** Environmental hazards
    i. Marine pollutant: No applicable information
- **(f)** Transport in bulk
    i. IBC Code – No applicable information
    ii. Annex II of MARPOL 73/78 - No applicable information
- **(g)** Special precautions: Not available

SECTION 15: REGULATORY INFORMATION

U.S. Federal regulations:

TSCA 8(a) PAIR: Naphthalene
TSCA 8(a) IUR Exempt/Partial exemption: All components are listed or exempted
SARA 302/304/311/312 extremely hazardous substances: No products were found
SARA 302/304 emergency planning and notification: No products were found
SARA 302/304/311/312 hazardous chemicals: Naphthalene; Benzene; Distillates (petroleum), light catalytic cracked;
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Naphthalene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Benzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Distillates (petroleum), light catalytic cracked: Delayed (chronic) health hazard;
Clean Water Act (CWA) 307: Benzene; Naphthalene
Clean Water Act (CWA) 311: Benzene; Naphthalene

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Listed

Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Listed

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	Component	CAS number	Concentration
Form R – Reporting requirements	Benzene	71-43-2	0.1 - 1 %
	Naphthalene	91-20-3	0 - 3 %
Supplier notification	Benzene	71-43-2	0.1 - 1 %
	Naphthalene	91-20-3	0 - 3 %

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

State regulations

Massachusetts: The following components are listed: Benzene; Naphthalene
New York The following components are listed: Benzene; Naphthalene
New Jersey The following components are listed: Benzene; Naphthalene
Pennsylvania The following components are listed: Benzene; Naphthalene

California Proposition 65: Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): ethyl benzene, benzene, toluene.

Component	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Benzene	Yes	Yes	6.4 ug/day (ingestion) 13 ug/day (inhalation)	24 ug/day (ingestion) 49 ug/day (inhalation)
Naphthalene	Yes	No	Yes	No

SECTION 16: OTHER INFORMATION

Date of Preparation or Last Change: 10/10/2023

Abbreviations and acronyms:

N/C – Not Classified – No concern based on consideration of the sum of available data.
N/D – Not Determined
N/A – Not Applicable or Not Available
N/R – Not Regulated
CAS – Chemical Abstract Service
EC – European Community
STOT – Specific Target Organ Toxicity
OSHA – US Occupational Safety and Health Organization

PEL – OSHA Permissible Exposure Limits
ACGIH – American Conference of Governmental Industrial Hygienists
TLV – ACGIH® Threshold Limit Values
REL – Recommended Exposure Limits
IDLH – Immediately Dangerous to Life or Health
TWA – Time Weighted Average – Average exposure over a specified period of time (i.e., 8 hours)
STEL - a 15-minute TWA exposure that should not be exceeded at any time during a work day.
Ceiling – Exposure limit which shall at no time be exceeded during the work day.
NE – None Established
APF – Assigned Protection Factor – the level of respiratory protection that a respirator is expected to provide.
UEL – Upper Explosive Limit – Highest concentration (percentage) of a gas or vapor in air capable of producing a flash fire in the presence of an ignition source
LEL – Lower Explosive Limit – Lowest concentration (percentage) of a gas or vapor in air capable of producing a flash fire in the presence of an ignition source.
UFL – Upper Flammability Limit - Maximum concentration of vapor in air above which propagation of a flame will not occur in the presence of an ignition source.
LFL – Lowest concentration at which a flammable mixture of gas or vapor in air can ignite at a given temperature and pressure.
IARC – International Agency for Research on Cancer
NTP – National Toxicology Program
NIOSH- National Institute for Occupational Safety and Health
NOAA – National Oceanic and Atmospheric Administration
GHS - Globally Harmonized System of Classification and Labeling of Chemicals
RTECS – Registry of Toxic Effects of Chemical Substances
HSDB – Hazardous Substances Data Bank

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