Light Cycle Oil

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 10/27/2022 Date of Issue: 07/30/2014 Supersedes Date: 07/30/2014 Version: 2.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Light Cycle Oil

Synonyms: Light Cycle Oil, Middle Distillate

1.2. Intended Use of the Product

Use of the Substance/Mixture: This product is intended for use as a refinery feedstock, fuel, or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment

1.3. Name, Address, and Telephone of the Responsible Party

Company

Delek US
200 Refinery Road
Big Spring, TX 79720
Phone #: 432-263-7661

Delek US
365 S. Levee Road
Krotz Springs, LA 70750
Phone #: 337-566-0175

Delek US
425 N. McMurrey Drive
Tyler, TX 75702
Phone #: 903-579-3400

Delek US
1000 Mc Henry St.
El Dorado, AR 71730
Phone #: 615-771-6701

1.4. Emergency Telephone Number

Emergency Number : 800-424-9300
CHEMTREC – TOLL FREE 24 HOUR EMERGENCY TELEPHONE NUMBER

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Flammable liquids Category 3	H226
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation Category 2	H315
Skin sensitization, Category 1	H317
Carcinogenicity Category 1B	H350
Reproductive toxicity Category 2	H361
Specific target organ toxicity (repeated exposure) Category 2	H373
Aspiration hazard Category 1	H304
Hazardous to the aquatic environment - Acute Hazard Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H226 - Flammable liquid and vapor.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H332 - Harmful if inhaled.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs (blood, thymus) through prolonged or repeated exposure (Dermal).
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe vapors, mist, spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.
P301+P310 - If swallowed: Immediately call a poison center or doctor.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see section 4 on this SDS).
P331 - Do NOT induce vomiting.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal, and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant. Diesel Particulate Matter (DPM) is a component of diesel exhaust both of which can cause headache, dizziness, and irritation to the eyes, nose, and throat. Prolonged exposure to DPM and diesel exhaust can also increase the risk of respiratory, cardiopulmonary, and lung cancer.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Distillates, petroleum, light catalytic cracked	Distillates (petroleum), light catalytic cracked; Cracked gasoil [A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C9 through C25 and boiling in the range of approximately 150°C to 400°C (302°F to 752°F). It contains a relatively large proportion of bicyclic aromatic hydrocarbons.] / Distillates, petroleum, light catalytic cracked (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C9-25 and boiling in the range of approximately 150-400°C. It contains a relatively large proportion of bicyclic aromatic hydrocarbons.) / Distillates (petroleum), light catalytic cracked - cracked gas oil / Distillates (petroleum), light catalytic cracked / Petroleum distillates, light catalytic cracked	(CAS-No.) 64741-59-9	100	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Carc. 1B, H350 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Contains	Synonyms	Product Identifier	%	GHS US classification
Naphthalene	Naphthalene, molten / Naphthalene, crude / Naphthalenes / Moth balls	(CAS-No.) 91-20-3	0.1 – 3	Flam. Sol. 2, H228 Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Comb. Dust
Polycyclic aromatic hydrocarbons	Aromatic hydrocarbons, polycyclic / PAHs / PAH / HAP / Hydrocarbons, aromatic, polycyclic / Poly(2+)cyclic aromatics hydrocarbons / Polynuclear aromatic hydrocarbons / Aromatic polycyclic hydrocarbons / Polycyclic aromatic hydrocarbons, congeners of	(CAS-No.) 130498-29-2	< 1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361 STOT SE 3, H335
Hydrogen sulfide	Hydrogen sulfide (H2S) / Hydrogen sulphide / Sulfur hydride / Dihydrogen sulphide / hydrogen sulfide / Hydrogen sulphide, hydrogen sulfide / Sulfane	(CAS-No.) 7783-06-4	0.1 – 0.2	Flam. Gas 1, H220 Acute Tox. 2 (Inhalation:gas), H330 Eye Irrit. 2A, H319 STOT SE 1, H370 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

First-aid Measures After Skin Contact: Immediately remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. After rinsing with water, then wash with plenty of soap and water. Obtain medical attention if irritation/rash develops or persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Place affected person on their side. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: Harmful if inhaled. May be fatal if swallowed and enters airways. May cause cancer. May cause damage to organs (blood, thymus) through prolonged or repeated exposure (Dermal). Suspected of damaging fertility or the unborn child. Skin sensitization. Causes skin irritation.

Symptoms/Injuries After Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

Chronic Symptoms: May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (blood, thymus) through prolonged or repeated exposure (Dermal). May cause an allergic skin reaction.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO_2). Water may be ineffective but water should be used to keep fire-exposed container cool.

Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Flammable liquid and vapor. Will float and can be reignited on water surface. Vapors may travel to source of ignition and flash back.

Explosion Hazard: May form flammable or explosive vapor-air mixture.

Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO2). Nitrogen oxides. Sulfur oxides. Hydrocarbons. Hydrogen sulfide. Smoke.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources first, then ventilate the area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: As an immediate precautionary measure, isolate spill or leak area in all directions. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Ventilate area.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Use only non-sparking tools. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: When heated to decomposition, emits toxic fumes. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal, and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant. Diesel Particulate Matter (DPM) is a component of diesel exhaust both of which can cause headache, dizziness, and irritation to the eyes, nose, and throat. Prolonged exposure to DPM and diesel exhaust can also increase the risk of respiratory, cardiopulmonary, and lung cancer. Handle empty containers with care because residual vapors are flammable.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe vapors, mist, spray. Do not get in eyes, on skin, or on clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Use explosion-proof electrical, ventilating, and lighting equipment. Ground and bond container and receiving equipment. Take action to prevent static discharges. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool place. Store in a well-ventilated place. Keep container tightly closed. Store locked up/in a secure area. Keep/Store away from extremely high or low temperatures, ignition sources, direct sunlight, incompatible materials. Keep in fireproof place.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Amines. Halogenated compounds.

7.3. Specific End Use(s)

This product is intended for use as a refinery feedstock, fuel, or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Polycyclic aromatic hydrocarbons (130498-29-2)		
USA ACGIH	BEI (BLV)	2.5 µg/l Parameter: 1-Hydroxypyrene with hydrolysis - Medium: urine - Sampling time: end of shift at end of workweek (background) Parameter: 3-Hydroxybenzo(a)pyrene with hydrolysis - Medium: urine - Sampling time: end of shift at end of workweek (nonquantitative)

Naphthalene (91-20-3)		
USA ACGIH	ACGIH OEL TWA [ppm]	10 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans,Skin - potential significant contribution to overall exposure by the cutaneous route

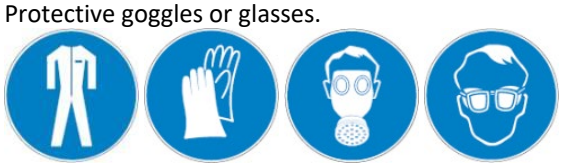
USA ACGIH	BEI (BLV)	Parameter: 1-Naphthol with hydrolysis plus 2-Naphthol with hydrolysis - Sampling time: end of shift (nonquantitative, nonspecific)
USA NIOSH	NIOSH REL (TWA)	50 mg/m³
USA NIOSH	NIOSH REL TWA [ppm]	10 ppm
USA NIOSH	NIOSH REL (STEL)	75 mg/m³
USA NIOSH	NIOSH REL STEL [ppm]	15 ppm
USA IDLH	IDLH [ppm]	250 ppm
USA OSHA	OSHA PEL (TWA) [1]	50 mg/m³
USA OSHA	OSHA PEL (TWA) [2]	10 ppm

Hydrogen sulfide (7783-06-4)		
USA ACGIH	ACGIH OEL TWA [ppm]	1 ppm
USA ACGIH	ACGIH OEL STEL [ppm]	5 ppm
USA NIOSH	NIOSH REL (Ceiling)	15 mg/m³
USA NIOSH	NIOSH REL C [ppm]	10 ppm
USA IDLH	IDLH [ppm]	100 ppm
USA OSHA	OSHA PEL C [ppm]	20 ppm
USA OSHA	Acceptable Maximum Peak Above The Acceptable Ceiling Concentration For An 8-Hr Shift	50 ppm Peak (10 minutes once, only if no other measurable exposure occurs)

8.2. Exposure Controls

Appropriate Engineering Controls : Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Gas detectors should be used when toxic gases may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment : Protective clothing. Gloves. Insufficient ventilation: wear respiratory protection. Protective goggles or glasses.



Materials for Protective Clothing : Wear fire/flame resistant/retardant clothing. Chemically resistant materials and fabrics.

Hand Protection : Wear protective gloves.

Eye and Face Protection : Goggles or safety glasses with side-shields. Wear face shield where splash hazard exists.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information : When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State : Liquid

Appearance : Straw. Clear.

Odor : Kerosene-like.

Odor Threshold : No data available

pH : No data available

Evaporation Rate : No data available

Melting Point : No data available

Freezing Point : No data available

Boiling Point : 149 – 454 °C (300°F - 850°F)

Flash Point	:	60 – 88 °C (140°F - 190°F)
Auto-ignition Temperature	:	> 260 °C (500°F)
Decomposition Temperature	:	No data available
Flammability	:	Not applicable
Vapor Pressure	:	< 0.7 kPa (<0.53 mmH)@20°C (68°F)
Relative Vapor Density at 20°C	:	3 – 7 (Air = 1)
Relative Density	:	No data available
Specific Gravity	:	0.84 - 0.93 (Water =1) @15.56°C (60°F)
Solubility	:	Negligible.
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Lower Flammable Limit	:	0.4 %
Upper Flammable Limit	:	8 %

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reacts violently with strong oxidizers. Increased risk of fire or explosion.

10.2. Chemical Stability

Flammable liquid and vapor. May form flammable or explosive vapor-air mixture.

10.3. Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials

Strong acids, strong bases, strong oxidizers. Amines. Halogenated compounds.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Hydrogen sulfide. Nitrogen oxides. Sulfur oxides. Hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Harmful if inhaled.

Light Cycle Oil	
ATE (Dust/Mist)	4.65 mg/l/4h

Distillates, petroleum, light catalytic cracked (64741-59-9)	
LD50 Oral Rat	6790 – 7180 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	4.65 mg/l (Exposure time: 4 h)

Naphthalene (91-20-3)	
LD50 Oral Rat	533 – 710 mg/kg

Hydrogen sulfide (7783-06-4)	
LC50 Inhalation Rat	444 ppm/4h

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer.

Naphthalene (91-20-3)	
IARC group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Reproductive Toxicity: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs (blood, thymus) through prolonged or repeated exposure (Dermal).

Aspiration Hazard: May be fatal if swallowed and enters airways.

Symptoms/Injuries After Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.

Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Aspiration into the lungs can occur during ingestion or vomiting and may cause lung injury.

Chronic Symptoms: May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (blood, thymus) through prolonged or repeated exposure (Dermal). May cause an allergic skin reaction.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life with long lasting effects.

Distillates, petroleum, light catalytic cracked (64741-59-9)	
LC50 Fish 1	7.3 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static])
EC50 - Crustacea [1]	0.32 mg/l (Exposure time: 48h)
ErC50 (Algae)	0.51 mg/l (Exposure time: 72 h)
NOEC Chronic Crustacea	0.038 mg/l

Naphthalene (91-20-3)	
LC50 Fish 1	5.74 – 6.44 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	2.16 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	1.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 - Crustacea [2]	1.96 mg/l (Exposure time: 48 h - Species: Daphnia magna [Flow through])
ErC50 (Algae)	0.41 mg/l
NOEC Chronic Fish	0.12 mg/l
NOEC Chronic Crustacea	0.6 mg/l

Hydrogen sulfide (7783-06-4)	
LC50 Fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
LC50 Fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

12.2. Persistence and Degradability

Light Cycle Oil	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Light Cycle Oil	
Bioaccumulative Potential	Not established.

Naphthalene (91-20-3)	
BCF Fish 1	36.5 – 168 (whole body w.w.)
Partition coefficient n-octanol/water (Log Pow)	3.4 (at 25 °C (at pH 7-7.5)

Hydrogen sulfide (7783-06-4)	
BCF Fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water (Log Pow)	0.45 (at 25 °C)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment. Middle distillates are potentially toxic to freshwater and saltwater ecosystems. Distillate fuels will normally float on water. In stagnant or slow-flowing waterways, a hydrocarbon layer can cover a large surface area. As a result, this oil layer can limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can cause a fish kill or create an anaerobic environment. Also, this coating action can also kill plankton, algae, and water birds.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology - Waste Materials: This material is hazardous to the aquatic environment. Keep out of sewers and waterways. Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : PETROLEUM DISTILLATES, N.O.S.
Hazard Class : 3
Identification Number : UN1268
Label Codes : 3

Packing Group : III
Marine Pollutant : Marine pollutant
ERG Number : 128

14.2. In Accordance with IMDG

Proper Shipping Name : PETROLEUM DISTILLATES, N.O.S.
Hazard Class : 3
Identification Number : UN1268
Packing Group : III
Label Codes : 3
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E

Marine Pollutant : Marine pollutant

14.3. In Accordance with IATA

Proper Shipping Name : PETROLEUM DISTILLATES, N.O.S.
Packing Group : III
Identification Number : UN1268
Hazard Class : 3
Label Codes : 3

ERG Code (IATA) : 3L

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Light Cycle Oil	
SARA Section 311/312 Hazard Classes	Health hazard - Carcinogenicity Health hazard - Reproductive toxicity Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Respiratory or skin sensitization Health hazard - Skin corrosion or Irritation Physical hazard - Flammable (gases, aerosols, liquids, or solids) Health hazard - Acute toxicity (any route of exposure) Health hazard - Aspiration hazard

Distillates, petroleum, light catalytic cracked (64741-59-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

Naphthalene (91-20-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 313 - Emission Reporting	0.1 %

Hydrogen sulfide (7783-06-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 313 - Emission Reporting	1 %

15.2. US State Regulations

Polycyclic aromatic hydrocarbons (130498-29-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Naphthalene (91-20-3)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Hydrogen sulfide (7783-06-4)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

California Proposition 65

WARNING: This product can expose you to Naphthalene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Naphthalene (91-20-3)	X			

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 10/27/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

H220	Extremely flammable gas
H226	Flammable liquid and vapor
H228	Flammable solid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H341	Suspected of causing genetic defects

H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H370	Causes damage to organs
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)