

# DESolv™

## Delta-Energy Natchez, LLC

Version No.3.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

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S.GHS.U.S.A.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

Product name	DESolv™
Synonyms	Tire DEPolymerization Oil
Proper shipping name	Combustible liquids, n.o.s.
Other means of identification	Combustible liquid with solvent properties

### Recommended use of the chemical and restrictions on use

Relevant identified uses	Useful in hydrocarbon blends in a wide range of chemical applications.
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### Name, address, and telephone number of the chemical manufacturer, importer, or another responsible party

Registered company name	Delta-Energy Natchez, LLC
Address	61A Carthage Point Rd Natchez MS United States
Telephone	769 355 2288
Fax	Not Available
Website	<a href="http://www.deltaenergy.com">www.deltaenergy.com</a>
Email	<a href="mailto:EHS@deltaenergy.com">EHS@deltaenergy.com</a>

### Emergency phone number

Association / Organization	Chemtrec (Assigned CCN #841722)
Emergency telephone numbers	800-424-9300 (24hrs)
Another emergency telephone number	769 355 2288 (24hrs)

## SECTION 2 HAZARD(S) IDENTIFICATION

Classification	Specific target organ toxicity - single exposure Category 3 (narcotic effects), Chronic Aquatic Hazard Category 2, Reproductive Toxicity Category 2, Acute Aquatic Hazard Category 3, Flammable Liquid Category 2, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2B, Skin Sensitizer Category 1, Aspiration Hazard Category 1
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### Label elements

Hazard pictogram(s)	
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SIGNAL WORD	<b>DANGER</b>
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### Hazard statement(s)

H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long-lasting effects.
H361d	Suspected of damaging the unborn child.
H402	Harmful to aquatic life.
H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.

## DESolv™

H361f	Suspected of damaging fertility.
H320	Causes eye irritation.
H317	May cause an allergic skin reaction.
H304	May be fatal if swallowed and enters airways.

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

**Precautionary statement(s) Response**

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P308+P313	IF exposed or concerned: See professional advise

**Precautionary statement(s) Storage**

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Mixtures**

CAS No	%[weight]	Name
91-20-3	<0.1	<u>naphthalene</u>
5989-27-5	2.11	<u>d-limonene</u>
95-47-6	<0.1	<u>o-xylene</u>
100-42-5	<0.1	<u>styrene</u>
100-41-4	<0.1	<u>ethylbenzene</u>
108-88-3	0.17	<u>toluene</u>
71-43-2	<0.1	<u>benzene</u>
110-83-8	3.06	<u>cyclohexene</u>
112-88-9	17.13	<u>1-octadecene</u>
129-00-0	<0.1	<u>pyrene</u>
7440-62-2	<0.1	<u>vanadium</u>
7440-21-3	<1.0	<u>silicon</u>
95-16-9	<1.0	<u>benzothiazole</u>
109-66-0	0.82	<u>n-pentane</u>
108-38-3	<0.1	<u>m-xylene</u>
106-42-3	<0.1	<u>p-xylene</u>
90-12-0	<0.1	<u>1-methylnaphthalene</u>
91-57-6	<0.1	<u>2-methylnaphthalene</u>
581-42-0	<1.0	<u>2,6-dimethylnaphthalene</u>
1195-32-0	0.41	<u>p-cymenene</u>
95-63-6	0.33	<u>1,2,4-trimethyl benzene</u>
95-93-2	<0.1	<u>1,2,4,5-tetramethylbenzene</u>
Various	3.06	<u>Terpene hydrocarbons</u>
68991-52-6	8.48	<u>alkenes,C10-16</u>
63231-51-6	12.08	<u>Aromatic hydrocarbons</u>
67254-74-4	43.87	<u>Naphthenic oils</u>
57-11-4	1.18	<u>stearic acid</u>
65-85-0	<1.0	<u>benzoic acid</u>
27565-41-9	<1.0	<u>dithiothreitol</u>
877-43-0	<0.1	<u>2,6-dimethylquinoline</u>
26780-96-1	<0.1	<u>trimethyldihydroquinoline polymer</u>
60-24-2	0.91	<u>2-mercaptoethano</u>

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## SECTION 4 FIRST-AID MEASURES

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from the eye and moving the eyelids by occasionally lifting the upper and lower lids. If pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in the event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols, or combustion products are inhaled remove from a contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> <li>▶ Avoid giving milk or oils.</li> <li>▶ Avoid giving alcohol.</li> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

### Most important symptoms and effects, both acute and delayed

See Section 11

### Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Treat symptomatically.

For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course, the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode individuals should be followed for changes in blood variables and the delayed appearance of pulmonary edema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with the chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede the administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

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For naphthalene intoxication: Naphthalene requires hepatic and microsomal activation prior to the production of toxic effects. Liver microsomes catalyze the initial synthesis of the reactive 1,2-epoxide intermediate which is subsequently oxidized to naphthalene dihydrodiol and alpha-naphthol. The 2-naphthoquinones are thought to produce hemolysis, the 1,2-naphthoquinones are thought to be responsible for producing cataracts in rabbits, and the glutathione-adducts of naphthalene-1,2-oxide are probably responsible for pulmonary toxicity. Suggested treatment regime:

- ▶ Induce emesis and/or perform gastric lavage with large amounts of warm water where oral poisoning is suspected.
- ▶ Instill a saline cathartic such as magnesium or sodium sulfate in water (15 to 30g).
- ▶ Demulcents such as milk, egg white, gelatin, or other protein solutions may be useful after the stomach is emptied but oils should be avoided because they promote absorption.
- ▶ If eyes/skin are contaminated, flush with warm water followed by the application of a bland ointment.
- ▶ Severe anemia, due to hemolysis, may require small repeated blood transfusions, preferably with red cells from a non-sensitive individual.
- ▶ Where intravascular hemolysis, with hemoglobinuria, occurs, protect the kidneys by promoting a brisk flow of dilute urine with, for example, an osmotic diuretic such as mannitol. It may be useful to alkalinize the urine with small amounts of sodium bicarbonate but many researchers doubt whether this prevents blockage of the renal tubules.
- ▶ Use supportive measures in the case of acute renal failure. GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, 5th Ed.
- ▶ Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.
- ▶ In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
- ▶ High-pressure accidental injection through the skin should be assessed for possible incision, irrigation, and/or debridement.

## SECTION 5 FIRE-FIGHTING MEASURES

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine, etc. as ignition may result
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### Special protective equipment and precautions for fire-fighters

<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Liquid and vapor are highly flammable.</li> <li>▶ Severe fire hazard when exposed to heat, flame, and/or oxidizers.</li> </ul> <p>Combustion products include: carbon dioxide (CO<sub>2</sub>)</p>
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Other pyrolysis products typical of burning organic material.

**Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions.

**CARE:** Water in contact with hot liquid may cause foaming and a steam explosion with a wide scattering of hot oil and possible severe burns. Foaming may cause an overflow of containers and may result in a possible fire.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment, and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	Slippery when spilled. <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them the location and nature of hazard.</li> </ul> Slippery when spilled.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	The conductivity of this material may make it a static accumulator. Several factors, for example, liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid. <ul style="list-style-type: none"> <li>▶ Containers, even those that have been emptied, may contain explosive vapors.</li> <li>▶ Do NOT cut, drill, grind, weld, or perform similar operations on or near containers.</li> </ul> <b>Contains low boiling substance:</b> Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately. <ul style="list-style-type: none"> <li>▶ Check for bulging containers.</li> <li>▶ Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when the risk of exposure occurs.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers in the approved flame-proof area. No smoking, naked lights, heat, or ignition sources.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Packing as supplied by the manufacturer.</li> <li>▶ Plastic containers may only be used if approved for flammable liquid.</li> </ul>
<b>Storage incompatibility</b>	In the presence of chlorine, trifluoride may react violently and ignite. DESolv <ul style="list-style-type: none"> <li>▶ may ignite or explode in contact with strong oxidizers, 1,3-dichloro-5,5-dimethyl hydantoin, uranium fluoride</li> <li>▶ attack some plastics, rubber, and coatings</li> <li>▶ may generate electrostatic charges on flow or agitation due to low conductivity.</li> <li>▶ Vigorous reactions, sometimes amounting to explosions, can result from contact with strong oxidizing agents.</li> <li>▶ Aromatics can react with bases and with diazo compounds.</li> </ul> <ul style="list-style-type: none"> <li>▶ The various oxides of nitrogen and peroxy acids may be dangerously reactive in the presence of alkenes. BRETHERICK L.: Handbook of Reactive Chemical Hazards</li> <li>▶ Avoid reaction with strong Lewis or mineral acids.</li> </ul> The interaction of alkenes and alkynes with nitrogen oxides and oxygen may produce explosive addition products; these may form at very low temperatures and explode on heating to higher temperatures. <b>CARE:</b> Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from the wide scattering of hot material. The resultant overflow of containers may result in fire.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	toluene	Methyl benzene, Methyl benzol, Phenyl methane, Toulon	100 ppm/ 375 mg/m3	560 mg/m3 / 150 ppm	Not Available	NotAvailable
USACGIH Threshold Limit Values (TLV)	toluene	Toluene	20 ppm	Not Available	Not Available	TLV® Basis: Visual impair; female repro; pregnancy loss; BEI
OSHA Permissible Exposure Levels (PELs) - Table Z2	toluene	Toluene	200 ppm	Not Available	300 ppm	(Z37.12-1967)
OSHA Permissible Exposure Levels (PELs) - Table Z1	toluene	Toluene	Not Available	Not Available	Not Available	See table Z-2
US NIOSH Recommended Exposure Limits (RELs)	cyclohexene	Benzene tetrahydride, Tetrahydro benzene	300 ppm/ 1015 mg/m3	Not Available	Not Available	NotAvailable
USACGIH Threshold Limit Values (TLV)	cyclohexene	Cyclohexene	300 ppm	Not Available	Not Available	TLV® Basis: URT & eye irritation
OSHA Permissible Exposure Levels (PELs) - Table Z1	cyclohexene	Cyclohexene	300 ppm/ 1015 mg/m3	Not Available	Not Available	NotAvailable
US NIOSH Recommended Exposure Limits (RELs)	1-octadecene	Heavy mineral oil mist, Paraffin oil mist, White mineral oil mist	5 mg/m3	10 mg/m3	Not Available	NotAvailable
USACGIH Threshold Limit Values (TLV)	1-octadecene	Mineral oil, excluding metalworking fluids - Pure, high and severely refined	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irritation
USACGIH Threshold Limit Values (TLV)	1-octadecene	Mineral oil, excluding metalworking fluids - Poorly and mildly refined	Not Available	Not Available	Not Available	TLV® Basis: URT irritation
OSHA Permissible Exposure Levels (PELs) - Table Z1	1-octadecene	Oil mist, mineral	5 mg/m3	Not Available	Not Available	NotAvailable
US NIOSH Recommended Exposure Limits (RELs)	n-pentane	Pentane, normal-Pentane	120 ppm/ 350 mg/m3	Not Available	610 ppm/ 1800 mg/m3	[15-minute]
USACGIH Threshold Limit Values (TLV)	n-pentane	Pentane, all isomers	1000 ppm	Not Available	Not Available	TLV® Basis: Narcosis; resp tract irr
OSHA Permissible Exposure Levels (PELs) - Table Z1	n-pentane	Pentane	1000ppm/ 2950 mg/m3	Not Available	Not Available	NotAvailable
US NIOSH Recommended Exposure Limits (RELs)	1,2,4-trimethyl benzene	Asymmetrical trimethyl benzene, psi-Cumene, Pseudo cumene [Note: Hemimellitene is a mixture of the 1,2,3-isomer with up to 10% of related aromatics such as the 1,2,4-isomer.]	25 ppm / 125 mg/m3	Not Available	Not Available	NotAvailable
US NIOSH Recommended Exposure Limits (RELs)	alkenes, C10-16	Heavy mineral oil mist, Paraffin oil mist, White mineral oil mist	5 mg/m3	10 mg/m3	Not Available	NotAvailable
USACGIH Threshold Limit Values (TLV)	alkenes, C10-16	Mineral oil, excluding metalworking fluids - Poorly and mildly refined	Not Available	Not Available	Not Available	TLV® Basis: URT irritation
USACGIH Threshold Limit Values (TLV)	alkenes, C10-16	Mineral oil, excluding metalworking fluids - Pure, highly and severely refined	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irritation
OSHA Permissible Exposure Levels (PELs) - Table Z1	alkenes, C10-16	Oil mist, mineral	5 mg/m3	Not Available	Not Available	NotAvailable
USACGIH Threshold Limit Values (TLV)	stearic acid	* Stearates(J)	10; 3 mg/m3	Not Available	Not Available	TLV® Basis: LRT irritation

**EMERGENCY LIMITS**


Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
d-limonene	Limonene, d-	15 ppm	67 ppm	170 ppm
toluene	Toluene	Not Available	Not Available	Not Available
cyclohexene	Cyclohexene	900 ppm	1,700 ppm	10,000 ppm
n-pentane	Pentane,n-	3000 ppm	33000 ppm	200000 ppm
1,2,4-trimethyl benzene	Perma fluor E+	140 mg/m3	360 mg/m3	2,200 mg/m3
1,2,4-trimethyl benzene	Trimethylbenzene, 1,2,4-;(Pseudo cumene)	Not Available	Not Available	480 ppm
stearic acid	Octadecanoic acid, n-; (Stearic acid)	14 mg/m3	150 mg/m3	910 mg/m3
2-mercaptoethanol	Mercapto ethanol, 2-	0.6 ppm	3.5 ppm	29 ppm

Ingredient	Original IDLH	Revised IDLH
d-limonene	Not Available	Not Available
toluene	500 ppm	Not Available
cyclohexene	2,000 ppm	Not Available
1-octadecene	2,500 mg/m3	Not Available
n-pentane	1,500 ppm	Not Available
p-cymene	Not Available	Not Available
1,2,4-trimethyl benzene	Not Available	Not Available
Terpene hydrocarbons	Not Available	Not Available
alkenes, C10-16	2,500 mg/m3	Not Available

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Aromatic hydrocarbons	Not Available	Not Available
Naphthenic oils	Not Available	Not Available
stearic acid	Not Available	Not Available
2-mercaptoethanol	Not Available	Not Available

## Exposure controls

Personal protection	
Eye and face protection	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <b>NOTE:</b> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> </ul>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.</li> <li>▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs, or pockets).</li> </ul>

## Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

Appearance	A dark-colored oily liquid		
Physical state	Liquid	Relative density (Water = 1)	0.899
Odor	Sulfur	Partition coefficient n-octanol/water	Not Available
Odor threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point /freezing point (°C)	Not Available	Viscosity(cSt)	4.265
Initial boiling point and boiling range (°C)	49.67-539.83	Molecular weight (g/mol)	Not Available
Flashpoint (°C)	22.3	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidizing properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit(%)	Not Available	Volatile Component (%vol)	0.83
Vapor pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution(1%)	Not Available
Vapor density (Air = 1)	Not Available	VOC g/L	Not Available

## SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials. The product is considered stable.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7

<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	<p>Inhalation of vapors may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of coordination, and vertigo.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Inhaling high concentrations of mixed hydrocarbons can cause narcosis, nausea, vomiting, and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors, and stupor.</p> <p>The central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anesthetic effects, slowed reaction time, slurred speech, and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. On exposure, some people may become nervous, tense, anxious, and have difficulty breathing. There may be a reduction of red blood cells and bleeding abnormalities.</p> <p>Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.</p> <p>Inhalation of naphthalene vapor is linked with headache, loss of appetite, nausea, damage to the eyes, and kidneys. According to animal testing, long term exposure may cause excessive weakness and increased salivation, weight loss, difficulty breathing, collapse, and evidence of damage to the skin, liver, and lungs.</p> <p>Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue, and coordination.</p> <p>The acute toxicity is best described by central nervous system depression. These compounds may also act as general anesthetics.</p> <p>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapor may displace and replace the air in the breathing zone, acting as a simple asphyxiant.</p> <p>The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting to consider control of exposure by mechanical ventilation.</p>
<b>Ingestion</b>	<p>Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)</p> <p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Alkenes are generally of low toxicity, but they are considered aspiration hazards.</p> <p>Ingestion of petroleum hydrocarbons can irritate the pharynx, esophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness, and convulsions.</p> <p>Ingestion of naphthalene and related compounds may produce abdominal cramps with nausea, vomiting, diarrhea, headache, profuse sweating, listlessness, confusion, and in severe poisonings, coma with or without convulsions. Irritation of the bladder may also occur, producing urgency, painful urination, and the passage of brown or black urine with or without albumin or casts.</p>
<b>Skin Contact</b>	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Though considered non-harmful, slight irritation may result from contact because of the abrasive nature of the aluminum oxide particles. Thus, it may cause itching and skin reaction and inflammation.</p> <p>Medium-sized alkenes can cause skin irritation and sloughing, especially in long-term exposure.</p> <p>Workers sensitized to naphthalene and related compounds show inflammation of the skin with scaling and reddening. Some individuals show an allergic reaction.</p> <p>The liquid may be able to be mixed with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the bloodstream, though, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	<p>This material can cause eye irritation and damage to some persons.</p> <p>Long term exposure to naphthalene has produced clouding of the lens (cataracts) in workers.</p> <p>Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.</p>
<b>Chronic</b>	<p>Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.</p> <p>Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.</p> <p>Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the fetus, at levels which do not cause significant toxic effects to the mother.</p> <p>Oil may contact the skin or be inhaled. An extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face, and warts on the soles of the feet.</p> <p>Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.</p> <p>Oral administration of C20-24 alkenes has not been shown to exhibit significant toxicity in humans.</p> <p>Animal testing indicates that inhalation of naphthalene may increase the incidence of respiratory tumors and may aggravate chronic inflammation.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>d-Limonene may cause damage to and growth in the kidney. These growths can progress to cancer.</p> <p>Chronic exposure to benzene may cause headaches, fatigue, loss of appetite, and lassitude with incipient blood effects including anemia and blood changes. Benzene is a myelotoxic known to suppress bone-marrow cell proliferation and to induce hematologic disorders in humans and animals.</p>

<b>DESolv</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

<b>d-limonene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (mouse) LC50: 6884.6356575 mg/l/6h <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (rat) LD50: 3567 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
<b>toluene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 2700 mg/kg <sup>[2]</sup>	Skin (rabbit): 500 mg/24h - mild
<b>cyclohexene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 12267 mg/kg <sup>[2]</sup>	Eye (rabbit): 5 mg/24h - SEVERE
	Inhalation (mouse) LC50: 7891.4855295 mg/l/6h <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (rat) LD50: 4988 mg/kg <sup>[2]</sup>	Skin (rabbit): 20 mg/24h - mod
		Skin (rabbit):0.01 mg/24h(open)
	Skin: adverse effect observed (irritating) <sup>[1]</sup>	
<b>1-octadecene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 4544.80845 mg/l/4h <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (rat) LD50: >3392-4779 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
<b>n-pentane</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5010 mg/kg <sup>[2]</sup>	Eye (rabbit): 1.3/110**
	Oral (rat) LD50: 2000 mg/kg <sup>[1]</sup>	Skin (rabbit): 0.0/8.0**
<b>p-cymene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>1,2,4-trimethyl benzene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >3160 mg/kg <sup>[2]</sup>	Not Available
	Inhalation (rat) LC50: 18 mg/l/4h <sup>[2]</sup>	
	Oral (rat) LD50: 5000 mg/kg <sup>[1]</sup>	
<b>terpene hydrocarbons</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>alkenes, C10-16</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >10000 mg/kg <sup>[2]</sup>	Not Available
	Oral (rat) LD50: >10000 mg/kg <sup>[2]</sup>	
<b>aromatic hydrocarbons</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (bird) LD50: >2250 mg/kg <sup>[2]</sup>	Not Available
<b>naphthenic oils</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>stearic acid</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (human): 75 mg/3d-I-mild
		Skin (rabbit):500 mg/24h-moderate
		Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>2-mercaptoethanol</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 150 mg/kg <sup>[2]</sup>	Eye (rabbit): 1 mg - SEVERE



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Inhalation (rat) LC50: 2 mg/l/4h <sup>[2]</sup>	Skin (rabbit): 10 mg/24h (open)
Oral (rat) LD50: 32-135 mg/kg <sup>[1]</sup>	

**Legend:**

1. The value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>DESolv</b>	<p>Animal studies indicate that normal, branched and cyclic paraffin are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.</p> <p>The materials included in the Lubricating Base Oils category are related to both process and physical-chemical perspectives.</p> <p>The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:</p> <ul style="list-style-type: none"> <li>• The adverse effects of these materials are associated with undesirable components, and</li> <li>• The levels of the undesirable components are inversely related to the degree of processing.</li> <li>• Distillate base oils receiving the same degree or extent of processing will have similar toxicities.</li> <li>• The potential toxicity of residual base oils is independent of the degree of processing the oil receives.</li> </ul> <p>• The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing. For highly and severely refined distillate base oils:</p> <p>In animal studies, the acute, oral, semi lethal dose is &gt;5g/kg body weight and the semi lethal dose by skin contact is &gt;2g/kg body weight. The semi lethal concentration for inhalation is 2.18 to &gt;4 mg/L.</p>
<b>D-LIMONENE</b>	Tumorigenic by RTECS criteria
<b>TOLUENE</b>	<p>For toluene:</p> <p>Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness), and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect.</p>
<b>CYCLOHEXENE</b>	<p>For cyclohexene: Animal testing shows that cyclohexene has low acute toxicity by swallowing, very low by inhalation, and negligible by skin contact. Repeated exposure caused various changes to blood tests and increased relative kidney weight.</p> <p>*SIDS Initial Assessment Report</p>
<b>N-PENTANE</b>	[GENIUM and CC INFO,V.W.&R.]
<b>1,2,4-TRIMETHYL BENZENE</b>	Other Toxicity data is available for CHEMWATCH 12172 1,2,3-trimethyl benzene CHEMWATCH 2325 1,3,5-trimethyl benzene
<b>ALKENES, C10-16</b>	for similar product
<b>AROMATIC HYDROCARBONS</b>	NOTE: Insufficient information to identify possible hazards, including the chronic health effects, of this particular substance.
<b>NAPHTHENIC OILS</b>	Tumorigenic agent by RTECS criteria
<b>STEARIC ACID</b>	Equivocal tumorigenic by RTEC criteria
<b>2-MERCAPTOETHANOL</b>	<p>Tremors, convulsion, excitement, spasticity, respiratory depression were recorded. Genetic Toxicity: AMES - Negative; Mouse Lymphoma Forward Mutation Assay - Negative; In Vitro Sister Chromatid Exchange - Negative **Chevron Philips MSDS Genetic toxicity: Results from a number of genotoxicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is genotoxic. Reproductive toxicity: The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422). Developmental toxicity/teratogenicity: A teratogenic potential cannot be excluded. The results were determined in a Screening test (OECD 421/422). Other information: Skin resorption hazard. ** BASFMSDS</p>
<b>DESolv &amp; D-LIMONENE &amp; 1-METHYLNAPHTHALENE &amp; 2-METHYLNAPHTHALENE &amp; TERPENE HYDROCARBONS &amp; DITHIOTHREITOL &amp; 2,6-DIMETHYLQUINOLINE &amp; 2-MERCAPTOETHANOL</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's edema.</p>
<b>DESolv &amp; D-LIMONENE</b>	<p>Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and conjunctival contact dermatitis occurs.</p> <p>Fragrance allergens act as happens, which are small molecules that cause an immune reaction only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but some require the previous activation.</p>
<b>DESolv &amp; 1-OCTADECENE</b>	Epoxidation of double bonds is a common bioactivation pathway for alkenes. The allylic epoxides formed were found to be sensitizing.
<b>DESolv &amp; 1,2,4-TRIMETHYL BENZENE</b>	<p>For trimethyl benzenes:</p> <p>Absorption of 1,2,4-trimethyl benzene occurs after exposure by swallowing, inhalation, or skin contact. In the workplace, inhalation and skin contact are the most important routes of absorption; whole-body toxic effects from skin absorption are unlikely to occur as the skin irritation caused by the chemical generally leads to quick removal.</p>
<b>DESolv &amp; 1-OCTADECENE &amp; ALKENES, C10-16</b>	<p>For olefins:</p> <p>Studies have shown that normal alpha olefins have little or no toxic effect on animals except if inhaled in high concentrations. They may produce minimal skin and eye irritation, but do not sensitize the skin.</p>
<b>DESolv &amp; D-LIMONENE &amp; TERPENE HYDROCARBONS</b>	d-Limonene is readily absorbed by inhalation and swallowing. Absorption through the skin is reported to be lower than by inhalation.
<b>NAPHTHALENE &amp; STYRENE &amp; ETHYLBENZENE &amp; TOLUENE &amp; BENZENE &amp; PYRENE &amp; STEARIC ACID &amp; BENZOIC ACID</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling, and thickening of the skin.
<b>D-LIMONENE &amp; PYRENE</b>	<p>The substance is classified by IARC as Group 3:</p> <p><b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>
<b>D-LIMONENE &amp; P-CYMENENE</b>	<p>Monomethyltin chloride, thioglycolate esters, and tall oil ester reaction product:</p> <p>Monomethyltin trichloride (MMTC, CAS RN: 993-16-8), monomethylation tris[2-ethylhexylmercaptoacetate (MMT (EHTG); MMT (2-EHMA), CAS RN: 57583-34-3), monomethylation tris[isooctylmercapto acetate (MMT(IOTG), CAS RN: 54849-38-6) and methyl in reverse ester tallate reaction product (TERP, CAS RNs: 201687-58-3, 201687-57-2, 68442-12-6, 151436-98-5) are considered one category of compounds for mammalian studies via the oral route. The justification for this category is based on structural similarities and the demonstrated rapid conversion of all the esters to the MMTC when placed in simulated mammalian gastric contents [0.07M HCl] under physiological conditions.</p>

ETHYLBENZENE & M-XYLENE & BENZOICACID & 2-MERCAPTOETHANOL	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
CYCLOHEXENE & 1-OCTADECENE & PYRENE & SILICON & 1-METHYLNAPHTHALENE & 2-METHYLNAPHTHALENE & P-CYMENENE & 1,2,4-TRIMETHYL BENZENE & STEARIC ACID & BENZOIC ACID & DITHIOTHREITOL & 2,6-DIMETHYLQUINOLINE & 2-MERCAPTOETHANOL	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of the highly irritating compound.
SILICON & 2,6-DIMETHYLNAPHTHALENE & P-CYMENENE & TERPENE HYDROCARBONS & ALKENES, C10-16 & NAPHTHENIC OILS & 2,6-DIMETHYLQUINOLINE	No significant acute toxicological data identified in the literature search.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory orSkin sensitization	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

Legend: ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

DESolv	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

d-limonene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.199mg/L	3
	EC50	48	Crustacea	0.307mg/L	2
	EC50	96	Algae or other aquatic plants	0.212mg/L	3
	NOEC	504	Crustacea	0.05mg/L	2

toluene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.0073mg/L	4
	EC50	48	Crustacea	3.78mg/L	5
	EC50	72	Algae or other aquatic plants	12.5mg/L	4
	BCF	24	Algae or other aquatic plants	10mg/L	4
	NOEC	168	Crustacea	0.74mg/L	5

cyclohexene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	2.778mg/L	3
	EC50	48	Crustacea	2.1mg/L	2
	EC50	96	Algae or other aquatic plants	5.768mg/L	3
	NOEC	504	Crustacea	0.74mg/L	2

1-octadecene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48	Crustacea	>0.003mg/L	2
	EC50	72	Algae or other aquatic plants	>0.001mg/L	2
	NOEC	72	Algae or other aquatic plants	>=0.001mg/L	2

n-pentane	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	3.193mg/L	3
	EC50	48	Crustacea	2.7mg/L	2

Continued...

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	EC50	72	Algae or other aquatic plants	1.26mg/L	2
	NOEC	72	Algae or other aquatic plants	4.549mg/L	2
p-cymene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.792mg/L	3
	EC50	96	Algae or other aquatic plants	1.138mg/L	3
1,2,4-trimethyl benzene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	1.318mg/L	3
	EC50	48	Crustacea	ca.6.14mg/L	2
	EC50	96	Algae or other aquatic plants	2.154mg/L	3
terpene hydrocarbons	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
alkenes, C10-16	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
aromatic hydrocarbons	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48	Crustacea	1.1mg/L	2
	LC50	96	Fish	3mg/L	2
naphthenic oils	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
	EC50	48	Crustacea	>4.8mg/L	2
stearic acid	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72	Algae or other aquatic plants	>0.9mg/L	2
	NOEC	504	Crustacea	>0.22mg/L	2
2-mercaptoethanol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	9.125mg/L	3
	EC50	48	Crustacea	0.4mg/L	2
	EC50	72	Algae or other aquatic plants	=12mg/L	1
	NOEC	504	Crustacea	>0.063mg/L	2

**Legend:**

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high watermark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

When spilled this product may act like a typical oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of the body of water. The oil film on water surface may physically affect the aquatic organisms, due to the interruption of the oxygen transfer between the air and the water

Oils of any kind can cause:

- ▶ drowning of water-fowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility
- ▶ lethal effects on fish by coating gill surfaces, preventing respiration
- ▶ asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom and
- ▶ adverse aesthetic effects of fouled shoreline and beaches

In the case of accidental releases on the soil, a fine film is formed on the soil, which prevents the plant respiration process and the soil particle saturation.

For Aromatic Substances Series:

Environmental Fate: Large, molecularly complex polycyclic aromatic hydrocarbons, or PAHs, are persistent in the environment longer than smaller PAHs.

Atmospheric Fate: PAHs are 'semi-volatile substances' which can move between the atmosphere and the Earth's surface in repeated, temperature-driven cycles of deposition and volatilization.

For petroleum distillates:

Environmental fate:

When petroleum substances are released into the environment, four major fate processes will take place: dissolution in water, volatilization, biodegradation, and adsorption. These processes will cause changes in the composition of these UVCB substances.

For Terpenes such as Limonene and Isoprene:

Atmospheric Fate: Contribute to aerosol and photochemical smog formation. When terpenes are introduced to the atmosphere, may either decrease ozone concentrations when oxides of nitrogen are low or, if emissions take place in polluted air (i.e. containing high concentrations of nitrogen oxides), leads to an increase in ozone concentrations.

Continued...

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Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below).

For Limonenes:

Atmospheric Fate: Due to the high volatility of limonene, the atmosphere is expected to be the major environmental sink for this chemical. The oxidation of limonene may contribute to aerosol and photochemical smog formation.

**DO NOT discharge into sewer or waterways.**

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
d-limonene	HIGH	HIGH
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)
cyclohexene	LOW	LOW
1-octadecene	LOW	LOW
n-pentane	LOW	LOW
p-cymene	HIGH	HIGH
1,2,4-trimethyl benzene	LOW (Half-life = 56 days)	LOW (Half-life = 0.67 days)
stearic acid	LOW	LOW
2-mercaptoethanol	LOW	LOW

#### Bioaccumulative potential

Ingredient	Bioaccumulation
d-limonene	HIGH (Log KOW = 4.8275)
toluene	LOW (BCF = 90)
cyclohexene	LOW (BCF = 45)
1-octadecene	LOW (Log KOW = 9.0448)
n-pentane	LOW (BCF = 2.35)
p-cymenene	MEDIUM (Log KOW = 3.9896)
1,2,4-trimethyl benzene	LOW (BCF = 275)
stearic acid	LOW (Log KOW = 8.23)
2-mercaptoethanol	LOW (BCF = 0.3)

#### Mobility in soil

Ingredient	Mobility
d-limonene	LOW (KOC = 1324)
toluene	LOW (KOC = 268)
cyclohexene	LOW (KOC = 165.5)
1-octadecene	LOW (KOC = 230800)
n-pentane	LOW (KOC = 80.77)
p-cymenene	LOW (KOC = 1324)
1,2,4-trimethyl benzene	LOW (KOC = 717.6)
stearic acid	LOW (KOC = 11670)
2-mercaptoethanol	HIGH (KOC = 1.325)



## SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> </ul>
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## SECTION 14 TRANSPORT INFORMATION

## Labels Required

Flammable	
Marine Pollutant	

## Land transport (DOT)

UN number	1993
UN proper shipping name	Flammable liquids, n.o.s.
Transport hazard class(es)	Class 3 Sub risk Not Applicable
Packing group	II
Environmental hazard	Environmentally hazardous
Special precautions for user	Hazard Label 3 Special provisions IB2, T7, TP1, TP8, TP28

## Air transport (ICAO-IATA / DGR)

UN number	1993
UN proper shipping name	Flammable liquid, n.o.s. *
Transport hazard class(es)	ICAO/IATA Class 3 ICAO / IATA Sub risk Not Applicable ERG Code 3H
Packing group	II
Environmental hazard	Environmentally hazardous
Special precautions for user	Special provisions A3 Cargo Only Packing Instructions 364 Cargo Only Maximum Qty / Pack 60 L Passenger and Cargo Packing Instructions 353 Passenger and Cargo Maximum Qty / Pack 5 L Passenger and Cargo Limited Quantity Packing Instructions Y341 Passenger and Cargo Limited Maximum Qty / Pack 1 L

## Sea transport (IMDG-Code / GGVSee)

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class(es)	IMDG Class 3 IMDG Sub risk Not Applicable
Packing group	II
Environmental hazard	Marine Pollutant
Special precautions for user	EMS Number F-E, S-E Special provisions 274 Limited Quantities 1 L

## Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

**SECTION 15 REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****D-LIMONENE IS FOUND ON THE FOLLOWING REGULATORYLISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas, or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements

US Department of Transportation (DOT) Marine Pollutants - Appendix B

US Department of Transportation (DOT), Hazardous Material Table

US DOE Temporary Emergency Exposure Limits (TEELs)

US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes

US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide

US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number

US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**TOLUENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk

IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

US - Alaska Limits for Air Contaminants

US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)

US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)

US - California Office of Environmental Health Hazard Assessment Proposition 65 No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity

US - California Permissible Exposure Limits for Chemical Contaminants

US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity

US - California Proposition 65 - Reproductive Toxicity

The US - Hawaii Air Contaminant Limits

US - Idaho - Acceptable Maximum Peak Concentrations

US - Idaho - Limits for Air Contaminants

US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits

US - Michigan Exposure Limits for Air Contaminants

US - Minnesota Permissible Exposure Limits (PELs)

US - Oregon Permissible Exposure Limits (Z-1)

US - Oregon Permissible Exposure Limits (Z-2)

US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants

US - Washington Permissible exposure limits of air contaminants

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants

US - Wyoming Toxic and Hazardous Substances Table Z-2 Acceptable ceiling concentration, The acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift

US ACGIH Threshold Limit Values (Spanish)

US ACGIH Threshold Limit Values (TLV)

US AIHA Workplace Environmental Exposure Levels (WEELs)

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)

US Chemical Footprint Project - Chemicals of High Concern List

US Clean Air Act - Hazardous Air Pollutants

US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas, or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements

US CWA (Clean Water Act) - List of Hazardous Substances

US CWA (Clean Water Act) - Priority Pollutants

US CWA (Clean Water Act) - Toxic Pollutants

US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides

US Department of Transportation (DOT), Hazardous Material Table

US DOE Temporary Emergency Exposure Limits (TEELs)

US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes

US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals

US EPA Carcinogens Listing

US EPCRA Section 313 Chemical List

US NIOSH Recommended Exposure Limits (RELS)

US NIOSH Recommended Exposure Limits (RELS) (Spanish)

US OSHA Permissible Exposure Levels (PELs) - Table Z1

US OSHA Permissible Exposure Levels (PELs) -Table Z2

US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)

US OSHA Permissible Exposure Limits - Annotated Table Z-2 (Spanish)

US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide

US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number

US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

**CYCLOHEXENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

US - Alaska Limits for Air Contaminants

US - California Permissible Exposure Limits for Chemical Contaminants

The US - Hawaii Air Contaminant Limits

US - Idaho - Limits for Air Contaminants

US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits

US - Michigan Exposure Limits for Air Contaminants

US - Minnesota Permissible Exposure Limits (PELs)

US - Oregon Permissible Exposure Limits (Z-1)

US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants

US - Washington Permissible exposure limits of air contaminants

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants

US ACGIH Threshold Limit Values (Spanish)

US ACGIH Threshold Limit Values (TLV)

US AIHA Workplace Environmental Exposure Levels (WEELs)

US Department of Transportation (DOT), Hazardous Material Table

US DOE Temporary Emergency Exposure Limits (TEELs)

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

US NIOSH Recommended Exposure Limits (RELS)

US NIOSH Recommended Exposure Limits (RELS) (Spanish)

US OSHA Permissible Exposure Levels (PELs) -Table Z1

US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)

US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide

US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**1-OCTADECENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
IMO IBC Code Chapter 17: Summary of minimum requirements	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances	US - Washington Permissible exposure limits of air contaminants
IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US ACGIH Threshold Limit Values (TLV)
International FOSFA List of Banned Immediate Previous Cargoes	US AIHA Workplace Environmental Exposure Levels (WEELs)
US - Alaska Limits for Air Contaminants	US Chemical Footprint Project - Chemicals of High Concern List
US - California Permissible Exposure Limits for Chemical Contaminants	US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas, or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements
US - California Proposition 65 - Carcinogens	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
The US - Hawaii Air Contaminant Limits	US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens
US - Idaho - Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs)
US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Michigan Exposure Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Minnesota Permissible Exposure Limits (PELs)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US - Oregon Permissible Exposure Limits (Z-1)	

**N-PENTANE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
IMO IBC Code Chapter 17: Summary of minimum requirements	US ACGIH Threshold Limit Values (Spanish)
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US ACGIH Threshold Limit Values (TLV)
IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO	US AIHA Workplace Environmental Exposure Levels (WEELs)
International Air Transport Association (IATA) Dangerous Goods Regulations	US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas, or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements
International Maritime Dangerous Goods Requirements (IMDG Code)	US Department of Homeland Security (DHS) - Chemical Facility Anti-Terrorism Standards (CFATS) - Chemicals of Interest
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Department of Transportation (DOT), Hazardous Material Table
US - Alaska Limits for Air Contaminants	US DOE Temporary Emergency Exposure Limits (TEELs)
US - California Permissible Exposure Limits for Chemical Contaminants	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
The US - Hawaii Air Contaminant Limits	US NIOSH Recommended Exposure Limits (RELs)
US - Idaho - Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs) (Spanish)
US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Michigan Exposure Limits for Air Contaminants	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Minnesota Permissible Exposure Limits (PELs)	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
US - Oregon Permissible Exposure Limits (Z-1)	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US - Washington Permissible exposure limits of air contaminants	US TSCA Section 4/12 (b) - Sunset Dates/Status

**P-CYMENENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

International Air Transport Association (IATA) Dangerous Goods Regulations	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
International Maritime Dangerous Goods Requirements (IMDG Code)	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US Department of Transportation (DOT), Hazardous Material Table	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**1,2,4-TRIMETHYL BENZENE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US Department of Transportation (DOT), Hazardous Material Table
IMO IBC Code Chapter 17: Summary of minimum requirements	US DOE Temporary Emergency Exposure Limits (TEELs)
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO	US EPA Carcinogens Listing
IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards	US EPCRA Section 313 Chemical List
International Air Transport Association (IATA) Dangerous Goods Regulations	US NIOSH Recommended Exposure Limits (RELs)
International Maritime Dangerous Goods Requirements (IMDG Code)	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US - California Permissible Exposure Limits for Chemical Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas, or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements	

**TERPENE HYDROCARBONS IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods Requirements (IMDG Code)
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

- US Department of Transportation (DOT), Hazardous Material Table
- US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
- US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number

**ALKENES, C10-16 IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International FOSFA List of Banned Immediate Previous Cargoes
- US - Alaska Limits for Air Contaminants
- US - California Permissible Exposure Limits for Chemical Contaminants
- US - California Proposition 65 - Carcinogens
- The US - Hawaii Air Contaminant Limits
- US - Idaho - Limits for Air Contaminants
- US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits
- US - Michigan Exposure Limits for Air Contaminants
- US - Minnesota Permissible Exposure Limits (PELs)
- US - Oregon Permissible Exposure Limits (Z-1)
- US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

- US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
- US - Washington Permissible exposure limits of air contaminants
- US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
- US ACGIH Threshold Limit Values (TLV)
- US AIHA Workplace Environmental Exposure Levels (WEELs)
- US Chemical Footprint Project - Chemicals of High Concern List
- US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
- US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Levels (PELs) -Table Z1
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**AROMATIC HYDROCARBONS IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods Requirements (IMDG Code)
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

- US Department of Transportation (DOT), Hazardous Material Table
- US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
- US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number

**NAPHTHENIC OILS IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**STEARIC ACID IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- GESAMP/EHS Composite List - GESAMP Hazard Profiles
- IMO IBC Code Chapter 17: Summary of minimum requirements
- IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk
- US ACGIH Threshold Limit Values (TLV)
- US AIHA Workplace Environmental Exposure Levels (WEELs)

- US DOE Temporary Emergency Exposure Limits (TEELs)
- US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**2-MERCAPTOETHANOL IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- GESAMP/EHS Composite List - GESAMP Hazard Profiles
- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods Requirements (IMDG Code)
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations
- US Department of Transportation (DOT), Hazardous Material Table
- US DOE Temporary Emergency Exposure Limits (TEELs)

- US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
- US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels(WEEL)
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**Federal Regulations**

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SECTION 311/312 HAZARD CATEGORIES**

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	Yes
Skin Corrosion or Irritation	Yes



Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	Yes
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

### State Regulations

#### The US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

#### US - CALIFORNIA PROPOSITION 65 - CARCINOGENS: LISTED SUBSTANCE

Naphthalene, Styrene, Ethylbenzene, Benzene, Soot, tars, and mineral oils (untreated and mildly treated oils and used engine oils) Listed

#### US - CALIFORNIA PROPOSITION 65 - REPRODUCTIVE TOXICITY: LISTED SUBSTANCE

Toluene, Benzene Listed

### National Inventory Status

National Inventory	Status
Canada - DSL	No (2,6-dimethylquinoline; aromatic hydrocarbons; 2,6-dimethylnaphthalene; alkenes, C10-16)
Canada -NDSL	No (toluene; 2-mercaptoethanol; naphthenic oils; dithiothreitol; pyrene; naphthalene; styrene; benzoic acid; vanadium; aromatic hydrocarbons; ethylbenzene; silicon; 1,2,4,5-tetramethylbenzene; d-limonene; benzothiazole; n-pentane; benzene; o-xylene; 1,2,4-trimethyl benzene; trimethyl dihydroquinoline polymer; p-xylene; cyclohexene; m-xylene; stearic acid; p-cymene)
The USA - TSCA	No (aromatic hydrocarbons); the Product contains greater than 300 individual aromatic hydrocarbon substances at de minimis concentration levels. As a result and for brevity, these substances have been combined into the CAS #63231-51-6 'Aromatic Hydrocarbons'. Contact the manufacturer for additional detail.
Mexico - INSQ	No (dithiothreitol; 2,6-dimethylquinoline; aromatic hydrocarbons; 2,6-dimethylnaphthalene; 1-octadecene; 1-methylnaphthalene; alkenes, C10-16; p-cymene)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

### SECTION 16 OTHER INFORMATION

<b>Revision Date</b>	08/18/2020
<b>Initial Date</b>	04/01/2019

### National Fire Protection Association (USA)

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond.

Blue = Health

Red = Fire

Yellow = Reactivity

White = Special (Oxidizer or water-reactive substances)



NFPA health hazard: 2 - Materials that can cause incapacitation or residual injury, during intense or continued exposure.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

### Other information

A license is granted to make unlimited paper copies for internal use only. The above information is believed to be correct as of the date of preparation and does not purport to be all-inclusive or account for naturally occurring variation in the composition of raw ores. It, therefore, represents no guarantee of the properties associated with these products.

The information in this document should be used only as a guide in applying the appropriate safety precautions and professional consultation is advised. Should naturally occurring variation cause a significant change in product composition, this information will undergo revision as appropriate. Delta-Energy Natchez, LLC and its affiliates shall not be held liable for any damage resulting from the end user's handling or contact with these products.