



# SAFETY DATA SHEET

*NAT LEMON EXTRACT 8103 3.5 KG*

## Section 1. Identification

**GHS product identifier** : *NAT LEMON EXTRACT 8103 3.5 KG*  
**Product code** : 20611071  
**Chemical name** : LEMON EXTRACT 8103  
**Other means of identification** : LEMON EXTRACT 8103  
**Product type** : liquid

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

Not applicable.

**Supplier's details** :  
 Kerry Inc.  
 3400 Millington Road  
 Beloit, WI, 53511 USA  
 USA  
 +1. 608.363.1200

**Emergency telephone number (with hours of operation)** : CHEMTREC: 1-800-424-9300 (24 hours)

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
 EYE IRRITATION - Category 2A  
 SKIN SENSITIZATION - Category 1  
 CARCINOGENICITY - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1.1 %  
 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 7.4 %

### GHS label elements

- Hazard pictograms** : 
- Signal word** : Danger
- Hazard statements** : Highly flammable liquid and vapor.  
Causes serious eye irritation.  
May cause an allergic skin reaction.  
Suspected of causing cancer.

**Precautionary statements**

- General** : Not applicable.
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
- Response** : IF exposed or concerned: Get medical attention. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If on skin: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

**Section 3. Composition/information on ingredients**

- Substance/mixture** : Mixture
- Chemical name** : LEMON EXTRACT 8103
- Other means of identification** : LEMON EXTRACT 8103

Ingredient name	%	CAS number
Ethanol	>= 25 - <= 50	64-17-5
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	> 0 - <= 5	5989-27-5
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	> 0 - <= 3	99-85-4
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	> 0 - <= 2	127-91-3
1,6-Octadiene, 7-methyl-3-methylene-	> 0 - <= 0.3	123-35-3

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

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

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

## Section 4. First aid measures

### Description of necessary first aid measures

- |                     |   |   |
|---------------------|---|---|
| <b>Eye contact</b>  | : | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.   |
| <b>Inhalation</b>   | : | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.  |
| <b>Skin contact</b> | : | Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.   |
| <b>Ingestion</b>    | : | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |

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

#### Potential acute health effects

- |                     |   |   |
|---------------------|---|---|
| <b>Eye contact</b>  | : | Causes serious eye irritation.                    |
| <b>Inhalation</b>   | : | No known significant effects or critical hazards. |
| <b>Skin contact</b> | : | May cause an allergic skin reaction.              |
| <b>Ingestion</b>    | : | No known significant effects or critical hazards. |

#### Over-exposure signs/symptoms

<b>Eye contact</b>	:	Adverse symptoms may include the following: pain or irritation, watering, redness
<b>Inhalation</b>	:	No specific data.
<b>Skin contact</b>	:	Adverse symptoms may include the following: irritation, redness
<b>Ingestion</b>	:	No specific data.

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

<b>Notes to physician</b>	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	:	No specific treatment.
<b>Protection of first-aiders</b>	:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## **Section 5. Fire-fighting measures**

### **Extinguishing media**

<b>Suitable extinguishing media</b>	:	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	:	Do not use water jet.

**Specific hazards arising from the chemical** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials: carbon dioxide, carbon monoxide

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

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## **Section 6. Accidental release measures**

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

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or

- flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

#### **Methods and materials for containment and cleaning up**

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## **Section 7. Handling and storage**

### **Precautions for safe handling**

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be

- Advice on general occupational hygiene** : hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**Section 8. Exposure controls/personal protection**

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Ethanol	<b>ACGIH TLV (2008-11-24)</b> STEL 1,000 ppm <b>OSHA PEL 1989 (1989-03-01)</b> TWA 1,900 mg/m3 1,000 ppm <b>OSHA PEL (1993-06-30)</b> TWA 1,900 mg/m3 1,000 ppm <b>NIOSH REL (1994-06-01)</b> TWA 1,900 mg/m3 1,000 ppm
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	<b>AIHA WEEL (1999-01-01)</b> TWA 30 ppm
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	<b>ACGIH TLV (2003-01-01) Skin sensitizer</b> TWA 20 ppm
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	None.
1,6-Octadiene, 7-methyl-3-methylene-	None.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or

- statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## **Section 9. Physical and chemical properties**

**Appearance**

<b>Physical state</b>	:	liquid
<b>Color</b>	:	Colorless to light yellow.
<b>Odor</b>	:	Not available.
<b>Odor threshold</b>	:	Not available.
<b>pH</b>	:	Not available.
<b>Melting point</b>	:	Not available.
<b>Boiling point</b>	:	Not available.
<b>Flash point</b>	:	21 °C (70 °F)
<b>Evaporation rate</b>	:	Not available.
<b>Flammability (solid, gas)</b>	:	Not available.
<b>Lower and upper explosive (flammable) limits</b>	:	<b>Lower:</b> Not available. <b>Upper:</b> Not available.
<b>Vapor pressure</b>	:	Not available.
<b>Vapor density</b>	:	Not available.
<b>Relative density</b>	:	0.9232
<b>Solubility</b>	:	Not available.
<b>Solubility in water</b>	:	Not available.
<b>Partition coefficient: n-octanol/water</b>	:	Not available.
<b>Auto-ignition temperature</b>	:	Not available.
<b>Decomposition temperature</b>	:	Not available.
<b>Viscosity</b>	:	<b>Dynamic:</b> Not available. <b>Kinematic:</b> Not available.
<b>Flow time (ISO 2431)</b>	:	Not available.

<b>Section 10. Stability and reactivity</b>
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<b>Reactivity</b>	:	No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	:	The product is stable.
<b>Possibility of hazardous reactions</b>	:	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Incompatible materials</b>	:	Reactive or incompatible with the following materials: oxidizing materials



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

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,6-Octadiene, 7-methyl-3-methylene-				
	LD50 Oral	Rat	5,000 mg/kg	-
	LD50 Oral	Rat	11,390 mg/kg	-
	LD50 Oral	Rat	5,000 mg/kg	-
	LD50 Dermal	Rabbit	5,000 mg/kg	-
	LD50 Dermal	Rabbit	5,000 mg/kg	-
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-				
	LD50 Oral	Rat	3,650 mg/kg	-
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-				
	LD50 Oral	Rat	4,700 mg/kg	-
	LD50 Oral	Rat	5,000 mg/kg	-
	LD50 Dermal	Rabbit	5,000 mg/kg	-
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-				
	LD50 Oral	Rat	4,400 mg/kg	-
	LD50 Oral	Rat	4,400 mg/kg	-
	LD50 Dermal	Rabbit	5,000 mg/kg	-
Ethanol				
	LD50 Oral	Rat	15,010 mg/kg	-
	LD50 Oral	Rat	7,000 mg/kg	-
	LD50 Oral	Rat	7,060 mg/kg	-
	LC50 Inhalation	Rat	20,000 ppm	10 h
	LC50 Inhalation	Rat	5.9 mg/l	6 h
	LC50 Inhalation	Rat	124.7 mg/l	4 h

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
1,6-Octadiene, 7-methyl-3-methylene-	Skin - Moderate irritant	Rabbit	-	24 hrs	-
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	Skin - Moderate irritant	Rabbit	-	24 hrs	-
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	Skin - Moderate irritant	Rabbit	-	24 hrs	-
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	Skin - Mild irritant	Rabbit	-	24 hrs	-
Ethanol	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Mild irritant	Rabbit	-		-

	Skin - Moderate irritant	Rabbit	-	24 hrs	-
	Eyes - Severe irritant	Rabbit	-		-
	Eyes - Mild irritant	Rabbit	-	24 hrs	-
	Eyes - Moderate irritant	Rabbit	-	0.001 hrs	-

**Conclusion/Summary**

**Skin** : Not available.  
**Eyes** : Not available.  
**Respiratory** : Not available.

**Sensitization**

**Conclusion/Summary**

**Skin** : Not available.  
**Respiratory** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
1,6-Octadiene, 7-methyl-3-methylene-	-	2B	-
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	-	3	-
Ethanol	-	1	-

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Name	Result
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1,6-Octadiene, 7-methyl-3-methylene-	ASPIRATION HAZARD - Category 1
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	ASPIRATION HAZARD - Category 1
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	ASPIRATION HAZARD - Category 1
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

#### Potential acute health effects

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : May cause an allergic skin reaction.  
**Ingestion** : No known significant effects or critical hazards.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following: pain or irritation, watering, redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following: irritation, redness  
**Ingestion** : No specific data.

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

##### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

##### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Potential chronic health effects

**Conclusion/Summary** : Not available.  
**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.  
**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

#### Numerical measures of toxicity

##### Acute toxicity estimates

Version: 1.1

Date of issue/Date of revision: 13.05.2020

Date of previous issue: 04.03.2020

Route	ATE value
Oral	58,644.9 mg/kg
Dermal	80,289 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-			
	Acute EC50 3.45 mg/l Fresh water	Daphnia - Daphnia magna	48 h
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-			
	Chronic NOEC 580 µg/l Fresh water	Fish - Oncorhynchus mykiss	60 d
	Chronic NOEC 1,100 µg/l Fresh water	Fish - Oncorhynchus mykiss	60 d
	Chronic NOEC 580 µg/l Fresh water	Fish - Oncorhynchus mykiss	60 d
	Chronic NOEC 58 µg/l Fresh water	Fish - Oncorhynchus mykiss	60 d
	Chronic NOEC 58 µg/l Fresh water	Fish - Oncorhynchus mykiss	60 d
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-			
	Acute LC50 702 µg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute EC50 688 µg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute LC50 720 µg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute LC50 35,000 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 h
	Acute EC50 69,600 µg/l Fresh water	Daphnia - Daphnia pulex	48 h
	Acute EC50 421 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute LC50 577 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute LC50 924 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute EC50 7.85 mg/l Fresh water	Daphnia - Daphnia magna	48 h
Ethanol			
	Acute LC50 11,000,000 µg/l Marine water	Fish - Alburnus alburnus	96 h
	Acute LC50 42,000 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 h

	Acute EC50 12,800 mg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute EC50 12,900.0 mg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute LC50 12,720 mg/l Fresh water	Fish - Pimephales promelas	96 h
	Acute LC50 25,500 µg/l Marine water	Crustaceans - Artemia franciscana	48 h
	Acute LC50 6,076,000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 h
	Acute LC50 3,715,000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 h
	Acute LC50 5,577,000 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 h
	Acute EC50 1,074 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 h
	Acute LC50 9,268,000 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute LC50 5,680 mg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute EC50 2,000 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute LC50 9,248,000 µg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute EC50 7,640 mg/l Fresh water	Daphnia - Daphnia magna	48 h
	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 h
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	4 d
	Chronic NOEC 50 mg/l Marine water	Algae - Hormosira banksii	3 d
	Chronic NOEC 350 mg/l Fresh water	Algae - Heterosigma akashiwo	4 d
	Chronic NOEC 14 mg/l Fresh water	Algae - Eutreptiella sp.	4 d
	Chronic NOEC 20 mg/l Fresh water	Algae - Prorocentrum minimum	4 d
	Chronic NOEC 0.375 mg/l Fresh water	Fish - Gambusia holbrooki	84 d
	Chronic NOEC 100 mg/l Fresh water	Daphnia - Daphnia magna	21 d
	Chronic NOEC 100 mg/l Fresh water	Daphnia - Daphnia magna	21 d

**Conclusion/Summary** : Not available.

**Persistence and degradability**

**Conclusion/Summary** : Not available.

**Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
1,6-Octadiene, 7-methyl-3-methylene-	5.285	-	high
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	4.5	-	high
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	4.425	-	high
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	4.57	-	high
Ethanol	-0.35	-	low

**Mobility in soil**

Soil/water partition coefficient (KOC) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

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

## Section 14. Transport information

The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Special provisions: 640C 640C Tunnel code: (D/E)

**IMDG**

<b>UN number</b>	<b>UN1170</b>
<b>UN proper shipping name</b>	ETHYL ALCOHOL
<b>Transport hazard class(es)</b>	3
<b>Packing group</b>	II
<b>Label requirements</b>	3
<b>Environmental hazards</b>	-
<b>Additional information</b>	EmS,MFAG:: No F-E S-D

**IATA**

<b>UN number</b>	<b>UN1170</b>
<b>UN proper shipping name</b>	Ethyl alcohol
<b>Transport hazard class(es)</b>	3
<b>Packing group</b>	II
<b>Label requirements</b>	3
<b>Environmental hazards</b>	-
<b>Additional information</b>	3L

**Additional information****TDG Classification**

- : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark)  
The marine pollutant mark is not required when transported by road or rail.

**ADR/RID**

- : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

**Special provisions** 640C**Tunnel code** (D/E)**IMDG**

- : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

**IATA**

- : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Special precautions for user**

- : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code**

- : Not available.

**Section 15. Regulatory information****U.S. Federal regulations**

- : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States - TSCA 8(a) - Preliminary assessment report (PAIR):** 2,6-Octadienal, 3,7-dimethyl-, (2E)-; 6-Octenal, 3,7-dimethyl-; Octanal;

<b>Clean Air Act Section 112(b)</b>	:	Not listed
<b>Hazardous Air Pollutants (HAPs)</b>		
<b>Clean Air Act Section 602 Class I Substances</b>	:	Not listed
<b>Clean Air Act Section 602 Class II Substances</b>	:	Not listed
<b>DEA List I Chemicals (Precursor Chemicals)</b>	:	Not listed
<b>DEA List II Chemicals (Essential Chemicals)</b>	:	Not listed

**SARA 302/304****Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : FLAMMABLE LIQUIDS - Category 2  
 EYE IRRITATION - Category 2A  
 SKIN SENSITIZATION - Category 1  
 CARCINOGENICITY - Category 2

**Composition/information on ingredients**

<b>Name</b>	<b>%</b>	<b>Classification</b>
Ethanol	>= 25 - <= 50	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A
Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (4R)-	> 0 - <= 5	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B ASPIRATION HAZARD - Category 1
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-	> 0 - <= 2	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B ASPIRATION HAZARD - Category 1
1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	> 0 - <= 3	FLAMMABLE LIQUIDS - Category 3 TOXIC TO REPRODUCTION - Fertility - Category 2 TOXIC TO REPRODUCTION - Unborn child - Category 2 ASPIRATION HAZARD - Category 1
1,6-Octadiene, 7-methyl-3-methylene-	> 0 - <= 0.3	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2

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		EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1
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**State regulations**

- Massachusetts** : None of the components are listed.
- New York** : None of the components are listed.
- New Jersey** : The following components are listed:  
Ethanol
- Pennsylvania** : The following components are listed:  
Ethanol

**California Prop. 65**

{ error: graphic file not found: E:\WWI\graphics\60\_2jdg\_7pt.png } **WARNING:** This product can expose you to 1,6-Octadiene, 7-methyl-3-methylene-, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
1,6-Octadiene, 7-methyl-3-methylene-	-	-

**International regulations****Chemical Weapon Convention List Schedules I, II & III Chemicals****Chemical Weapons Convention List Schedule I Chemicals**

None of the components are listed.

**Chemical Weapons Convention List Schedule II Chemicals**

None of the components are listed.

**Chemical Weapons Convention List Schedule III Chemicals**

None of the components are listed.

**Montreal Protocol (Annexes A, B, C, E)**

None of the components are listed.

**Stockholm Convention on Persistent Organic Pollutants****Annex A - Elimination - Production**

None of the components are listed.

**Annex A - Elimination - Use**

None of the components are listed.

**Annex B - Restriction - Production**

None of the components are listed.

**Annex B - Restriction - Use**

None of the components are listed.

**Annex C - Unintentional - Production**

None of the components are listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

None of the components are listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals****Heavy metals - Annex 1**

None of the components are listed.

**POPs - Annex 1 - Production**

None of the components are listed.

**POPs - Annex 1 - Use**

None of the components are listed.

**POPs - Annex 2**

None of the components are listed.

**POPs - Annex 3**

None of the components are listed.

**Inventory list**

<b>Australia</b>	:	Not determined.
<b>Canada</b>	:	Not determined.
<b>China</b>	:	Not determined.
<b>Europe</b>	:	Not determined.
<b>Japan</b>	:	<b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>Malaysia</b>	:	Not determined.
<b>New Zealand</b>	:	Not determined.
<b>Philippines</b>	:	Not determined.
<b>Republic of Korea</b>	:	Not determined.
<b>Taiwan</b>	:	Not determined.
<b>Thailand</b>	:	Not determined.
<b>Turkey</b>	:	Not determined.
<b>United States</b>	:	Not determined.
<b>Viet Nam</b>	:	Not determined.

**Section 16. Other information****Hazardous Material Information System (U.S.A.)**

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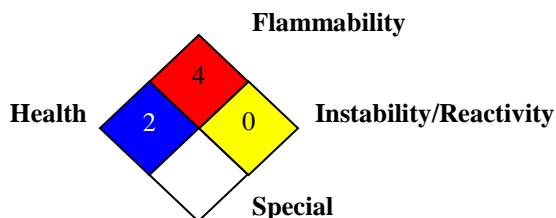
Date of previous issue: 04.03.2020

<b>Health</b>	*	2
<b>Flammability</b>		3
<b>Physical hazards</b>		0

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



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Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method

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**Prepared by** : TALBERT  
**Key to abbreviations** : ATE = Acute Toxicity Estimate

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BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

**References** : Not available.

**Notice to reader**

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