

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 00164
Product Name: Lemon Lime Flavor
Trade Name: Lemon Lime Flavor
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
- 1.3 Details of the Supplier of the Safety Data Sheet:**
Company Name: Perfumer's Apprentice
170 Technology Circle
Scotts Valley, CA 95066
- 1.4 Emergency telephone number:**

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**
Flammable Liquids, Category 2
Skin Corrosion/Irritation, Category 2
Skin Sensitization, Category 1
Aquatic Toxicity (Acute), Category 1
Aquatic Toxicity (Chronic), Category 1
- 2.1.2 Classification according to Directive 1999/45/EC:**
Xi: Irritant
N: Dangerous for the environment
Da
ng
er
ou
Risk Phrases: R10, R36/37/38, R43, R50/53, R52/53, R11
For full text of R- phrases: see SECTION 15.
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



GHS Signal Word: Danger

GHS Hazard Phrases:

H225 - Highly flammable liquid and vapor.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

GHS Precaution Phrases:

P233 - Keep container tightly closed.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.
P243 - Take precautionary measures against static discharge.
P242 - Use only non-sparking tools.
P264 - Wash hands thoroughly after handling.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.

GHS Response Phrases:

P370+378 - In case of fire, use ... to extinguish.
P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P302+352 - IF ON SKIN: Wash with plenty of soap and water.
P321 - Specific treatment see ... on this label.
P332+313 - If skin irritation occurs, get medical advice/attention.
P362 - Take off contaminated clothing.
P333+313 - If skin irritation or rash occurs, seek medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.

GHS Storage and Disposal Phrases:

P403+235 - Store in cool/well-ventilated place.
P501 - Dispose of contents/container to

2.2.2 Labeling according to Directive 1999/45/EC:



Xi N Da ng er ou

2.3 Adverse Human Health Chronic ingestion may cause lactic acidosis and possible seizures.

Effects and Symptoms:

Chronic: Exposure to large doses may cause central nervous system depression. Exposures to propylene glycol having no adverse effects on the mother should have no effect on the fetus. Birth defects are unlikely. In animal studies, propylene glycol has been shown not to interfere with reproduction. May cause reproductive and fetal effects. Laboratory experiments have shown mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

2.3.1 Inhalation:

Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled. Low hazard for normal industrial handling. Inhalation of a mist of this material may cause respiratory tract irritation. Material has a low vapor pressure at room temperature, so exposure to vapor is not likely. Skin: May be harmful if absorbed through skin. May cause skin irritation. Material is irritating to mucous membranes and upper respiratory tract. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

2.3.2 Skin Contact:

Skin Absorption: May be harmful if absorbed through the skin. May cause allergic skin reaction. May be absorbed through damaged or abraded skin in harmful amounts. Allergic reactions have been reported. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts. Repeated exposures may cause problems. Negative results have consistently been obtained in guinea pigs studies for sensitization. 1,,2-Propylene glycol is not considered an occupational skin sensitizer. (CHEMINFO) May cause sensitization by skin contact.

2.3.3 Eye Contact:

May cause slight transient injury. Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

2.3.4 Ingestion:

May be harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting

and diarrhea. Low hazard for usual industrial handling. May cause hemoglobinuric nephrosis. May cause changes in surface EEG. May cause irritation of the digestive tract. Additional Information.

RTECS: QJ6950000 May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Section 3. Composition/Information on Ingredients

CAS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	Risk Phrases/ GHS Classification
138-86-3	Dipentene	>=10.0 %	205-341-0 601-029-00-7	Xi; N; R10-38-43-50/53 Flam. Liq. 3: H226 Skin Corr. 2: H315 Skin Sens. 1: H317 Aquatic (A) 1: H400 Aquatic (C) 1: H410
57-55-6	Propylene glycol	>=10.0 %	200-338-0 NA	No phrases apply.
127-91-3	Bicyclo3.1.1heptane, 6,6-dimethyl-2-methylene-	1.0 -10.0 %	204-872-5 NA	N; R50/53
586-62-9	Terpinolene	1.0 -10.0 %	209-578-0 NA	N; R50/53
98-55-5	.alpha.-Terpineol	1.0 -10.0 %	202-680-6 NA	Xi; R38
64-17-5	Ethyl alcohol	1.0 -10.0 %	200-578-6 603-002-00-5	F; R11 Flam. Liq. 2: H225
5392-40-5	Citral	< 0.5 %	226-394-6 605-019-00-3	Xi; R38-43 Skin Corr. 2: H315 Skin Sens. 1: H317

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

- In Case of Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Get medical aid. Remove from exposure and move to fresh air immediately. If breathed in, move person into fresh air. Consult a physician. Do NOT use mouth-to-mouth resuscitation.
- In Case of Skin Contact:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash off with soap and plenty of water. Consult a physician.
- In Case of Eye Contact:** In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Flush eyes with water as a precaution. Gently lift eyelids and flush continuously with water.
- In Case of Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Call a physician. Never give anything by mouth to an unconscious person. Get medical aid. Wash mouth out with water. Rinse mouth with water. Consult a physician. If victim is conscious and alert, give 2-4 cupfuls of milk or water.

4.2 Important Symptoms and Effects, Both Acute and Delayed:	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Note for the Doctor:	Persons with impaired kidney function may be more susceptible to the effects of this substance. Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance. Antidote: Replace fluid and electrolytes.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:	Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. Use water spray, dry chemical, carbon dioxide, or chemical foam. Water spray. For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.
5.2 Flammable Properties and Hazards:	EXPLOSION HAZARDS. Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.
Flash Pt:	
Explosive Limits:	LEL: UEL:
Autoignition Pt:	
5.3 Fire Fighting Instructions:	Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable Liquid. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable liquid and vapor. Wear self contained breathing apparatus for fire fighting if necessary. Replace fluid and electrolytes. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool.

Section 6. Accidental Release Measures

6.3 Methods and Material For Containment and Cleaning Up:	PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL. Evacuate area. Shut off all sources of ignition. PROCEDURE(S) OF PERSONAL PRECAUTION(S) Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Methods for cleaning up. Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Use proper personal protective equipment as indicated in Section 8. Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Remove all sources of ignition. Use a spark-proof tool. Personal precautions. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
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Environmental precautions.
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Discharge into the environment must be avoided.
Keep in suitable, closed containers for disposal. Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete. A vapor suppressing foam may be used to reduce vapors.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Keep container tightly closed. Avoid ingestion and inhalation. Avoid breathing dust, mist, or vapor. Avoid contact with skin and eyes. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Do not breathe vapor. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

7.2 Precautions To Be Taken in Storing: Suitable: Keep container closed. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Keep away from sources of ignition. Store in a cool, dry place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Keep away from heat, sparks and flame. Keep from contact with oxidizing materials.
Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
138-86-3	Dipentene			
57-55-6	Propylene glycol	TWA: 474 mg/m3 (150 ppm) (Total Particulates) TWA: 10 mg/m3 (Powder)		
127-91-3	Bicyclo3.1.1heptane, 6,6-dimethyl-2-methylene-			
586-62-9	Terpinolene			
98-55-5	.alpha.-Terpineol			
64-17-5	Ethyl alcohol	TWA: 1920 mg/m3 (1000 ppm) STEL: ()	TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)	
5392-40-5	Citral			

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
138-86-3	Dipentene			
57-55-6	Propylene glycol			
127-91-3	Bicyclo3.1.1heptane, 6,6-dimethyl-2-methylene-		TLV: 20 ppm	
586-62-9	Terpinolene			
98-55-5	.alpha.-Terpineol			

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64-17-5 Ethyl alcohol

PEL: 1000 ppm

TLV: 1000 ppm

5392-40-5 Citral

8.2 Exposure Controls:

8.2.1 Engineering Controls (Ventilation etc.): Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Use explosion-proof ventilation equipment. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Chemical safety goggles. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Not available. Safety glasses.

Protective Gloves: Wear appropriate protective gloves to prevent skin exposure. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Other Protective Clothing: Wear appropriate protective clothing to prevent skin exposure. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory Equipment (Specify Type): Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Hand: Compatible chemical-resistant gloves. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. is not required.

Work/Hygienic/Maintenance Practices: Wash thoroughly after handling. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [X] Liquid [] Solid

Appearance and Odor: Transparent yellow liquid.
Lemon Lime taste and aroma.

Melting Point:

Boiling Point:

Flash Pt:

Evaporation Rate:

Explosive Limits: LEL: UEL:

Vapor Pressure (vs. Air or mm Hg):

Vapor Density (vs. Air = 1):

	<p>Specific Gravity (Water = 1):</p> <p>Solubility in Water:</p> <p>Autoignition Pt:</p>
9.2	<p>Other Information</p> <p>Percent Volatile:</p>

Section 10. Stability and Reactivity

10.1	Reactivity:	
10.2	Stability:	Unstable [<input type="checkbox"/>] Stable [<input checked="" type="checkbox"/>]
10.3	Conditions To Avoid - Hazardous Reactions:	
	Possibility of Hazardous Reactions:	Will occur [<input type="checkbox"/>] Will not occur [<input checked="" type="checkbox"/>]
10.4	Conditions To Avoid - Instability:	Excess heat, moist air, Incompatible materials, ignition sources.
10.5	Incompatibility - Materials To Avoid:	Strong oxidizing agents, Mineral acids, acids, Alkali metals, Ammonia, hydrazine, Peroxides, Sodium, Acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, Perchloric acid, silver nitrate, mercuric nitrate, potassium tert-butoxide, magnesium perchlorate, Acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate.
10.6	Hazardous Decomposition Or Byproducts:	Carbon monoxide, Carbon dioxide, irritating and toxic fumes and gases.

Section 11. Toxicological Information

11.1	Information on Toxicological Effects:	Epidemiology: No data available. Teratogenicity: No data available. Reproductive Effects: Mutagenicity: Neurotoxicity: Other Studies:
	Carcinogenicity/Other Information:	CAS# 57-55-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 13466-78-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 138-86-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 127-91-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 99-86-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
	Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1	Toxicity:	<p>Ecotoxicity: Water flea Daphnia: EC50 10000 mg/L; 48 HrUnspecified, Bacteria: Phytobacterium phosphoreum: EC50 = 710 mg/L; 30 min; Microtox testFish: Goldfish: LC50 5000 mg/L; 24 Hr; UnspecifiedFish: Guppy: LC50 1000 mg/L; 48 Hr; Unspecified If released to water, 1,2-propanediol is expected to degrade relatively rapidly via biodegradation. If released to soil, relatively rapid biodegradation should also occur. Significant leaching in soil can be predicted.</p> <p>Environmental: If released to the atmosphere, it is degraded rapidly by reaction with photochemically produced hydroxyl radicals (typical half-life of 32 hr). Physical removal from air by rainfall is possible.</p> <p>Physical: No information available.</p> <p>Other: No information available. Elimination information (persistence and degradability) Biodegradability: Biotic/Aerobic.</p>
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Result: 51 % - Partially biodegradable.

Further information on ecology.

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

Avoid release to the environment. When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Section 13. Disposal Considerations

13.1 Waste Disposal

Method:

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION.

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.

Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed. Product.

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal, state, and local environmental regulations. Contaminated packaging. Dispose of as unused product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not Regulated. TERPENE HYDROCARBONS, N.O.S. METHANOL.

DOT Hazard Class:

UN/NA Number:

14.1 LAND TRANSPORT (Canadian TDG):

TDG Shipping Name: Not Regulated. No information available. METHANOL.

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name:

UN Number:

Hazard Class:

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: UN Number: 2052 Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15. Regulatory Information

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European Community Hazard Symbol codes:

European Community Risk and Safety Phrases:

R10	Flammable.
R36/37/38	Irritating to eyes, respiratory system and skin.
R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R11	Highly flammable.
S24/25	Avoid contact with skin and eyes.
S37	Wear suitable gloves.
S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions / safety data sheets.
S16	Keep away from sources of ignition.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36	Wear suitable protective clothing.
S7	Keep container tightly closed.

Section 16. Other Information

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Additional Information About
This Product: