



This safety data sheet complies with the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 08-Jul-2019

Version 1

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Code(s)** 737CBD  
**Product name** LEMON LIME FLAVOR, NATURAL (OIL SOLUBLE)

**Pure substance/mixture** Mixture

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

**Recommended Use** Ingredient for further processing

**Uses advised against** No information available

### 1.3. Details of the supplier of the safety data sheet

**Manufacturer** Apex Flavors, Inc.  
1371 Brass Mill Rd.  
Suite A  
Belcamp, MD 21017  
(410) 565-6600

### For further information, please contact:

**E-mail Address** cpisano@apexflavors.com

### 1.4. Emergency telephone number

**Emergency telephone** Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

## Section 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

<b>Skin sensitization</b>	Category 1 - (H317)
<b>Chronic aquatic toxicity</b>	Category 2 - (H411)

### 2.2. Label elements

**Product identifier**  
Contains LIMONENE



**Signal Word**  
Warning

**Hazard Statements**

H317 - May cause an allergic skin reaction  
 H411 - Toxic to aquatic life with long lasting effects  
 Contains CITRAL EUH208 - May produce an allergic reaction

**Precautionary Statements - EU (§28, 1272/2008)**

P280 - Wear eye protection/ face protection  
 P321 - Specific treatment (see .? on this label)  
 P273 - Avoid release to the environment

**2.3. Other information**

No information available

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Chemical Name	EC-No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
LIMONENE	227-813-5	5989-27-5	1-5%	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 1 (H315) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)	No data available
PINENES	201-291-9	80-56-8	<1%	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 1 (H315) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Acute Tox. 5 (H303) Flam. Liq. 3 (H226)	No data available
CITRAL	226-394-6	5392-40-5	<1%	Aquatic Acute 2 (H401) Sens. 1 (H317) Skin Irrit. 2 (H315) Acute Tox. 5 (H313) Flam. Liq. 4 (H227)	No data available
MYRCENE	204-622-5	123-35-3	<1%	Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 2 (315) (EFFA) Asp. Tox. 1 (H304) (EFFA) Eye Irrit. 1 (H319) Skin Irrit. 2 (H315)	No data available
P-CYMENE	202-796-7	99-87-6	<1%	Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Aquatic Chronic 2 (H411) Asp. Tox. 1 (H304) Acute Tox. 5 (H303) Flam. Liq. 3 (H226)	No data available

**For the full text of the R-phrases mentioned in this Section, see Section 16**

**Full text of H- and EUH-phrases: see section 16**

**Section 4: FIRST AID MEASURES****4.1. Description of first aid measures****Inhalation**

Move to fresh air. If symptoms persist, call a physician.

**Skin contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water.

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<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
<b>Ingestion</b>	Do NOT induce vomiting. Drink plenty of water. Immediate medical attention is not required. Rinse mouth.
<b>Self-protection of the first aider</b>	Use personal protective equipment.
<b><u>4.2. Most important symptoms and effects, both acute and delayed</u></b>	
<b>Main Symptoms</b>	No information available.
<b><u>4.3. Indication of any immediate medical attention and special treatment needed</u></b>	
<b>Note to physicians</b>	May cause sensitization in susceptible persons.

## Section 5: FIRE FIGHTING MEASURES

### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### **Unsuitable extinguishing media**

No information available

### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes  
May cause sensitization in susceptible persons

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

## Section 6: ACCIDENTAL RELEASE MEASURES

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

#### **Personal precautions**

Use personal protective equipment. Avoid contact with eyes and skin.

#### **For emergency responders**

Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.  
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

### 6.3. Methods and material for containment and cleaning up

#### **Methods for containment**

Prevent further leakage or spillage if safe to do so.

#### **Methods for cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.  
After cleaning, flush away traces with water. Prevent product from entering drains.

### 6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

## Section 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

#### Advice on safe handling

Use personal protective equipment as required. Ensure adequate ventilation.

#### General Hygiene Considerations

When using, do not eat, drink or smoke. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place.

#### Incompatible products

None known based on information supplied.

### 7.3 Specific end use(s)

#### Risk Management Methods (RMM)

The information required is contained in this Material Safety Data Sheet.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
PINENES 80-56-8	-	-	-	VLA-ED: 20 ppm VLA-ED: 113 mg/m <sup>3</sup>	-
MYRCENE 123-35-3	-	-	TWA: 1000 mg/m <sup>3</sup> STEL: 1500 mg/m <sup>3</sup>	-	-
Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
LIMONENE 5989-27-5	-	-	-	TWA: 25 ppm TWA: 140 mg/m <sup>3</sup> STEL: 50 ppm STEL: 280 mg/m <sup>3</sup>	-
PINENES 80-56-8	-	TWA: 20 ppm	-	-	-
P-CYMENE 99-87-6	-	-	-	-	TWA: 25 ppm TWA: 135 mg/m <sup>3</sup>
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
LIMONENE 5989-27-5	-	STEL: 40 ppm STEL: 220 mg/m <sup>3</sup> MAK: 20 ppm MAK: 110 mg/m <sup>3</sup>	-	TWA: 25 ppm TWA: 140 mg/m <sup>3</sup> STEL: 37.5 ppm STEL: 175 mg/m <sup>3</sup>	-
PINENES 80-56-8	-	-	-	TWA: 25 ppm TWA: 140 mg/m <sup>3</sup> Skin STEL: 37.5 ppm STEL: 175 mg/m <sup>3</sup>	-
MYRCENE 123-35-3	-	-	-	TWA: 40 ppm TWA: 275 mg/m <sup>3</sup> STEL: 60 ppm STEL: 343.75 mg/m <sup>3</sup>	-

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

<b>Engineering Controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Tightly fitting safety goggles.
<b>Skin and body protection</b>	Long sleeved clothing.
<b>Respiratory protection</b>	NIOSH/MSHA approved respiratory protection is required to be worn.
<b>Environmental Exposure Controls</b>	Do not allow material to contaminate ground water system.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties**

<b>Physical state</b>	liquid
<b>Appearance</b>	clear
<b>Aroma</b>	lemon-lime
<b>Color</b>	Pale yellow

<u>Property</u>	<u>Values</u>	<u>• Method</u>
pH		No information available
Melting/freezing point		No information available
Boiling point/boiling range		FCC Method
Flash Point	93 °C / 200 °F	Closed cup
Evaporation rate		FCC Method
Flammability (solid, gas)		No information available
Flammability Limits in Air		
Upper flammability limit		No information available
lower flammability limit		No information available
Vapor pressure mm Hg 20°C		No information available
Vapor density		No information available
Relative density		No information available
Specific Gravity @ 25C	0.9275 - 0.9575	FCC Method
Specific Gravity @ 20C	0.9305 - 0.9605	FCC Method
Refractive Index	1.4349 - 1.4649	FCC Method
Water solubility		No information available
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Viscosity, dynamic		No information available
Explosive properties	No information available	
Oxidizing Properties	No information available	

**9.2. Other information**

<b>Softening point</b>	No information available
<b>Molecular Weight</b>	No information available
<b>VOC Content(%)</b>	No information available
<b>Density VALUE</b>	No information available
<b>Bulk Density VALUE</b>	No information available

**Section 10: STABILITY AND REACTIVITY****10.1. Reactivity**

No data available.

**10.2. Chemical stability**

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact none.  
Sensitivity to Static Discharge Yes.

**10.3. Possibility of hazardous reactions****Hazardous Reactions**

None under normal processing.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

No information available.

**10.6. Hazardous decomposition products**

None under normal use conditions.

**Section 11: TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects****Acute toxicity****Product Information**

Product does not present an acute toxicity hazard based on known or supplied information.

**Inhalation** There is no data available for this product.  
**Eye contact** There is no data available for this product.  
**Skin contact** There is no data available for this product.  
**Ingestion** There is no data available for this product.

**The following values are calculated based on chapter 3.1 of the GHS document**

**ATEmix (oral)** 5,063.00 mg/kg  
**ATEmix (dermal)** 2,819.00 mg/kg

**Unknown Acute Toxicity**

98.648% of the mixture consists of ingredient(s) of unknown toxicity.  
0.348 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.  
95.348 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.  
98.648 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).  
98.648 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).  
98.648 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

**Oral LD50**

Chemical Name	Oral LD50	Dermal LD50	LC50 Inhalation
LIMONENE	4400 mg/kg ( Rat )	2000 mg/kg ( Rabbit )	
PINENES	2100 mg/kg ( Rat )	5000 mg/kg ( Rat )	
CITRAL	4950 mg/kg ( Rat )	2250 mg/kg ( Rabbit ) 2000 mg/kg ( Rat )	

**Skin corrosion/irritation** No information available.

**Eye damage/irritation** No information available.

<b>Sensitization</b>	No information available.
<b>Germ Cell Mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>Specific target organ systemic toxicity (single exposure)</b>	No information available.
<b>Specific target organ systemic toxicity (repeated exposure)</b>	No information available.
<b>Aspiration hazard</b>	No information available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity** Toxic to aquatic life Toxic to aquatic life with long lasting effects

0.42% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
LIMONENE	-	0.619-0.796: 96 h Pimephales promelas mg/L LC50 flow-through 35: 96 h Oncorhynchus mykiss mg/L LC50	-
PINENES	-	0.28: 96 h Pimephales promelas mg/L LC50 static	41: 48 h Daphnia magna mg/L LC50
CITRAL	16: 72 h Desmodemus subspicatus mg/L EC50 19: 96 h Desmodemus subspicatus mg/L EC50	4.6-10: 96 h Leuciscus idus mg/L LC50 static	7: 48 h Daphnia magna mg/L EC50

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

Chemical Name	log Pow
PINENES	4.1
CITRAL	2.76
P-CYMENE	4.1

### 12.4. Mobility in soil

#### **Mobility in soil**

No information available.

### 12.5. Results of PBT and vPvB assessment

No information available.

### 12.6. Other adverse effects

No information available

### Section 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Empty remaining contents.
<b>Other Information</b>	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

### Section 14: TRANSPORT INFORMATION

#### IMDG / IMO

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIMONENE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III
<b>Marine pollutant</b>	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

Not regulated (If shipped in NON BULK packaging by ground transport)

#### DOT/ADR/RID

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIMONENE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III

#### ICAO/IATA

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIMONENE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

### Section 15: REGULATORY INFORMATION

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

##### Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)



**Persistent Organic Pollutants**

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

**International Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

**Legend:****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AICS** - Australian Inventory of Chemical Substances**15.2. Chemical safety assessment**

No information available

**Section 16: OTHER INFORMATION****Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of R-phrases referred to under sections 2 and 3**

R43 - May cause sensitization by skin contact

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Full text of H-Statements referred to under section 3**

H319 - Causes serious eye irritation

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H401 - Toxic to aquatic life

H317 - May cause an allergic skin reaction

H313 - May be harmful in contact with skin

H227 - Combustible liquid

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H226 - Flammable liquid and vapor

H303 - May be harmful if swallowed

H316 - Causes mild skin irritation

H411 - Toxic to aquatic life with long lasting effects

**Legend**

SVHC: Substances of Very High Concern for Authorization:

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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TWA:	Time weighted average	STEL:	Short term exposure limit
Ceiling:	Maximum limit value:	*	Skin designation

**Revision Date** 08-Jul-2019

**Reason for revision:** Not applicable.

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.**

**WARNING/DISCLAIMER:** Apex Flavors, Inc.'s products are sold exclusively for use in food and drink for human consumption. These products have not been tested, nor have they been deemed safe, for inhalation or use in electronic smoking devices, electronic nicotine delivery systems, and electronic cigarettes or similar devices (collectively "E-Cigarettes"). In supplying this product(s), Apex Flavors, Inc. instructs, and purchasing recipient confirms, that this product(s) will not be used in connection with the manufacture and distribution of E-Cigarettes or any component thereof. Recipients of our products that use them outside of their intended use of food or drink do so at their own risk and without warranty, either expressed or implied, from Apex Flavors, Inc. or its suppliers. The user assumes all liability for loss, injury, damage, or expense resulting from such uses.