



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

Revision Date 09-Jul-2019

Version 1.01

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

### 1.1. Product identifier

Product Code(s) 816  
Product name MULATO LEMON EXTRACT, NATURAL

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

Serious eye damage/eye irritation	Category 2 - (H319)
Carcinogenicity	Category 1A - (H350)
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 3 - (H226)

### 2.2. Label elements

Product identifier  
Contains ETHYL ALCOHOL



Signal Word

Danger

#### Hazard Statements

H319 - Causes serious eye irritation  
 H350 - May cause cancer  
 H412 - Harmful to aquatic life with long lasting effects  
 H226 - Flammable liquid and vapor  
 Contains LIMONENE EUH208 - May produce an allergic reaction

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

P201 - Obtain special instructions before use  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P308 + P313 - IF exposed or concerned: Get medical advice/attention  
 P370 + P378 - In case of fire: Use .? to extinguish  
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 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
ETHYL ALCOHOL	200-578-6	64-17-5	50-90%	Flam. Liq. 2 (H225) Eye Irrit. 1 (H319)	No data available
LIMONENE	227-813-5	5989-27-5	<1%	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

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

**General advice** Immediate medical attention is required. Show this material safety data sheet to the doctor in attendance.

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

**Skin contact** Wash off immediately with plenty of water. Wash off immediately with soap and plenty of water.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If

symptoms persist, call a physician.

**Ingestion** Do NOT induce vomiting. Drink plenty of water. Immediate medical attention is not required. Rinse mouth.

**Self-protection of the first aider** Remove all sources of ignition.

#### **4.2. Most important symptoms and effects, both acute and delayed**

**Main Symptoms** No information available.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

**Note to physicians** 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**

Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment.

#### **For emergency responders**

Use personal protection recommended in Section 8.

### **6.2. Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. 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**

Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

### **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

Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

#### General Hygiene Considerations

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

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

#### Storage Conditions

Keep tightly closed in a dry and cool place. Keep in properly labeled containers. 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
ETHYL ALCOHOL 64-17-5	-	STEL: 3000 ppm STEL: 5760 mg/m <sup>3</sup> TWA: 1000 ppm TWA: 1920 mg/m <sup>3</sup>	VME: 1000 ppm VME: 1900 mg/m <sup>3</sup> VLCT: 5000 ppm VLCT: 9500 mg/m <sup>3</sup>	VLA-ED: 1000 ppm VLA-ED: 1910 mg/m <sup>3</sup>	-
PINENES 80-56-8	-	-	-	VLA-ED: 20 ppm VLA-ED: 113 mg/m <sup>3</sup>	-
Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
ETHYL ALCOHOL 64-17-5	-	TWA: 1000 ppm	Skin STEL: 1900 mg/m <sup>3</sup> TWA: 260 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL: 1300 ppm STEL: 2500 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>
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	-	-	-
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL 3800 mg/m <sup>3</sup> MAK: 1000 ppm MAK: 1900 mg/m <sup>3</sup>	STEL: 1000 ppm STEL: 1920 mg/m <sup>3</sup> MAK: 500 ppm MAK: 960 mg/m <sup>3</sup>	NDS: 1900 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 950 mg/m <sup>3</sup> STEL: 625 ppm STEL: 1187.5 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>
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>	-

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

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

### 8.2. Exposure controls

**Engineering Controls** Ensure adequate ventilation, especially in confined areas.

#### **Personal protective equipment**

**Eye/face protection** Tightly fitting safety goggles.

**Skin and body protection** Antistatic boots. Wear fire/ flame resistant/ retardant clothing. Impervious gloves.

**Respiratory protection** NIOSH/MSHA approved respiratory protection is required to be worn.

**Environmental Exposure Controls** 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>	cloudy
<b>Aroma</b>	Spicy earthy chocolate, licorice, cherry, and tobacco notes Lemon
<b>Color</b>	gold to amber

<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	24 °C / 76 °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	0.8867 - 0.9167	FCC Method
Specific Gravity @ 20C	0.8897 - 0.9197	FCC Method
Refractive Index	1.35 - 1.38	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

Heat, flames and sparks.

### 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.

<b>Inhalation</b>	There is no data available for this product.
<b>Eye contact</b>	There is no data available for this product.
<b>Skin contact</b>	There is no data available for this product.
<b>Ingestion</b>	There is no data available for this product.

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

<b>ATEmix (oral)</b>	7,162.00 mg/kg
<b>ATEmix (dermal)</b>	9,174.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	67,485.79 mg/l

#### Unknown Acute Toxicity

98.83050981% of the mixture consists of ingredient(s) of unknown toxicity.  
37.48251981 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.  
97.42955981 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.  
98.83050981 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).  
98.83050981 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).  
38.88346981 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

#### Oral LD50

Chemical Name	Oral LD50	Dermal LD50	LC50 Inhalation
ETHYL ALCOHOL	7060 mg/kg ( Rat )		124.7 mg/L ( Rat ) 4 h

<b>Skin corrosion/irritation</b>	No information available.
<b>Eye damage/irritation</b>	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>Target Organ Effects</b>	Blood, Central nervous system, Eyes, Liver, Reproductive system, Respiratory system, Skin.
<b>Aspiration hazard</b>	No information available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

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

37.48196% 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
ETHYL ALCOHOL	-	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static
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

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

Chemical Name	log Pow
ETHYL ALCOHOL	-0.32
PINENES	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>	1197
<b>14.2 Proper shipping name</b>	EXTRACTS, FLAVOURING, LIQUID
<b>14.3 Hazard class</b>	3
<b>14.4 Packing Group</b>	III

#### **DOT/ADR/RID**

<b>14.1 UN/ID No</b>	1197
<b>14.2 Proper shipping name</b>	EXTRACTS, FLAVOURING, LIQUID
<b>14.3 Hazard class</b>	3
<b>14.4 Packing Group</b>	III

#### **ICAO/IATA**

<b>14.1 UN/ID No</b>	1197
<b>14.2 Proper shipping name</b>	EXTRACTS, FLAVOURING, LIQUID
<b>14.3 Hazard class</b>	3
<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>	-
<b>DSL/NDSL</b>	-
<b>EINECS/ELINCS</b>	-
<b>ENCS</b>	-
<b>IECSC</b>	-
<b>KECL</b>	-
<b>PICCS</b>	Complies
<b>AICS</b>	-

**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**

R10 - Flammable

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

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

H400 - Very toxic to aquatic life

H317 - May cause an allergic skin reaction

H315 - Causes skin irritation

H304 - May be fatal if swallowed and enters airways

H410 - Very toxic to aquatic life with long lasting effects

H226 - Flammable liquid and vapor

H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation

H303 - May be harmful if swallowed

**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** 09-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.