



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

Revision Date 24-Nov-2025

Version 2

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

### 1.1. Product identifier

**Product Code(s)** 336BEV  
**Product name** LEMON ITALIAN EXTRACT, NATURAL (PRIMO FIORE VARIETAL)

**Pure substance/mixture** Mixture  
Contains LIMONENE, ETHYL ALCOHOL

### 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.  
1361 Brass Mill Rd.  
Suite E  
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)  |
| Skin sensitization                | Category 1 - (H317)  |
| Carcinogenicity                   | Category 1A - (H350) |
| Chronic aquatic toxicity          | Category 3 - (H412)  |
| Flammable liquids                 | Category 3 - (H226)  |

### 2.2. Label elements

**Product identifier**  
Contains LIMONENE, ETHYL ALCOHOL



**Signal Word**  
Danger

#### Hazard Statements

H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation  
H350 - May cause cancer  
H412 - Harmful to aquatic life with long lasting effects  
H226 - Flammable liquid and vapor  
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)  
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)<br>Eye Irrit. 1 (H319)  | No data available         |
| LIMONENE      | 227-813-5 | 5989-27-5 | 1-5%     | Aquatic Acute 1 (H400)<br>Skin Sens. 1 (H317)<br>Skin Irrit. 1 (H315)<br>Asp. Tox. 1 (H304)<br>Aquatic Chronic 1 (H410)<br>Flam. Liq. 3 (H226)                        | No data available         |
| PINENES       | 201-291-9 | 80-56-8   | <1%      | Aquatic Acute 1 (H400)<br>Skin Sens. 1 (H317)<br>Skin Irrit. 1 (H315)<br>Asp. Tox. 1 (H304)<br>Aquatic Chronic 1 (H410)<br>Acute Tox. 5 (H303)<br>Flam. Liq. 3 (H226) | No data available         |
| CITRAL        | 226-394-6 | 5392-40-5 | <1%      | Aquatic Acute 2 (H401) Sens. 1 (H317)<br>Skin Irrit. 2 (H315)<br>Acute Tox. 5 (H313)<br>Flam. Liq. 4 (H227)   | No data available         |
| MYRCENE       | 204-622-5 | 123-35-3  | <1%      | Eye Irrit. 1 (H319) (EFA) Skin Irrit. 2 (315) (EFA) Asp. Tox. 1 (H304) (EFA)<br>Eye Irrit. 1 (H319) Skin Irrit. 2   | No data available         |

|  |  |  |  |        |  |
|--|--|--|--|--------|--|
|  |  |  |  | (H315) |  |
|--|--|--|--|--------|--|

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

|   |   |
|---|---|
| <b>Inhalation</b>                         | Move to fresh air. If symptoms persist, call a physician.   |
| <b>Skin contact</b>                       | 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. |
| <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.  |

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

|                      |                           |
|----------------------|---------------------------|
| <b>Main Symptoms</b> | No information available. |
|----------------------|---------------------------|

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

|                           |   |
|---------------------------|---|
| <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**

Ensure adequate ventilation. Use personal protective equipment as required.

**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                                      |
|--------------------------|----------------|--|--|--|--|
| ETHYL ALCOHOL<br>64-17-5 | -              | STEL: 3000 ppm<br>STEL: 5760 mg/m <sup>3</sup><br>TWA: 1000 ppm TWA:<br>1920 mg/m <sup>3</sup> | VME: 1000 ppm VME:<br>1900 mg/m <sup>3</sup><br>VLCT: 5000 ppm<br>VLCT: 9500 mg/m <sup>3</sup> | VLA-ED: 1000 ppm<br>VLA-ED: 1910 mg/m <sup>3</sup>   | -  |
| PINENES<br>80-56-8       | -              | -  | -  | VLA-ED: 20 ppm<br>VLA-ED: 113 mg/m <sup>3</sup>  | -  |
| MYRCENE<br>123-35-3      | -              | -  | TWA: 1000 mg/m <sup>3</sup><br>STEL: 1500 mg/m <sup>3</sup>                                    | -  | -  |
| Chemical Name            | Italy          | Portugal   | The Netherlands  | Finland  | Denmark                                      |
| ETHYL ALCOHOL<br>64-17-5 | -              | TWA: 1000 ppm  | Skin<br>STEL: 1900 mg/m <sup>3</sup><br>TWA: 260 mg/m <sup>3</sup>                             | TWA: 1000 ppm TWA:<br>1900 mg/m <sup>3</sup><br>STEL: 1300 ppm<br>STEL: 2500 mg/m <sup>3</sup> | TWA: 1000 ppm TWA:<br>1900 mg/m <sup>3</sup> |
| LIMONENE<br>5989-27-5    | -              | -  | -  | TWA: 25 ppm TWA:<br>140 mg/m <sup>3</sup><br>STEL: 50 ppm STEL:<br>280 mg/m <sup>3</sup>       | -  |
| PINENES                  | -              | TWA: 20 ppm  | -  | -  | -  |

| 80-56-8                  |  |  |                             |  |  |
|--------------------------|--|--|-----------------------------|--|--|
| Chemical Name            | Austria  | Switzerland  | Poland                      | Norway   | Ireland                                      |
| ETHYL ALCOHOL<br>64-17-5 | STEL 2000 ppm STEL<br>3800 mg/m <sup>3</sup><br>MAK: 1000 ppm MAK:<br>1900 mg/m <sup>3</sup> | STEL: 1000 ppm<br>STEL: 1920 mg/m <sup>3</sup><br>MAK: 500 ppm MAK:<br>960 mg/m <sup>3</sup> | NDS: 1900 mg/m <sup>3</sup> | TWA: 500 ppm TWA:<br>950 mg/m <sup>3</sup><br>STEL: 625 ppm STEL:<br>1187.5 mg/m <sup>3</sup>      | TWA: 1000 ppm TWA:<br>1900 mg/m <sup>3</sup> |
| LIMONENE<br>5989-27-5    | -  | STEL: 40 ppm STEL:<br>220 mg/m <sup>3</sup><br>MAK: 20 ppm MAK:<br>110 mg/m <sup>3</sup>     | -                           | TWA: 25 ppm TWA:<br>140 mg/m <sup>3</sup><br>STEL: 37.5 ppm<br>STEL: 175 mg/m <sup>3</sup>         | -  |
| PINENES<br>80-56-8       | -  | -  | -                           | TWA: 25 ppm TWA:<br>140 mg/m <sup>3</sup><br>Skin<br>STEL: 37.5 ppm<br>STEL: 175 mg/m <sup>3</sup> | -  |
| MYRCENE<br>123-35-3      | -  | -  | -                           | TWA: 40 ppm<br>TWA: 275 mg/m <sup>3</sup><br>STEL: 60 ppm<br>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

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

### Personal protective equipment

**Eye/face protection** Tightly fitting safety goggles.  
**Skin and body protection** Long sleeved clothing.

**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

**Physical state** liquid  
**Appearance** clear  
**Odor** Characteristic of lemon  
**Color** Slightly yellow

#### Property

#### Values

#### • Method

|                              |                 |                          |
|------------------------------|-----------------|--------------------------|
| pH                           |                 | No information available |
| Melting/freezing point       |                 | No information available |
| Boiling point/boiling range  |                 | FCC Method               |
| Flash Point                  | 24 °C / 75 °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       | 0.8992 - 0.9292 | FCC Method               |
| Specific Gravity @ 20C       | 0.9022 - 0.9322 | FCC Method               |
| Refractive Index             | 1.3489 - 1.3789 | 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**

|                    |                          |
|--------------------|--------------------------|
| Softening point    | No information available |
| Molecular Weight   | No information available |
| VOC Content(%)     | No information available |
| Density VALUE      | No information available |
| Bulk Density VALUE | 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) 7,041.00 mg/kg

ATEmix (dermal) 2,952.00 mg/kg

ATEmix (inhalation-dust/mist) 66,892.66 mg/l

#### Unknown Acute Toxicity

99.3671% of the mixture consists of ingredient(s) of unknown toxicity.

38.0369 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

98.0369 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

99.3671 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

99.3671 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

39.3671 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

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

**Sensitization** No information available.

**Germ Cell Mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**Specific target organ systemic toxicity (single exposure)** No information available.

**Specific target organ systemic toxicity (repeated exposure)** No information available.

**Target Organ Effects** Blood, Central nervous system, Eyes, Liver, Reproductive system, Respiratory system, Skin.

**Aspiration hazard** No information available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

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

38.0538% of the mixture consists of components(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 |
| 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 |
|---------------|---------|
| ETHYL ALCOHOL | -0.32   |
| PINENES       | 4.1     |
| CITRAL        | 2.76    |

**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****Waste from residues / unused products**

Dispose of in accordance with local regulations.

**Contaminated packaging**

Empty remaining contents.

**Other Information**

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**

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

**DOT/ADR/RID**

|               |      |
|---------------|------|
| 14.1 UN/ID No | 1197 |
|---------------|------|



|                           |                              |
|---------------------------|------------------------------|
| 14.2 Proper shipping name | EXTRACTS, FLAVOURING, LIQUID |
| 14.3 Hazard class         | 3                            |
| 14.4 Packing Group        | III                          |

**ICAO/IATA**

|                           |                              |
|---------------------------|------------------------------|
| 14.1 UN/ID No             | 1197                         |
| 14.2 Proper shipping name | EXTRACTS, FLAVOURING, LIQUID |
| 14.3 Hazard class         | 3                            |
| 14.4 Packing Group        | III                          |
| 14.5 Environmental hazard | Not applicable               |
| 14.6 Special Provisions   | 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**

|               |   |
|---------------|---|
| TSCA          | - |
| DSL/NDL       | - |
| EINECS/ELINCS | - |
| ENCS          | - |
| IECSC         | - |
| KECL          | - |
| PICCS         | - |
| AICS          | - |

**Legend:**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDL - 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

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**

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

H225 - Highly flammable liquid and vapor

H303 - May be harmful if swallowed

**Legend**

SVHC: Substances of Very High Concern for Authorization:

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

TWA: Time weighted average

STEL:

Short term exposure limit

Ceiling: Maximum limit value:

\*

Skin designation

**Revision Date** 24-Nov-2025**Reason for revision:** Not applicable.**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.****Disclaimer:****WARNING/DISCLAIMER:**

Our ingredients have not been tested, nor have they been determined safe, for inhalation or use in any electronic smoking devices, electronic nicotine delivery systems, electronic cigarettes, or other similar devices (collectively "E-Cigarettes") or in any E-Liquids used with E-Cigarettes. By receiving Apex Flavors, Inc ingredients, the recipient confirms that they will not use these ingredients in connection with the manufacture and distribution of E-Cigarettes, E-Liquids or any component thereof. **WE DISCLAIM, TO THE FULLEST EXTENT PERMITTED BY LAW, ALL WARRANTIES, EXPRESS OR IMPLIED, and disclaim all liability in connection with the use of our ingredients in connection with E-Cigarettes and E-Liquids. All such risks are assumed by you and the user.**

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