



## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1. Product identifier**

**Number** 198

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

**Product name** GUAVA FLAVOR, NATURAL WONF  
**Pure substance/mixture** Mixture

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

**Recommended Use** No information available

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

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

## 2. HAZARDS IDENTIFICATION

**2.1. Classification of the substance or mixture**

Acute dermal toxicity	Category 5
Serious eye damage/eye irritation	Category 2A
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2
Flammable liquids	Category 3

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**  
For the full text of the R-phrases mentioned in this Section, see Section 16

**Symbol(s)**  
Xn - Harmful

**R-code(s)**  
Xn;R21

2.2. Label elements**Signal Word**

Warning

**Hazard Statements**

H313 - May be harmful in contact with skin

H319 - Causes serious eye irritation

H411 - Toxic to aquatic life with long lasting effects

H226 - Flammable liquid and vapor

**Precautionary Statements**

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

2.3. Other information**3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances

Chemical Name	EC-No	CAS-No	Alternate CAS #	Weight %	Classification according to Directive 67/548/EEC or 1999/45/EC	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
ETHYL ALCOHOL	Present	64-17-5		30-50%	F; R11	Eye Irrit. 1 (H319) (EFFA) Flam. Liq. 2 (H225) (EFFA) Flam. Liq. 2 (H225)	No data available
TRIETHYL CITRATE	201-070-7	77-93-0		1-5%	-	No data available	No data available
Trade Secret	Listed	-		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
LIMONENE	227-813-5	5989-27-5		<1	R10, XI; R38, XI; R43, N; R50/53;	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 2 (H316) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)	No data available
Trade Secret	Listed	-		<1	-	Aquatic Acute 3 (H402) Skin Irrit. 2 (H316) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available

Trade Secret	Listed	-		<1	F; R11 Xi; R36 R66 R67	Eye Irrit. 1 (H319) Flam. Liq. 2 (H225) Flam. Liq. 2 (H225)	No data available
Trade Secret	Listed	-		<1	R10, XI; R43, N; R50/53, XN; R65;	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 3 (H316) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Acute Tox. 5 (H303) Flam. Liq. 3 (H226)	No data available
Trade Secret	Listed	-		<1	R10 R66	Aquatic Acute 3 (H402) Flam. Liq. 3 (H226)	No data available
Trade Secret	Listed	-		<1	XN; R22;	Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Acute Tox. 4 (H302) Acute Tox. 5 (H313) Flam. Liq. 4 (H227)	No data available
Trade Secret	Listed	-		<1	-	Skin Corr. 1C (314) (EFFA) Eye Dam. 1 (H318) (EFFA) Acute Tox. 4 (H302) (EFFA) Acute Tox. 4 (H312)(EFFA) Flam. Liq. 4 (H227)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA) Asp. Tox. 1 (H304) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Sens. 1 (H317) (EFFA) Skin Irrit. 3 (316) (EFFA) Aquatic Chronic 2 (H411) (EFFA) Acute Tox. 4 (H302) (EFFA) Acute Tox. 3 (H311)(EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Eye Irrit. 1 (H319) Skin Irrit. 2 (H316) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available
Trade Secret	Listed	-		<1	-	Acute Tox. 4 (H302)	No data available
Trade Secret	Listed	-		<1	Xn; R22	Acute Tox. 4 (H302)	No data available
Trade Secret	Listed	-		<1	-	Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA) Flam. Liq. 4 (H227)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
ACETOIN 96/100% FCC (ACETYL METHYL CARBINOL)	208-174-1	513-86-0		<1	-	Flam. Liq. 3 (H226)	No data available
Trade Secret	Listed	-		<1	-	Aquatic Acute 3 (H402) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 4 (H227)(EFFA)	No data available
Trade Secret	Listed	-		<1	-	Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Acute Tox. 5 (H303)(EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available

Trade Secret	Listed	-		<1	-	Aquatic Acute 3 (H402) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 2 (315) (EFFA) Acute Tox. 4 (H302) (EFFA) Flam. Liq. 4 (H227)(EFFA) Aquatic Acute 3 (H402) Eye Irrit. 1 (H319) Acute Tox. 4 (H302) Acute Tox. 5 (H313)	No data available
Trade Secret	Listed	-		<1	-	Eye Irrit. 1 (H319) Acute Tox. 5 (H303) Eye Irrit. 1 (H319) (EFFA) Acute Tox. 5 (H303)(EFFA)	No data available
Trade Secret	Listed	-		<1	XI; R38, XI; R41, XI; R43;	Aquatic Acute 2 (H401) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Skin Irrit. 2 (H316) Acute Tox. 5 (H303)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA) Acute Tox. 3 (H301) (EFFA) Flam. Liq. 2 (H225) (EFFA)	No data available
Trade Secret	Not Listed	-		<1	-	No data available	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA)	No data available
Trade Secret	Listed	-		<1	R10, R52/53, XN; R65;	Aquatic Acute 3 (H402) Skin Irrit. 3 (H316) Asp. Tox. 1 (H304) Aquatic Chronic 3 (H412) Flam. Liq. 3 (H226)	No data available
Trade Secret	Listed	-		<1	-	Flam. Liq. 3 (H226)(EFFA)	No data available
Trade Secret	Listed	-		<1	XN; R22	Skin Irrit. 3 (H316) Acute Tox. 4 (H302) Flam. Liq. 4 (H227)	No data available
Trade Secret	Listed	-		<1	-	Skin Irrit. 3 (316) (EFFA) Acute Tox. 5 (H303)(EFFA) Flam. Liq. 4 (H227)(EFFA)	No data available
Trade Secret	Listed	-		<1	XI; R38	Aquatic Acute 3 (H402) Skin Irrit. 2 (H316) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available

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

## 4. FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General advice</b>	If symptoms persist, call a physician Do not breathe dust/fume/gas/mist/vapors/spray Do not get in eyes, on skin, or on clothing
<b>Eye contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes Keep eye wide open while rinsing If symptoms persist, call a physician
<b>Skin contact</b>	Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.
<b>Inhalation</b>	Move to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
<b>Self-protection of the first aider</b>	Use personal protective equipment

**4.2. Most important symptoms and effects, both acute and delayed****4.3. Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically

**5. FIRE-FIGHTING MEASURES****5.1. Extinguishing media****Suitable Extinguishing Media**

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

**Extinguishing media which shall not be used for safety reasons**

No information available

**5.2. Special hazards arising from the substance or mixture****Special Hazard**

None

**5.3. Advice for firefighters****Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear

**6. ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

See Section 12 for additional Ecological Information

**6.2. Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

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

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

**7. HANDLING AND STORAGE****7.1. Precautions for safe handling**

Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

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

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

**7.3 Specific end use(s)**

**Exposure scenario** N/A

**Other Guidelines** N/A

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1. Control parameters****Exposure limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

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>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup> STEL: 5000 ppm STEL: 9500 mg/m <sup>3</sup>	STEL: 1000 ppm STEL: 1910 mg/m <sup>3</sup>	TWA: 500 ppm TWA: 960 mg/m <sup>3</sup> Ceiling / Peak: 1000 ppm Ceiling / Peak: 1920 mg/m <sup>3</sup> Skin
LIMONENE 5989-27-5					MAK: 20 ppm MAK: 110 mg/m <sup>3</sup> Ceiling / Peak: 40 ppm Ceiling / Peak: 220 mg/m <sup>3</sup> TWA: 20 ppm TWA: 110 mg/m <sup>3</sup>
Trade Secret		STEL: 400 ppm TWA: 200 ppm	VME: 400 ppm VME: 1400 mg/m <sup>3</sup>	VLA-ED: 400 ppm VLA-ED: 1460 mg/m <sup>3</sup>	MAK: 400 ppm MAK: 1500 mg/m <sup>3</sup> Ceiling / Peak: 800 ppm Ceiling / Peak: 3000 mg/m <sup>3</sup> TWA: 400 ppm TWA: 1500 mg/m <sup>3</sup>
Trade Secret				VLA-ED: 20 ppm VLA-ED: 113 mg/m <sup>3</sup>	
Trade Secret	TWA 50 ppm TWA: 270 mg/m <sup>3</sup> STEL 100 ppm STEL: 540 mg/m <sup>3</sup>		VME: 50 ppm VME: 270 mg/m <sup>3</sup> VLCT: 100 ppm VLCT: 540 mg/m <sup>3</sup>	VLA-EC: 100 ppm VLA-EC: 540 mg/m <sup>3</sup> VLA-ED: 50 ppm VLA-ED: 270 mg/m <sup>3</sup>	MAK: 50 ppm MAK: 270 mg/m <sup>3</sup> Ceiling / Peak: 50 ppm Ceiling / Peak: 270 mg/m <sup>3</sup> TWA: 50 ppm TWA: 270 mg/m <sup>3</sup>
Trade Secret					TWA: 50 ppm TWA: 210 mg/m <sup>3</sup>
Trade Secret					TWA: 20 ppm TWA: 106 mg/m <sup>3</sup>
Trade Secret					Skin
Trade Secret				VLA-ED: 10 ppm	

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>	
Trade Secret		TWA: 400 ppm		TWA: 300 ppm TWA: 1100 mg/m <sup>3</sup> STEL: 500 ppm STEL: 1800 mg/m <sup>3</sup>	TWA: 150 ppm TWA: 540 mg/m <sup>3</sup>
Trade Secret		TWA: 20 ppm			
Trade Secret	TWA: 50 ppm TWA: 270 mg/m <sup>3</sup> STEL: 100 ppm STEL: 540 mg/m <sup>3</sup>	STEL: 100 ppm TWA: 50 ppm	STEL: 530 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 270 mg/m <sup>3</sup> STEL: 100 ppm STEL: 540 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 266 mg/m <sup>3</sup>

Trade Secret				TWA: 1 ppm TWA: 4.4 mg/m <sup>3</sup> STEL: 4 ppm STEL: 17.4 mg/m <sup>3</sup> Ceiling: 4 ppm Ceiling: 17.4 mg/m <sup>3</sup>	
Trade Secret				STEL: 10 ppm STEL: 42 mg/m <sup>3</sup>	
Trade Secret		TWA: 10 ppm			

Chemical Name	Austria	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	Poland	Norway
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL 3800 mg/m <sup>3</sup> TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	500 ppm NGV 1000 mg/m <sup>3</sup> NGV	STEL: 1000 ppm STEL: 1920 mg/m <sup>3</sup> TWA: 500 ppm TWA: 960 mg/m <sup>3</sup>	TWA: 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>
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>
Trade Secret	STEL 600 ppm STEL 2100 mg/m <sup>3</sup> MAK: 300 ppm MAK: 1050 mg/m <sup>3</sup>	150 ppm NGV 500 mg/m <sup>3</sup> NGV	STEL: 800 ppm STEL: 2800 mg/m <sup>3</sup> MAK: 400 ppm MAK: 1400 mg/m <sup>3</sup>	NDSch: 600 mg/m <sup>3</sup> NDS: 200 mg/m <sup>3</sup>	TWA: 150 ppm TWA: 550 mg/m <sup>3</sup> STEL: 187.5 ppm STEL: 687.5 mg/m <sup>3</sup>
Trade Secret		25 ppm NGV 150 mg/m <sup>3</sup> NGV			TWA: 25 ppm TWA: 140 mg/m <sup>3</sup> Skin STEL: 37.5 ppm STEL: 175 mg/m <sup>3</sup>
Trade Secret	STEL 100 ppm STEL 540 mg/m <sup>3</sup> MAK: 50 ppm MAK: 270 mg/m <sup>3</sup>	100 ppm NGV 500 mg/m <sup>3</sup> NGV		NDSch: 500 mg/m <sup>3</sup> NDS: 250 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 260 mg/m <sup>3</sup> STEL: 75 ppm STEL: 325 mg/m <sup>3</sup>
Trade Secret				NDSch: 40 mg/m <sup>3</sup> NDS: 10 mg/m <sup>3</sup>	
Trade Secret				STEL: 80 mg/m <sup>3</sup> TWA: 40 mg/m <sup>3</sup>	
Trade Secret		1 ppm NGV			

Component	Ireland
ETHYL ALCOHOL 64-17-5 (30-50%)	STEL: 1000 ppm
Trade Secret (<1)	TWA: 200 ppm STEL: 400 ppm
Trade Secret (<1)	TWA: 50 ppm TWA: 260 mg/m <sup>3</sup> STEL: 100 ppm STEL: 520 mg/m <sup>3</sup>
Trade Secret (<1)	TWA: 20 ppm

**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 Protection** Tightly fitting safety goggles

<b>Hand Protection</b>	Protective gloves
<b>Skin and body protection</b>	Long sleeved clothing
<b>Respiratory protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	liquid	<b>Appearance</b>	liquid
<b>Odor</b>	typical of guava	<b>Color</b>	Colorless to light yellow.

<u>Property</u>	<u>Values</u>	<u>Method</u>
<b>pH</b>		No information available
<b>Melting/freezing point</b>		No information available
<b>Boiling point/boiling range</b>		FCC Method
<b>Flash Point</b>	25 °C / 77 °F	Closed cup
<b>Evaporation rate</b>		FCC Method
<b>Flammability (solid, gas)</b>		No information available
<b>Flammability Limits in Air</b>		No information available
<b>Upper flammability limit</b>		
<b>lower flammability limit</b>		
<b>Vapor pressure mm Hg 20°C</b>		No information available
<b>Vapor density</b>		No information available
<b>Relative density</b>		No information available
<b>Specific Gravity @ 25C</b>	1.004 - 1.024	FCC Method
<b>Specific Gravity @ 20C</b>	1.007 - 1.027	FCC Method
<b>Refractive Index</b>	1.404 - 1.424	FCC Method
<b>Water solubility</b>		No information available
<b>Partition coefficient: n-octanol/water</b>		No information available
<b>Autoignition temperature</b>		No information available
<b>Decomposition temperature</b>		No information available
<b>Viscosity, dynamic</b>		No information available
<b>Explosive properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	

### 9.2. Other information

<b>VOC Content(%)</b>	39.0194992341567
<b>Molecular Weight</b>	No information available

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

### 10.2. Chemical stability

Stable under normal conditions

### 10.3. Possibility of hazardous reactions

### 10.4. Conditions to avoid

Heat, flames and sparks

### 10.5. Incompatible materials



No materials to be especially mentioned

### 10.6. Hazardous decomposition products

None under normal use conditions

## 11. TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Acute toxicity

**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

**Acute toxicity** 3.57926% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document (Rev. 1, 2005):

**Oral** 5,288.00 mg/kg  
**Dermal** 3,534.00 mg/kg

Chemical Name	Oral LD50	Dermal LD50	LC50 Inhalation
ETHYL ALCOHOL			124.7 mg/L ( Rat ) 4 h
TRIETHYL CITRATE	5900 mg/kg ( Rat )	5 g/kg ( Rabbit )	
Trade Secret	13 g/kg ( Rat )	2 g/kg ( Rabbit )	
LIMONENE	4400 mg/kg ( Rat )	2000 mg/kg ( Rabbit )	
Trade Secret	5620 mg/kg ( Rat )	18000 mg/kg ( Rabbit ) 20 mL/kg ( Rabbit )	
Trade Secret	2100 mg/kg ( Rat )	5000 mg/kg ( Rat )	
Trade Secret	16600 mg/kg ( Rat )	5 g/kg ( Rabbit )	
Trade Secret	800 mg/kg ( Rat )	1250 mg/kg ( Rabbit )	
Trade Secret	1870 µL/kg ( Rat )	1460 µL/kg ( Rabbit )	
Trade Secret	780 mg/kg ( Rat )	600 mg/kg ( Rabbit )	
Trade Secret	4700 mg/kg ( Rat )	5 g/kg ( Rabbit )	
Trade Secret	5170 mg/kg ( Rat )		
Trade Secret	720 mg/kg ( Rat )	1500 mg/kg ( Rabbit )	21 mg/L ( Rat ) 1 h
Trade Secret	= 4890 mg/kg ( Rat )		
Trade Secret	5 g/kg ( Rat )	5 g/kg ( Rabbit )	
ACETOIN 96/100% FCC (ACETYL METHYL CARBINOL)	5 g/kg ( Rat )	5 g/kg ( Rabbit )	
Trade Secret	> 3200 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	
Trade Secret	= 3 g/kg ( Rat )		
Trade Secret	1300 mg/kg ( Rat )	2500 mg/kg ( Rabbit )	
Trade Secret			1.38 mg/L ( Rat ) 4 h
Trade Secret	3600 mg/kg ( Rat )	5000 mg/kg ( Rabbit )	
Trade Secret	535 mg/kg ( Rat )		
Trade Secret	5 g/kg ( Rat )	5 g/kg ( Rabbit )	
Trade Secret	1177 mg/kg ( Rat )		
Trade Secret	2790 mg/kg ( Rat )	5610 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

<b>Carcinogenicity</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

## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants

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 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	
Trade Secret	3300: 48 h Desmodemus subspicatus mg/L EC50	220-250: 96 h Pimephales promelas mg/L LC50 flow-through 352-500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 484: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	560: 48 h Daphnia magna mg/L EC50 Static
Trade Secret		0.28: 96 h Pimephales promelas mg/L LC50 static	41: 48 h Daphnia magna mg/L LC50
Trade Secret		0.8-1.44: 96 h Lepomis macrochirus mg/L LC50 flow-through 10.6-11.8: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 12.69: 96 h Oncorhynchus mykiss mg/L LC50 static 6.8-8.53: 96 h Pimephales promelas mg/L LC50 flow-through 7.5: 96 h Lepomis macrochirus mg/L LC50 static	50: 24 h Daphnia magna mg/L EC50
Trade Secret		8.02-9.97: 96 h Pimephales promelas mg/L LC50 flow-through	
Trade Secret		352-412: 96 h Pimephales promelas mg/L LC50 flow-through	
Trade Secret		144: 96 h Brachydanio rerio mg/L LC50 static 89.7-106: 96 h Pimephales promelas mg/L LC50 flow-through	201: 24 h Daphnia magna mg/L EC50
Trade Secret		12 - 16.5: 96 h Pimephales promelas mg/L LC50 flow-through	
Trade Secret	14: 48 h Desmodemus subspicatus mg/L EC50 static	11.4 - 12.9: 96 h Pimephales promelas mg/L LC50 flow-through 17.68: 96 h Oncorhynchus mykiss mg/L LC50 static	15 - 26: 24 h Daphnia magna mg/L EC50
Trade Secret	490: 72 h Desmodemus subspicatus mg/L EC50	220 - 460: 96 h Leuciscus idus mg/L LC50 static	287.17: 48 h Daphnia magna mg/L EC50

Trade Secret			23: 48 h Daphnia pulex mg/L EC50
Trade Secret		17.1 - 19: 96 h Pimephales promelas mg/L LC50 flow-through	
Trade Secret		6.7: 96 h Pimephales promelas mg/L LC50 flow-through	
Trade Secret	88.3: 96 h Desmodemus subspicatus mg/L EC50	22-46: 96 h Leuciscus idus mg/L LC50 static	20: 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
Trade Secret	0.6
Trade Secret	4.1
Trade Secret	1.48
Trade Secret	2.03
Trade Secret	1.78
Trade Secret	3.15
Trade Secret	1.38
Trade Secret	2.72
Trade Secret	2.84 - 3.1

**12.4. Mobility in soil**

No information available

**12.5. Results of PBT and vPvB assessment****12.6. Other adverse effects**

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Trade Secret	Group III Chemical		
Trade Secret	Group III Chemical		

**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 containers should be taken to an approved waste handling site for recycling or disposal
<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

**14. TRANSPORT INFORMATION****DOT****IMDG / IMO**

<b>Proper shipping name</b>	EXTRACTS, FLAVOURING, LIQUID
<b>Hazard class</b>	3
<b>UN/ID No</b>	1197

<b>Packing Group</b> <b>Marine pollutant</b>	III This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
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**ICAO/IATA**

<b>UN/ID No</b>	1197
<b>Proper shipping name</b>	EXTRACTS, FLAVOURING, LIQUID
<b>Hazard class</b>	3
<b>Packing Group</b>	III
<b>ERG Code</b>	127

**15. REGULATORY INFORMATION**

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

**WGK Classification**

Chemical Name	Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes
ETHYL ALCOHOL 64-17-5	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 2
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1
ACETOIN 96/100% FCC (ACETYL METHYL CARBINOL) 513-86-0	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1
Trade Secret	Hazard Class 1

**International Inventories**

**All of the components in the product are on the following Inventory lists:** United States of America (TSCA), Canada (DSL/NDSL), Australia (AICS), China (IECSC), Philippines (PICCS).

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

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

### 15.2. Chemical safety assessment

## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation H225 - Highly flammable liquid and vapor

Revision Date 23-Jun-2015

Revision Note Not applicable.

Revision# 1

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.

### Disclaimer

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