



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

1.1. Product identifier

Number 1410
EC-No 289-753-6
CAS-No 8000-29-1
FEMA Numbers 2308

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

Product name CITRONELLA OIL - PURE, UNDILUTED, THERAPEUTIC & FOOD GRADE
Pure substance/mixture Natural Complex Substance

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 oral toxicity	Category 5
Acute dermal toxicity	Category 5
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2
Flammable liquids	Category 4

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)

Xi - Irritant
 N - Dangerous for the environment

R-code(s)

Xi;R41 - Xi;R38 - R43 - N;R51-53

2.2. Label elements

**Signal Word**

Warning

Hazard Statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H317 - May cause an allergic skin reaction

H411 - Toxic to aquatic life with long lasting effects

H227 - Combustible liquid

Precautionary Statements

P280 - Wear eye protection/ face protection

P321 - Specific treatment (see .? on this label)

P403 + P235 - Store in a well-ventilated place. Keep cool

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

P280 - Wear protective gloves/ eye protection/ face protection

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
CITRONELLAL	203-376-6	106-23-0		30-50%	XI; R38, XI; R43, N; R51/53;	Aquatic Acute 2 (H401) Skin Sens. 1 (H317) Eye Irrit. 1 (H319) Skin Irrit. 2 (H316) Aquatic Chronic 2 (H411) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available
GERANIOL	203-377-1	106-24-1		20-30%	XI; R38, XI; R41, XI; R43;	Aquatic Acute 3 (H402) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Skin Irrit. 2 (H315) Acute Tox. 5 (H303)	No data available
CITRONELLOL	203-375-0	106-22-9		10-15%	XI; R38, XI; R43, N; R51/53;	Aquatic Acute 2 (H401) Skin Sens. 1 (H317) Skin Irrit. 2 (H316) Acute Tox. 5 (H303) Acute Tox. 5 (H313)	No data available
GERANYL ACETATE	203-341-5	105-87-3		1-5%	N; R51/53;	Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Aquatic Chronic 2 (H411)	No data available
LIMONENE	227-813-5	5989-27-5		1-5%	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

LINALLOOL	201-134-4	78-70-6		1-5%	XI; R38	Aquatic Acute 3 (H402) Skin Irrit. 2 (H316) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available
FARNESOL	225-004-1	4602-84-0		1-5%	XI; R36/38, XI; R43;	Skin Sens. 1 (H317) Eye Irrit. 1 (H319) Skin Irrit. 2 (H316)	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

General advice	If symptoms persist, call a physician
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. 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.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. Wash off immediately with soap and plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Immediate medical attention is not required. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Inhalation	Move to fresh air. If symptoms persist, call a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. Move to fresh air in case of accidental inhalation of vapors or decomposition products.
Self-protection of the first aider	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 May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use Dry chemical Carbon dioxide CO₂ Water spray Alcohol-resistant foam

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

Wear self contained breathing apparatus for fire fighting if necessary

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid contact with eyes and skin. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges.

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

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

Use personal protective equipment as required. Ensure adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Do not breathe dust/fume/gas/mist/vapors/spray. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from heat, sparks and open flame. No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

7.2. Conditions for safe storage, including any incompatibilities

Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat and sources of ignition. Keep in properly labeled containers. Keep away from heat.

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
LIMONENE 5989-27-5					MAK: 20 ppm MAK: 110 mg/m ³ Ceiling / Peak: 40 ppm Ceiling / Peak: 220 mg/m ³ TWA: 20 ppm TWA: 110 mg/m ³

Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
LIMONENE 5989-27-5				TWA: 25 ppm TWA: 140 mg/m ³ STEL: 50 ppm STEL: 280 mg/m ³	

Chemical Name	Austria	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	Poland	Norway
LIMONENE 5989-27-5			STEL: 40 ppm STEL: 220 mg/m ³ MAK: 20 ppm MAK: 110 mg/m ³		TWA: 25 ppm TWA: 140 mg/m ³ STEL: 37.5 ppm STEL: 175 mg/m ³

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

Hand Protection Protective gloves

Skin and body protection Long sleeved clothing Apron Impervious gloves Chemical resistant apron Antistatic boots

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

General Hygiene Considerations When using, do not eat, drink or smoke Wash contaminated clothing before reuse Provide regular cleaning of equipment, work area and clothing

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

Physical state	liquid	Appearance	clear
Odor	lemon-like	Color	light yellow to brown

<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	79 °C / 175 °F	Closed cup
Evaporation rate		FCC Method
Flammability (solid, gas)		No information available
Flammability Limits in Air		No information available
Upper flammability limit		
lower flammability limit		
Vapor pressure mm Hg 20°C		No information available
Vapor density		No information available
Relative density		No information available
Specific Gravity @ 25C	0.850 - 0.920	FCC Method
Specific Gravity @ 20C	0.853 - 0.923	FCC Method
Refractive Index	1.445 - 1.500	FCC Method
Water solubility		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, dynamic		No information available
Explosive properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

VOC Content(%)	5
Molecular Weight	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	12.8% 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	3,091.00 mg/kg
Dermal	3,190.00 mg/kg
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
Specific target organ systemic toxicity (single exposure)	No information available
Specific target organ systemic toxicity (repeated exposure)	No information available
Target Organ Effects	No information available
Aspiration hazard	No information available

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Toxic to aquatic organisms, may cause long-term adverse effects in 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	
LINALOOL	88.3: 96 h Desmodesmus 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
LINALOOL	3.1

12.4. Mobility in soil

No information available

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

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal
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

14. TRANSPORT INFORMATION

DOT

UN/ID No	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (LIMONENE, LINALOOL)
Hazard class	9
Packing Group	III
ERG Code	171

IMDG / IMO

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

ICAO/IATA

Not regulated

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
CITRONELLAL 106-23-0	Hazard Class 1
CITRONELLOL 106-22-9	Hazard Class 1

LINALOOL 78-70-6	Hazard Class 1
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International Inventories

All of the components in the product are on the following Inventory lists: No information available, United States of America (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

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

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****Risk Combination Phrases**

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R36/38 - Irritating to eyes and skin

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

H401 - Toxic to aquatic life H316 - Causes mild skin irritation H411 - Toxic to aquatic life with long lasting effects H317 - May cause an allergic skin reaction H303 - May be harmful if swallowed H313 - May be harmful in contact with skin H319 - Causes serious eye irritation H227 - Combustible liquid H402 - Harmful to aquatic life H318 - Causes serious eye damage H315 - Causes skin irritation H400 - Very toxic to aquatic life H304 - May be fatal if swallowed and enters airways H410 - Very toxic to aquatic life with long lasting effects H226 - Flammable liquid and vapor

Revision Date	10-Aug-2016
Revision Note	Not applicable.
Revision#	1.04

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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