

SECTION 1: Identification

1.1. Identification

Product name : CITRONELLA OIL
CAS-No. : 8000-29-1

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

Use of the substance/mixture : Industrial uses: Uses of substances as such or in preparations* at industrial sites

1.3. Details of the supplier of the safety data sheet

Camden-Grey Essential Oils, Inc.
5751 Halifax Ave., Unit 2
Fort Myers, FL 33912
www.camdengrey.com

1.4. Emergency telephone number

Emergency number Chemtrec -1.800.424.9300/ 1.703.527.3887 CCN330

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 4	H227 -	Combustible liquid
Skin Irrit. 2	H315 -	Causes skin irritation.
Eye Dam. 1	H318 -	Causes serious eye damage.
Skin Sens. 1	H317 -	May cause an allergic skin reaction.
Aquatic Acute 2	H401 -	Toxic to aquatic life
Aquatic Chronic 2	H411 -	Toxic to aquatic life with long lasting effects.

Full text of H statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :

- H227 - Combustible liquid
- H315 - Causes skin irritation.
- H317 - May cause an allergic skin reaction.
- H318 - Causes serious eye damage.
- H401 - Toxic to aquatic life
- H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS-US) :

- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 - Wash hands thoroughly after handling
- P272 - Contaminated work clothing must not be allowed out of the workplace
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/protective clothing/eye protection
- P302+P352 - IF ON SKIN: Wash with plenty of water/...
- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER/doctor
- P321 - Specific treatment (see supplemental first aid instruction on this label)
- P332+P313 - If skin irritation occurs: Get medical advice/attention.
- P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
- P362+P364 - Take off contaminated clothing and wash it before reuse.
- P363 - Wash contaminated clothing before reuse.
- P370+P378 - In case of fire: Use media other than water to extinguish.

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P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose in a safe manner in accordance with local/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Citronellal	(CAS-No.) 106-23-0	25 - 50	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Geraniol	(CAS-No.) 106-24-1	13.2 - 14.3	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 3, H402
dl-Citronellol	(CAS-No.) 106-22-9	10 - 25	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Aquatic Acute 3, H402
Nerol	(CAS-No.) 106-25-2	7.26 - 8.8	Skin Irrit. 2, H315 Skin Sens. 1B, H317
Geranyl acetate	(CAS-No.) 105-87-3	1 - 5	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 3, H412
d-Limonene	(CAS-No.) 5989-27-5	1 - 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Farnesol	(CAS-No.) 4602-84-0	1 - 5	Skin Irrit. 2, H315 Skin Sens. 1B, H317
Linalool	(CAS-No.) 78-70-6	1 - 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash with plenty of water/.... Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instruction on this label). If skin irritation or rash occurs: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Immediately call a POISON CENTER/doctor. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: May cause an allergic skin reaction.
Symptoms/effects after skin contact	: Causes skin irritation. Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage. Serious damage to eyes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : dry chemical powder. Water spray. Dry powder. Foam. Carbon dioxide.

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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Combustible liquid.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Take up liquid spill into absorbent material.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautions for safe handling	: Ensure good ventilation of the work station. No open flames. No smoking. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep in fireproof place. Store in a well-ventilated place. Keep cool.
Incompatible materials	: Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Hand protection	: Protective gloves.
Eye protection	: Safety glasses.
Skin and body protection	: Wear suitable protective clothing.

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Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : Mixture contains one or more component(s) which have the following colour(s):
Colourless to light yellow Colourless
Odour : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure.
Mixture contains one or more component(s) which have the following odour(s):
Lemon odour Floral odour Mild odour
Odour threshold : No data available
pH : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : No data available
Flash point : 170 °F
Relative evaporation rate (butylacetate=1) : No data available
Flammability (solid, gas) : No data available
Explosive limits : No data available
Explosive properties : No data available
Oxidising properties : No data available
Vapour pressure : 0.8 mm Hg 25°C
Relative density : 0.89
Relative vapour density at 20 °C : No data available
Solubility : Poorly soluble in water.
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : < 20.5 mm²/s
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Combustible liquid. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

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Geraniol (106-24-1)	
LD50 oral rat	3600 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
ATE US (oral)	3600 mg/kg bodyweight
Citronellal (106-23-0)	
LD50 oral rat	2420 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
ATE US (oral)	2420 mg/kg bodyweight
dl-Citronellol (106-22-9)	
LD50 oral rat	3450 mg/kg (Rat)
LD50 dermal rabbit	2650 mg/kg (Rabbit)
ATE US (oral)	3450 mg/kg bodyweight
ATE US (dermal)	2650 mg/kg bodyweight
d-Limonene (5989-27-5)	
LD50 oral rat	4400 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight
ATE US (oral)	4400 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

d-Limonene (5989-27-5)	
IARC group	3 - Not classifiable

Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified

Specific target organ toxicity (repeated exposure)	: Not classified
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Aspiration hazard	: Not classified
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Symptoms/effects after inhalation	: May cause an allergic skin reaction.
Symptoms/effects after skin contact	: Causes skin irritation. Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage. Serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Toxic to aquatic life with long lasting effects.
Ecology - water	: Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

Geraniol (106-24-1)	
LC50 fish 1	> 9.8 mg/l (96 h; Brachydanio rerio)
EC50 other aquatic organisms 1	144 mg/l (Activated sludge)
LC50 fish 2	< 18.9 mg/l
Citronellal (106-23-0)	
LC50 fish 1	22 mg/l (96 h; Leuciscus idus)
EC50 Daphnia 1	10 mg/l (24 h; Daphnia magna)
EC50 Daphnia 2	8.7 mg/l (48 h; Daphnia magna)
dl-Citronellol (106-22-9)	
LC50 fish 1	> mg/l >10 <22,96 h; Leuciscus idus

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dl-Citronellol (106-22-9)	
EC50 Daphnia 1	17 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	2.4 mg/l (72 h; Algae)
d-Limonene (5989-27-5)	
LC50 fish 1	720 µg/l (96 h; Pimephales promelas; Lethal)
EC50 Daphnia 1	0.36 mg/l (48 h; Daphnia magna; GLP)
LC50 fish 2	702 µg/l (96 h; Pimephales promelas)
Threshold limit algae 1	150 mg/l (72 h; Desmodesmus subspicatus; GLP)
Threshold limit algae 2	2.62 mg/l (72 h; Desmodesmus subspicatus)

12.2. Persistence and degradability

CITRONELLA OIL (8000-29-1)	
Persistence and degradability	May cause long-term adverse effects in the environment.
Geraniol (106-24-1)	
Persistence and degradability	Readily biodegradable in water.
ThOD	2.9 g O ₂ /g substance
Citronellal (106-23-0)	
Persistence and degradability	Readily biodegradable in water.
Chemical oxygen demand (COD)	2.67 g O ₂ /g substance
ThOD	2.9 g O ₂ /g substance
dl-Citronellol (106-22-9)	
Persistence and degradability	Readily biodegradable in water. May cause long-term adverse effects in the environment.
Chemical oxygen demand (COD)	2.05 g O ₂ /g substance
ThOD	2.961 g O ₂ /g substance
Geranyl acetate (105-87-3)	
Persistence and degradability	May cause long-term adverse effects in the environment.
d-Limonene (5989-27-5)	
Persistence and degradability	May cause long-term adverse effects in the environment. Readily biodegradable in water. Adsorbs into the soil.
ThOD	3.29 g O ₂ /g substance
Farnesol (4602-84-0)	
Persistence and degradability	Not established.
Linalool (78-70-6)	
Persistence and degradability	Not established.
Nerol (106-25-2)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Geraniol (106-24-1)	
Bioaccumulative potential	Not established.
Citronellal (106-23-0)	
BCF other aquatic organisms 1	280 (QSAR)
Log Pow	3.53 - 3.62
Bioaccumulative potential	Low bioaccumulation potential.
dl-Citronellol (106-22-9)	
Log Pow	3.41 - 3.91
Geranyl acetate (105-87-3)	
Bioaccumulative potential	Not established.
d-Limonene (5989-27-5)	
BCF fish 1	864.8 - 1022 (Pisces; Fresh weight)
Log Pow	4.38 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 37 °C)
Bioaccumulative potential	Not established. Bioaccumulative potential.

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Farnesol (4602-84-0)	
Bioaccumulative potential	Not established.
Linalool (78-70-6)	
Bioaccumulative potential	Not established.
Nerol (106-25-2)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Additional information : Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

Transportation of Dangerous Goods

Passenger Carrying Road Vehicle or Passenger : III
Carrying Railway Vehicle Index

Transport by sea

UN-No. (IMDG) : 3082
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG) : III - substances presenting low danger
MFAG-No : 171

Air transport

UN-No. (IATA) : 3082
Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger
Civil Aeronautics Law : Miscellaneous dangerous substances & articles (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

SECTION 15: Regulatory information

15.1. US Federal regulations

CITRONELLA OIL (8000-29-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Geraniol (106-24-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Citronellal (106-23-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
dl-Citronellol (106-22-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

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Listed on the United States TSCA (Toxic Substances Control Act) inventory

d-Limonene (5989-27-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Farnesol (4602-84-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Linalool (78-70-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

METHYL ISOEUGENOL (93-16-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Nerol (106-25-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

Linalool (78-70-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Full text of H-statements:

H226	Flammable liquid and vapour.
H227	Combustible liquid
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

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Hazard Rating

Health	: 0 Minimal Hazard - No significant risk to health
Flammability	: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: B B - Safety glasses, Gloves

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