

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product Identifier**

Citriodiol®

Synonyms:

Eucalyptus citriodora oil, hydrated, cyclized

Oil of Lemon Eucalyptus

Oil of Lemon Eucalyptus, hydrated, cyclized

p-menthane-3,8-diol and related oil of lemon eucalyptus compounds

"a mixture of cis- and trans-p-menthane-3,8-diol/Citriodiol" -

PMD Rich Botanic Oil

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

This substance is an active ingredient to be used in insect repellent formulations.

1.3. Details of the supplier of the safety data sheet

Citrefine International Limited

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1.4. Emergency telephone number


Tel: +44 (0)113 238 7900 Mon-Fri 9am-5pm

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

EC Regulation 1272/2008
Hazard Class and Category: Eye Irrit. 2
Hazard Statement: H319

2.2 Label Elements

GHS Pictogram	
Signal Word	Warning
Hazard Statement	H319: Causes serious eye irritation
Precautionary Statement Prevention	Wash hands thoroughly after handling. (P264) Wear protective gloves/protective clothing/eye protection/face protection. (P280) Contains citronellal, citronellol, eucalyptol, linalool and limonene. May produce an allergic reaction (EUH208)
Precautionary Statement Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. (P305 +P351 + P338) If eye irritation persists: Get medical advice/attention. (P337 + P313)

2.3 Other Hazards

Please contact Citrefine regarding labelling requirements for skin sensitisers under EUH208 in mixtures containing Citriodiol®.

For full text of all codes see Section 16

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Ingredient	EINECS No.	CAS No.	Classification according to Regulation (EC) 1272/2008	Concentration
Eucalyptus citriodora oil, hydrated, cyclized (Citriodiol®)	-	1245629-80-4	Eye Irrit. 2 H319	100% (This substance is a UVCB)

4. FIRST AID MEASURES

4.1 Description of first aid measures

General	In case of accident or if you feel unwell, seek medical advice and show the label if possible.
Inhalation	Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Ingestion may cause nausea and vomiting. Seek medical attention if symptoms persist. Do not induce vomiting.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact	May irritate eyes. Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water or eye wash solution while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if irritation persists.

4.2 Most important symptoms and effects, both acute and delayed

Danger of serious eye irritation. Temporary skin irritation after direct contact on sensitive people.
No specific symptoms associated with exposure to this substance.

4.3 Indication of any immediate medical attention and special treatment needed

No specific symptoms associated with exposure to this substance

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry powder, foam, carbon dioxide

Unsuitable extinguishing media

Water Jet (Citriodiol® is insoluble in water)

5.2 Special hazards arising from the substance or mixture

As a mixture of organic compounds, combustion of Citriodiol® can produce oxides of carbon.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and a chemical protective suit. Fight fire from a distance and stay upwind. Do not allow extinguishing water to reach ground water or sewage system.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, protective equipment and emergency procedures

Use personal protective equipment if required.

6.2 Environmental Procedures

Do not allow product to enter drains or ground water.

6.3 Methods and material for containment and cleaning up

Contain; soak up with an inert, absorbent material and transfer to a suitably labelled container for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practices. Wash hands after use.

When producing a ready to use formulation, the product has to be warmed to 50 to 60 °C with mixing (as crystallisation will occur at room temperature). Ensure the product is fully homogenised and no crystals are visible before use.

7.2 Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well ventilated place.

7.3 Specific end uses

Citriodiol® is the active substance for use in the manufacture of insect repellents. It should be formulated into a ready to use product.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control Parameters

Contains no components with occupational exposure limit values.

8.2 Exposure Controls

Appropriate engineering controls

Provide adequate ventilation to minimise the risk of inhalation of vapours.

Eye/face protection

Use safety glasses or eye protection tested and approved under appropriate government standards, for example EN 166. If handling large amounts of molten material a face shield may be more suitable.

Respiratory Equipment

Under normal usage conditions respiratory protection will not be necessary. Protection may be required under exceptional circumstances, for example when excessive air contamination exists.

Hand Protection

Wear suitable protective gloves. Gloves selected should meet the standards set out in EN 374. Suitable material would be nitrile rubber.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: Viscous liquid containing white crystals Colour: Pale yellow/brown
b) Odour	Characteristic, citrus
c) Odour Threshold	No data available
d) pH (30% suspension in water)	typically 8.6
e) Melting point/freezing point	As a UVCB the provision of a single value or range of melting point for Eucalyptus citriodora oil, hydrated, cyclized is not

	appropriate. A temperature of 50°C-60°C is required to homogenise the product.
f) Initial boiling point and boiling range	267°C at 103630 Pa ²
g) Flash point	92°C
h) Evaporation rate	No data available
i) Flammability (solid,gas)	Flammability is low and Citriodiol® does not contain any pyrophoric constituents
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	0.0638 Pa at 25 °C ¹
l) Vapour density	No data available
m) Relative density	0.942 g/mL at 40 °C
n) Solubilities	Water: 670.7 mg/L at 25 °C ² n-hexane: >250 g/l, 20 °C ² acetone: >250 g/l, 20 °C ²
o) Partition coefficient: n-octanol/water	log P _{ow} : 1.9 ¹
p) Autoignition temperature	>200°C
q) Decomposition Temperature	>150°C
r) Viscosity	230cPs at ambient temperature
s) Explosive properties	None of the components of Citriodiol® contain functional groups that confer explosive properties.
t) Oxidising properties	None of the components of Citriodiol® have the ability to act as an oxidant or reductant.

9.2 Other information

No data available

¹ Data unavailable for Eucalyptus citriodora oil, hydrated, cyclized. The figure reported is for p-menthane-3,8-diol (PMD), the main component of Eucalyptus citriodora oil, hydrated, cyclized.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available. Product is not expected to react under normal storage conditions.

10.2 Chemical stability

Stable under ambient conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No known conditions to avoid

10.5 Incompatible materials

Strong oxidising agents

10.6 Hazardous decomposition products

No data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Endpoint	Value	Test method
a) Acute Toxicity	Rat LD ₅₀ oral: >2000 mg/kg	OECD 401
	Rat LD ₅₀ dermal: >2000 mg/kg	OECD 402
	LC ₅₀ inhalation estimated using the Oral LD ₅₀ = 10.4mg/l/4h	EPA/FIFRA Guideline 81-3
b) Skin corrosion/irritation	Mild irritant (not sufficient for classification)	OECD 404
c) Serious eye damage/irritation	Moderate irritant	OECD 405
d) Respiratory or skin sensitisation	Non sensitiser	OECD 406 (M and K method)
e) Germ cell mutagenicity	Not genotoxic	OECD 471, OECD 473, OECD 474
f) Carcinogenicity	No study conducted. No carcinogenic potential identified in components for which data are available.	
g) Reproductive Toxicity	No reproductive toxicity and no adverse systemic effects	OPPTS 870.3800
h) STOT-single exposure	This Substance does not meet the criteria for classification as for STOT single exposure	
i) STOT-repeated exposure	This Substance does not meet the criteria for classification as for STOT repeated exposure	

j) Aspiration hazard

This Substance does not meet the criteria for classification as an aspiration hazard

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Endpoint	Value	Test method
Toxicity to fish	<i>Danio rerio</i> EC ₅₀ : >35mg/L -96 hours	OECD 203
Toxicity to invertebrates	<i>Daphnia Magna</i> EC ₅₀ : >26mg/L -48 hours	OECD 202
Toxicity to algae	<i>Pseudokirchneriella</i> EC ₅₀ : >37mg/L -72 hours	OECD 201

12.2 Persistence and degradability

Citriodiol® is readily biodegradable. OECD 301F

12.3 Bioaccumulative potential

Bioconcentration/accumulation is unlikely as Citriodiol® is readily metabolised in the human body and by other higher organisms. Low estimated bioconcentration/accumulation tendencies predicted by QSAR for the major components of Citriodiol® are likely to be further offset by the amenability of those substances to biodegradation by microorganisms in the aquatic and terrestrial environments.

<u>Component</u>	<u>Bioconcentration factor (BCFWIN)</u>
p-Menthane-3,8-diol	11.47
Isopulegol	79.13
Citronellal	177.5
Citronellol	204.5

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Citriodiol® does not meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of in accordance with local authority regulations. Do not allow into drains or water courses.

Recommendation: Clarify the exact Waste Code with your disposer.

Suggested European Waste Code according to Commission Decision 2000/532/EC: 07 04 99 (wastes from the manufacture, formulation, supply and use of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides).

Packaging Suggested European Waste Codes according to 2000/532/EC:
Contaminated packaging: 15 01 10 (packaging containing residues of or contaminated by dangerous substances).

Cleaned packaging: 15 01 02 (plastic packaging). Cleaned, not contaminated packaging can be recycled. Recommended cleaning agent: water and soap.

14. TRANSPORT INFORMATION

14.1 UN Number

Not classified as dangerous for transport

14.2 UN proper shipping name

Not classified as dangerous for transport

14.3 Transport hazard class(es)

Not classified as dangerous for transport

14.4 Packing Group

Not classified as dangerous for transport

14.5 Environmental hazards

Not classified as dangerous for transport

14.6 Special precautions for user

Not classified as dangerous for transport

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

Not classified as dangerous for transport

15. REGULATORY INFORMATION

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

Citriodiol® is an active substance for insect repellent products (PT19) currently under review according to the criteria of the Biocidal Products Regulation (EU) 528/2012, as amended.

REACH (Regulation (EC) No 1907/2006, last amended by (EU) No 895/2014)

CLP (Regulation (EC) No 1272/2008, last amended by (EU) No 758/2013)

List of Wastes (2000/532/EC, last amended by 2001/573/EC).

15.2 Chemical safety assessment

No chemical safety assessment has been carried out for this substance by the supplier.

16. OTHER INFORMATION

Revision Date 16/11/2016

Rev. No. 10

Full text of Hazard Statements

H226 – Flammable liquid and vapour

Full text of Precautionary Statements

P264 – Wash hands thoroughly after handling.

P280 – Wear eye protection: Either safety goggles/glasses or a face shield.

P305 – IF IN EYES:

P313 – Get medical advice/attention.

P351 – Rinse cautiously with water for several minutes.

P337 – If eye irritation persists:

P338 – Remove Contact lenses, if present and easy to do. Continue rinsing.

EUH208 – Contains citronellal, citronellol, eucalyptol and limonene. May produce an allergic reaction.

Combined statements

P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+ P313 – If eye irritation persists get medical advice/attention

Section 3. Composition

Citriodiol® is a UVCB substance derived from an essential plant oil. Due to this natural origin, the composition of Citriodiol® is inherently varied. Unless stated otherwise, all

physical, ecological, toxicological, efficacy and safety testing required has been performed on final batches of Citriodiol® or technically equivalent material and not on its individual components. For this reason the classification of mixtures made with Citriodiol® should likewise be based on the classification of Citriodiol® as a whole, and not on its individual components. This approach is based on the Addendum to the TNsG on data requirements for active substances endorsed at the 23rd CA meeting, Nov 2006. Which states Extracts and oils of plant origin can be regarded as 100% purity as stated in ‘How to deal with extracts and oils of plant or animal origin?’

Sections 1&3. Product Identifier and CAS Number

Citriodiol®, previously defined as “a mixture of cis- and trans-p-menthane-3,8-diol/citriodiol” with the CAS No. 42822-86-6, has now been formally redefined as “Eucalyptus citriodora oil, hydrated, cyclized” with the CAS No. 1245629-80-4. This name change was triggered by ECHA and published in the Art. 95 list, date October 4, 2016 at p.105.

Changes

Section 2 – Additional information regarding skin sensitisers included in section 2.3

Section 3 – Changes to the naming and composition tables

Section 16 – Updated composition and full text of hazard codes.

Bibliography and sources of the data:

Reported endpoints refer to studies included as part of the dossier submitted under the criteria of Biocidal Products Directive (EU) 98/8/EC and Biocidal Products Regulation (EU) 528/2012.

This Safety Data Sheet has been produced in accordance with Regulation (EC) 895/2014 amending Regulation (EC) 1907/2006 REACH.

The information contained in this Safety Data Sheet is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This document is designed only as guidance for the safe use, storage and handling of this material. This information relates only to the specific material designated and may not be valid when the material is used in combination with any other materials