



SAFETY DATA SHEET

REVISION DATE JANUARY 2014

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

1.1. Product Identifier

Mosi-guard® *Natural* Roll-on

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

This is a ready to use insect repellent containing Citriondiol® as the active ingredient.

1.3. Details of the supplier of the safety data sheet

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UK

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1.4. Emergency telephone number


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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Directive 67/548/EEC	EC Regulation 1272/2008
Xi: Irritating to eyes	Hazard Classes and Categories: Eye Irrit. 2
R36: Irritating to eyes	Hazard Statements: H319

2.2 Label Elements

GHS Pictogram	
Signal Word	Warning
Hazard Statement	H319: Causes serious eye irritation
Precautionary Statement Prevention	P264, P280
Precautionary Statement Response	P305 + P351 + P338, P337+P313

2.3 Other Hazards

No data available

For full text of all codes see Section 16

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Components of Mosi-guard® *Natural* Roll-on:

Component	EC No.	CAS No.*	Classification According to Regulation (EC)1272/2008	Classification according to Directive 67/548EEC	Concentration in substance
Citriodiol®		1245629-80-4	Eye Irrit. 2: H319	R36: Irritating to eyes	30%
Isohexadecane	224-506-8	4390-04-9 60908-77-2	Acute Toxicity Category 4: H332 Aspiration Hazard Category 1: H304	R20: Harmful by inhalation R65 Harmful: may cause lung damage if swallowed.	10%

*For further details regarding the CAS number of Citriodiol® please see section 16

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	May cause discomfort if swallowed. Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if symptoms persist.

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

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, alcohol resistant foam, carbon dioxide

Unsuitable extinguishing media

Water Jet (Mosi-guard® *Natural* Roll-on is insoluble in water)

5.2 Special hazards arising from the substance or mixture

As a mixture of organic compounds, combustion of Mosi-guard® *Natural* Roll-on can produce oxides of carbon.

5.3 Advice for firefighters

Wear self-contained breathing apparatus and a chemical protective suit. Fight fire from a safe 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

Stop leak if possible without risk. Absorb with sand or other inert absorbent. Collect in containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

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.

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

Mosi-guard® *Natural* Roll-on is a ready to use insect repellent.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control Parameters

Contains no components with occupational exposure limits.

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 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: Glossy Emulsion Colour: White
b) Odour	Characteristic, citrus
c) Odour Threshold	No data available
d) pH	5-7
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid,gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	0.945-0.965 g/mL at 20°C
n) Solubilities	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	No data available
q) Decomposition Temperature	No data available
r) Viscosity	25900-79400 mm ² /s at 20°C
s) Explosive properties	None of the components of Mosi-guard® <i>Natural</i> roll-on contain functional groups that confer explosive properties.
t) Oxidising properties	None of the components of Mosi-guard® <i>Natural</i> roll-on have the ability to act as an oxidant or reductant.

9.2 Other information

No data available

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	Citriodiol® Rat LD ₅₀ oral: 2408 mg/kg Rat LD ₅₀ dermal: >2000 mg/kg Rat LC ₅₀ inhalation determined on 40% aerosol spray > 2.06 mg/L: equivalent to >0.83mg/ l Isohexadecane Rat LD ₅₀ oral: >36,600 mg/kg (literature) Rat LC ₅₀ inhalation: 1.73 mg/l 4h (literature) An acute toxicity estimate (ATE) of the inhalation toxicity has been calculated. Since the value of this ATE is > 5, the product is not classified with regards to inhalation toxicity.	OECD 401 OECD 402 EPA/FIFRA Guideline 81-3
b) Irritation	Citriodiol® Skin – Mild irritant (not sufficient for classification) Eyes – Moderate irritant Isohexadecane May cause skin irritation in susceptible persons (not sufficient for classification)	OECD 404 OECD 405
c) Corrosivity	No study conducted but no components are corrosive and material has a pH between 5-7	
d) Sensitisation	Citriodiol® Non sensitiser Isohexadecane No data available	OECD 406
e) Repeated dose toxicity	Citriodiol® Rat (dermal): NOAEL at 1000 mg/kg day in 28-day study. Isohexadecane No data available	OPPTS 870.3200 OECD 410
f) Carcinogenicity	No study conducted. No carcinogenic potential identified in components for which data are available.	
g) Mutagenicity	Citriodiol® Not genotoxic Isohexadecane No data available	OECD 471, OECD 473, OECD 474

h) Toxicity for reproduction	Citriodiol® No reproductive toxicity and no adverse systemic effects Isohexadecane No data available	OPPTS 870.3800
i) Aspiration Hazard	Isohexadecane is classified as an aspiration hazard due to being a low viscosity alkane. The viscosity of Mosi-guard® <i>Natural</i> roll-on means that classification for this hazard is not appropriate.	

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Endpoint	Value	Test method
Toxicity to fish Toxicity to invertebrates Toxicity to algae	Citriodiol® <i>Danio rerio</i> EC ₅₀ : >35mg/L –96 hours Isohexadecane <i>Danio rerio</i> LC ₅₀ :>100mg/L (literature) Citriodiol® <i>Daphnia Magna</i> EC ₅₀ : >26mg/L –48 hours Citriodiol® <i>Pseudokirchneriella</i> EC ₅₀ : >37mg/L –72 hours	OECD 203 OECD 202 OECD 201

12.2 Persistence and degradability

Citriodiol® is readily biodegradable Isohexadecane is inherently biodegradable (literature)	OECD 301F
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12.3 Bioaccumulative potential

Bioaccumulation is unlikely as Citriodiol® is readily metabolised in the human body, by microorganisms and in the soil. High BCF values for some components are offset by either the small amounts present or low water solubility.

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

Isohexadecane is inherently biodegradable and bioaccumulation is unlikely (literature)

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.
Isohexadecane – no data available

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of in accordance with local authority regulations

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 European Biocidal Products Directive 98/8/EC; USEPA Reg. No. 84878-3; PMRA Reg. No. 30821.

15.2 Chemical safety assessment

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

16. OTHER INFORMATION

Revision Date 20/01/2014

Rev. No. 3

Full text of Hazard Statements

H304 – May be fatal if swallowed and enters airways

H319 – Causes serious eye irritation

H332 – Harmful if inhaled

Full text of Precautionary Statements

P264 – Wash hands thoroughly after handling

P280 – Wear protective gloves/protective clothing/eye protection/face protection

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.

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

CAS Number

42822-86-6 is the CAS No. for the main component in Citriodiol®, p-menthane-3,8-diol (PMD). CAS No. 1245629-80-4 was recently assigned by the ACS for Citriodiol® in its entirety, but has not yet been fully adopted due to the identification and notification of Citriodiol® under 42822-86-6 for purposes of Directive 98/8/EC of the European Parliament. The PMRA in Canada recognize 1245629-80-4 as the CAS No. for Citriodiol® as does ECHA for purposes of REACH .

Changes

Section 1 - Product Identifier volume removed

Section 5 – Citriodiol® replaced with Mosi-guard® *Natural* Roll-on

Section 16 - Amended regulations

Bibliography and sources of the data:

For Citriodiol® reported endpoints refer to studies included as part of the dossier submitted under the criteria of Directive 98/8/EC.

Data for Isohexadecane sourced from raw material suppliers SDS.

This Safety Data Sheet has been produced in accordance with Regulation (EC) 1272/2008 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.