

Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: 68280_LIME LEAVES
Product name: Fragrance diffuser with wicks - Lime Leaves
UFI: 4NT3-E0JE-T00E-U1K8

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

Intended use: Fragrance diffuser with wicks Purity line Lime Leaves perfume

1.3. Details of the supplier of the safety data sheet

Name: STAR S.P.A. CON SOCIO UNICO
Full address: Via Ungaretti 6
District and Country: 16157 Genova (Ge)
Italia
Tel. +39 0108903600
Fax +39 0106129727

e-mail address of the competent person
responsible for the Safety Data Sheet

ufficiotecnico@starspa.net

1.4. Emergency telephone number

For urgent inquiries refer to

+39 010 8903640 (Monday - Friday, 8.30-13.00, 14.30-18.00)
Poison Centre, Azienda Ospedaliera Universitaria Riuniti, Viale Luigi Pinto 1, Foggia;
Tel.: + 39800183459
Poison Centre, Azienda Ospedaliera Universitaria Careggi, U.O. Tossicologia medica,
Via Largo Brambilla 3, Florence; Tel.: + 39 055-7947819
Poison Control Centre, National Centre for Toxicological Information, IRCCS
Fondazione Salvatore Maugeri Work and Rehabilitation Clinic, Via Salvatore Maugeri
10, Pavia; Tel.: + 390382-24444
Poison Centre, Azienda Ospedaliera "Antonio Cardarelli", III Service of Anaesthesia
and
reanimation, Via Antonio Cardarelli 9, Naples; Tel.: + 39 081-5453333
Poison Centre, Niguarda Ca' Grande Hospital Authority, Piazza Ospedale Maggiore 3,
Milan; Tel.: + 39 02-66101029
Poison Centre, Azienda ospedaliera "Papa Giovanni XXIII", clinical toxicology,
Department of clinical pharmacy and pharmacology, Piazza OMS 1, Bergamo; Tel.: + 39
800883300
Poison Centre, "Umberto I" Polyclinic, PRGM emergency toxicology, Viale del
Policlinico 155, Rome; Tel.: + 39 06-49978000
Poison Centre, Bambino Gesù Paediatric Hospital, Emergency and Acceptance
Department DEA, Piazza Sant'Onofrio 4, Rome; Tel.: + 39 06 68593726
Poison Centre, Policlinico "Agostino Gemelli", Clinical Toxicology Service, Largo
Agostino Gemelli 8, Rome; Tel.: + 39 06-3054343
Poison Centre of the Azienda Ospedaliera Universitaria Integrata (AOUI) di Verona sede
di Borgo Trento, Piazzale Aristide Stefani, 1 - 37126 Verona. Tel.: + 39 800011858

SECTION 2. Hazards identification

68280_LIME LEAVES - Fragrance diffuser with wicks

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 2	H225	Highly flammable liquid and vapour.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P302+P352	IN CASE OF CONTACT WITH SKIN: Wash thoroughly with soap and 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.
P501	Dispose of the product/container according to local regulations in force

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Contains:

- slender cinnamon
- citral
- d-limonene
- lemongrass
- linalyl acetate
- linalool
- lemongrass oil
- pin-2(3)-ene
- geraniol
- citronellol

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.

SECTION 3. Composition/information on ingredients**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
Ethanol		
INDEX 603-002-00-5	$74 \leq x < 78$	Flam. Liq. 2 H225, Eye Irrit. 2 H319
EC 200-578-6		
CAS 64-17-5		
REACH Reg. 01-2119457610-43-xxxx		
citral		
INDEX 605-019-00-3	$2,5 \leq x < 3$	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1B H317
EC 226-394-6		
CAS 5392-40-5		
REACH Reg. 01-2119462829-23-xxxx		
slender cinnamon		
INDEX -	$1 \leq x < 1,5$	Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411
EC 639-566-4		
CAS 165184-98-5		
REACH Reg. 01-2119533092-50-xxxx		
d-limonene		
INDEX 601-029-00-7	$1 \leq x < 1,5$	Flam. Liq. 3 H226, Asp. Tox. 1 H304, Skin Irrit. 2 H315, Skin Sens. 1B H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 3 H412
EC 227-813-5		
CAS 5989-27-5		

68280_LIME LEAVES - Fragrance diffuser with wicks

REACH Reg. 01-2119529223-47-

xxxx

citronellol

INDEX - 0,8 ≤ x < 0,9 Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1B H317

EC 203-375-0

CAS 106-22-9

REACH Reg. 01-2119453995-23-

0000

geraniol

INDEX - 0,5 ≤ x < 0,6 Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317

EC 203-377-1

CAS 106-24-1

REACH Reg. 01-2119552430-49-

0000

pin-2(3)-eneINDEX - 0,25 ≤ x < 0,3 Flam. Liq. 3 H226, Acute Tox. 4 H302, Asp. Tox. 1 H304, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1
STA Oral: 500 mg/kg

EC 201-291-9

CAS 80-56-8

REACH Reg. 01-2119519223-49-

0002

linalool

INDEX 603-235-00-2 0,1 ≤ x < 0,15 Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1B H317

EC 201-134-4

CAS 78-70-6

REACH Reg. 01-2119474016-42-

0000

lemongrass

INDEX - 0,1 ≤ x < 0,15 Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1B H317

EC 203-376-6

CAS 106-23-0

REACH Reg. 01-2119474900-37-

xxxx

lemongrass oil

INDEX - 0,1 ≤ x < 0,15 Asp. Tox. 1 H304, Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411

EC 943-552-6

CAS 91844-92-7

linalyl acetate

INDEX - 0,1 ≤ x < 0,15 Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1B H317

EC 204-116-4

CAS 115-95-7

REACH Reg. 01-2119454789-19-

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The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures**4.1. Description of first aid measures**

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists,

seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

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Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Information not available

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	not available	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	> 35 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	< 23 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not available	
Kinematic viscosity	not available	
Solubility	not available	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	not available	
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Metabolism, toxicokinetics, mechanism of action and other information

Ethanol

The bioaccumulus potential cannot be evaluated on the basis of the results of the study

This study indicates that about 20-30% of the ananol by inhalation following a low-level exposure is exhaled in the alveolar air, which indicates that about 70-80% of ethanol for inhalation is absorbed. The low -level inhalation of ethanol has determined measurable quantities of acetaldehyde in the alveolar air. For all the exposure concentrations, the results show that the concentration of ethanol and acetaldehyde in the expired alveolar air has increased proportionally and has reached a stable state after at least 2 hours of continuous exposure. Overall, there was a significant correlation between exposure to the ananol and the concentration of ethanol and acetaldehyde in the alveolar air. The relations between acetaldehyde and ethanol in the alveolar air

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after 4 hours of exposure to ethanol at 26, 102 or 991 ppm were 0.005, 0.008 and 0.006 respectively. Test performed on humans

A study was designed to determine the concentration of ethanol and its acetaldehyde metabolite in the alveolar air of five volunteers exposed (at rest) at low concentrations of short-term ethanol steam. The volunteers were exhibited for 6 hours, on three different occasions, at about 26, 102 or 991 ppm of ethanol and samples of alveolar air exhausted for analysis were taken. The low-level inhalation of ethanol has determined measurable quantities of acetaldehyde in the alveolar air. The study indicated that about 70 - 80% inhaled ethanol is absorbed.

Using an in vitro method to evaluate the penetration of the ananol through the removed guinea pig, at full thickness, less than 1% of the total dose penetrated the "discovered" skin for a period of 19 hours. The increase in the volume of the dose in the system does not seem to involve an increase in penetration. The penetration has been significantly improved by "occlusion".

A test range of test volumes was used (25 -500 µl)

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

Ethanol

LD50 (Dermal):	17100 mg/kg Specie: coniglio
LD50 (Oral):	10470 mg/kg Specie Ratto at the concentration of 95%
LC50 (Inhalation vapours):	124,7 mg/l/4h Specie: topo at the concentration of 95%

citral

LD50 (Dermal):	> 2000 mg/kg Coniglio
LD50 (Oral):	6800 mg/kg Ratto

d-limonene

LD50 (Dermal):	> 5000 mg/kg Coniglio
LD50 (Oral):	4400 mg/kg Ratto

citronellol

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LD50 (Dermal): 2650 mg/kg Coniglio
LD50 (Oral): 3450 mg/kg Ratto

geraniol

LD50 (Dermal): > 5000 mg/kg Coniglio
LD50 (Oral): 3600 mg/kg Ratto

pin-2(3)-ene

LD50 (Dermal): 5005 mg/kg Coniglio
LD50 (Oral): 2100 mg/kg Ratto

linalyl acetate

LD50 (Dermal): > 5000 mg/kg Coniglio
LD50 (Oral): > 9000 mg/kg Topo

lemongrass oil

LD50 (Dermal): > 2000 mg/kg Coniglio
LD50 (Oral): > 5000 mg/kg Ratto

lemongrass

LD50 (Dermal): 2500 mg/kg Coniglio

linalool

LD50 (Oral): 2790 mg/kg Ratto
LC50 (Inhalation vapours): > 3,2 mg/l/1h30 Topo

d-limonene

Test: LD50 - VIA: Oral - Species: Mouse = 5600 mg/kg

linalyl acetate

Test: LC50 - Via: Inhalation - Species: Mouse - Duration: 1.5h

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

Ethanol

Test performed on rabbit, no erythema/edema observed. Not irritating.

geraniol

Corrosive for the skin - Via: skin - species: positive rabbit.

linalyl acetate

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Test: Irritant for the skin - Via: skin - Species: negative human beings

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

Ethanol

The data obtained based on the guidelines of the GLP eye irritation study carried out on a rabbit, ascertain that ethanol causes irritation to the eyes. All symptoms are reversible in 14 days. The response was not severe enough to trigger the classification according to the criteria of Directive 67/548, but it was sufficient compared to the corneal and conjunctivals to trigger the classification as an irritating for the reversible eyes (category 2) pursuant to the GHS regulation of EU.

citronellol

Irritating for positive eyes.

geraniol

Irritating for the eyes - via: n.a. - Species: positive rabbit.

linalyl acetate

Test: Eyes irritating - Species: negative rabbit

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

linalyl acetate

Test: irritating for the respiratory tract - species: negative human beings

Respiratory sensitization**Ethanol**

It is not bronchoconstrictor. Test performed on the chorey of India.

Skin sensitization**Ethanol**

Not sensitizing. Test performed on the chorey of India.

citronellol

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Sharing positive skin.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

Ethanol
Negative genetic toxicity in vitro. Tests carried out on the rat.
Uncertain results in vivo. Tests carried out on mouse.

geraniol
Mutagenesis - Ames Test - Via: In Vitro Test - Species: negative generic bacteria.

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

Ethanol
Noaec:> = 1.3 mg/l Air
Tests carried out on the rat. Duration 24 months.

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Ethanol
Teramogenesis:
Noael: 15 Other: % in drinking water.
Test carried out on mouse.
Reproduction:
Noael: <1 000 mg/kg bw/day (nominal)

Adverse effects on development of the offspring

Ethanol
Noael:> = 20 000 ppm

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Ethanol

Nervous system:

Noaec: 19 000 mg/m³

Test performed on rat.

Immune system:

Noaec: 40 000 mg/m³

Test carried out on rat.

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Ethanol

Oral:

Loael: 3 200 mg/kg BW/day (current dose received)

Noael: 1 730 mg/kg BW/day (current dose received)

Tests carried out on the rat.

Inhalation:

Noaec: 2.65 mg/l Air

Loae: 13.3 mg/L Air

Tests carried out on the rat.

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity

Ethanol

On fish:

LC0: 7.96 g/l (96 -hour test duration). Test carried out on Pimphaales Promolas.

On crustaceans:

LC50: 5 012 mg/l (duration 48h). Test performed on: Ceriodaphnea Dubia.

On invertebrates:

LC50: 454 mg/l (duration 9 days). Test performed on Daphnia Magna.

On algae and cyanobacteria:

EC100: 14200 mg/l (duration 3 days)

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Test made on *Chlorella Vulgaris*.

On microorganisms:

IC50:> 1000 mg/l. Test duration 3 days. Test carried out on active sludge.

On aquatic organisms:

Noec:> 79 mg/l (48h test duration) test carried out on time frog.

On soil:

LC50 = 0.1 - 1mg/cm2 test carried out on *Eisenia Foetida*.

On earth arthropods:

EC0: 0.02% (duration 10 days). Test carried out on Diptera

On terrestrial plants:

Test carried out on: ALLIUM CEPA (duration 6 days).

EC50 = 11800mg/L

EC10 = 790mg/L

d-limonene

EC50 - Species: fish = 0.688 mg/l - Duration H: 96

geraniol

EC50 - Species: microorganisms (*pseudomonas putida*) = 70 mg \par l duration h: 0.5

citronellol

LC50 - for Fish	14,66 mg/l/96h <i>Leuciscus idus</i>
EC50 - for Crustacea	17,48 mg/l/48h <i>Daphnia magna</i>
EC50 - for Algae / Aquatic Plants	2,4 mg/l/72h <i>Scenedesmus sp.</i>

lemongrass

LC50 - for Fish	22 mg/l/96h <i>Leuciscus Idus</i>
EC50 - for Crustacea	8,7 mg/l/48h <i>Daphnia Magna</i>
EC50 - for Algae / Aquatic Plants	6,74 mg/l/72h
EC10 for Algae / Aquatic Plants	1,26 mg/l/72h
Chronic NOEC for Fish	10 mg/l 96 ore, <i>Leuciscus Idus</i>

geraniol

LC50 - for Fish	22 mg/l/96h <i>Danio rerio</i>
EC50 - for Crustacea	10,8 mg/l/48h <i>Daphnia magna</i>
EC50 - for Algae / Aquatic Plants	13,1 mg/l/72h <i>Desmodesmus subspicatus</i>
EC10 for Algae / Aquatic Plants	3,77 mg/l/72h <i>Desmodesmus subspicatus</i>
Chronic NOEC for Fish	10 mg/l <i>Danio rerio</i>
Chronic NOEC for Algae / Aquatic Plants	1 mg/l <i>Desmodesmus subspicatus</i> 72h

linalyl acetate

LC50 - for Fish	11 mg/l/96h <i>Cyprinus carpio</i>
EC50 - for Crustacea	59 mg/l/48h <i>Daphnia magna</i>
Chronic NOEC for Crustacea	25 mg/l <i>Daphnia magna</i> 48h

citral

LC50 - for Fish	6,78 mg/l/96h <i>Leuciscus idus</i> (a 10)
EC50 - for Crustacea	6,8 mg/l/48h <i>Daphnia magna</i>
EC50 - for Algae / Aquatic Plants	103,8 mg/l/72h
EC10 for Algae / Aquatic Plants	3 mg/l/72h
Chronic NOEC for Fish	4,6 mg/l <i>Leuciscus Idus</i>

d-limonene

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LC50 - for Fish	0,72 mg/l/96h Danio rerio
EC50 - for Algae / Aquatic Plants	0,214 mg/l/72h Pseudokirchneriella subcapitata
Chronic NOEC for Fish	0,37 mg/l/8d Danio rerio

slender cinnamon

LC50 - for Fish	1,7 mg/l/96h Pimephales promelas
EC50 - for Crustacea	> 0,36 mg/l/48h Daphnia magna
Chronic NOEC for Fish	0,93 mg/l Pimephales promelas 96h
Chronic NOEC for Crustacea	0,063 mg/l Daphnia magna

linalool

LC50 - for Fish	27,8 mg/l/96h Salmo gairdneri
EC50 - for Crustacea	59 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	88,3 mg/l/72h Desmodesmus subspicatus 96h
EC10 for Algae / Aquatic Plants	38,4 mg/l/96h Desmodesmus subspicatus
Chronic NOEC for Fish	< 3,5 mg/l Salmo gairdneri 96h
Chronic NOEC for Crustacea	25 mg/l Daphnia magna 48h

pin-2(3)-ene

LC50 - for Fish	0,28 mg/l/96h Pimephales promelas
EC50 - for Crustacea	0,475 mg/l/48h Daphnia magna
Chronic NOEC for Algae / Aquatic Plants	0,131 mg/l 48 h OECD guideline 201

lemongrass oil

EC50 - for Crustacea	4,2 mg/l/48h Daphnia magna EL50
EC50 - for Algae / Aquatic Plants	13 mg/l/72h Pseudokirchneriella subcapitata EL50
EC10 for Algae / Aquatic Plants	11 mg/l/72h Pseudokirchneriella subcapitata EL10
Chronic NOEC for Crustacea	3,2 mg/l Daphnia magna NOELR 48h
Chronic NOEC for Algae / Aquatic Plants	12,5 mg/l Pseudokirchneriella subcapitata NOELR 72h

Ethanol

LC50 - for Fish	14200 mg/l/96h Pimephales Promelas.
EC50 - for Algae / Aquatic Plants	4432 mg/l/72h Durata 7 giorni. Test effettuato su Lemna Gibba.
EC10 for Algae / Aquatic Plants	86 mg/l/10d Durata 4 giorni. Test effettuato su Chlorella Vulgaris.
Chronic NOEC for Fish	250 mg/l Durata test 120 h. Specie Danio Rerio.
Chronic NOEC for Crustacea	96 mg/l Test eseguito su Daphnia Magna.
Chronic NOEC for Algae / Aquatic Plants	280 mg/l Test effettuato su Lemna Gibba. Durata test 7 giorni.

12.2. Persistence and degradability

citronellol

Rapidly degradable
90% in 28 giorni (Consumo O2)
lemongrass

Rapidly degradable
83 % in 28 giorni
geraniol

Rapidly degradable

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90% in 3 giorni
linalyl acetate

Rapidly degradable
70% in 28 giorni
citral

Rapidly degradable
> 90% in 28 giorni
d-limonene

Solubility in water 5,69 mg/l

Rapidly degradable
80% (consumo di ossigeno) a 28 giorni
slender cinnamon

Rapidly degradable
97% in 28 giorni
linalool

Rapidly degradable
64.2% (consumo di ossigeno) a 28 giorni
pin-2(3)-ene

Rapidly degradable
68% in 28 giorni (Consumo O2)
Ethanol

Rapidly degradable
84% (consumo di ossigeno) a 20 giorni

12.3. Bioaccumulative potential

lemongrass

BCF 113,6 l/kg

linalyl acetate

BCF 174 l/kg

citral

BCF 89,72

pin-2(3)-ene

BCF 3,091 -

Ethanol

BCF 1 - Muscoli e tessuti.

12.4. Mobility in soil

geraniol

Partition coefficient: soil/water 1,85

citral

Partition coefficient: soil/water 2,169

d-limonene

Partition coefficient: soil/water 6324 l/kg

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pin-2(3)-ene

Partition coefficient: soil/water 7,421 l/kg

Ethanol

Partition coefficient: soil/water 10

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information**14.1. UN number or ID number**

ADR / RID, IMDG, IATA: 1993

14.2. UN proper shipping name

ADR / RID: FLAMMABLE LIQUID, N.O.S. (Ethanol; d-limonene)

IMDG: FLAMMABLE LIQUID, N.O.S. (Ethanol; d-limonene)

IATA: FLAMMABLE LIQUID, N.O.S. (Ethanol; d-limonene)

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3



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IMDG: Class: 3 Label: 3



IATA: Class: 3 Label: 3

**14.4. Packing group**

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: NO

IMDG: NO

IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 33	Limited Quantities: 1 L	Tunnel restriction code: (D/E)
	Special provision: 274, 601, 640D		
IMDG:	EMS: F-E, S-E	Limited Quantities: 1 L	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 364
	Passengers:	Maximum quantity: 5 L	Packaging instructions: 353
	Special provision:	A3	

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Seveso Category - Directive 2012/18/EU: P5c

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point 3 - 40

Contained substance

Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage \geq than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

Ethanol

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1B	Skin sensitization, category 1B
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1

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Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic 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.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament

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11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
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21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

02 / 03 / 09 / 11 / 12 / 14 / 15 / 16.