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PRODUCT : VETIVER ZIZANOIDES OIL
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P273 Avoid release to the environment.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P501 Dispose of contents/container in accordance with local/regional/ national/international regulations.

2.3 Other hazards

- Results of PBT and vPvB assessment
 - PBT:
Not applicable.
 - vPvB:
Not applicable.
- Determination of endocrine-disrupting properties
Substance is not listed.

SECTION 03: Composition/information on ingredients
3.1 Substances

CAS No.	Description	%
8016-96-4	Chrysopogon zizanioides (L.) Roberty (Syn) Vetiveria zizanioides (L.) Nash	
• Identification number(s)		
• EC number:	282-490-8	
• Dangerous components:		
CAS Number		%
15764-04-2	alpha-Vetivone EC number: 239-855-1 ⚠ Skin Sens. 1B - H317	5,001-10,00
97-54-1	isoeugenol EC number: 202-590-7 ⚠ Acute Tox. 4 - H302, Acute Tox. 4 - H312, Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Skin Sens. 1A - H317; Skin Sens. 1A; H317: C >= 0,01 %	0,101-1,00
469-61-4	alpha-Cedrene EC number: 207-418-4 ⚠ Asp. Tox. 1 - H304; ⚡ Aquatic Acute 1 - H400 (M=10), Aquatic Chronic 1 - H410 (M=10)	0,101-1,00

SECTION 04: First aid measures
4.1 Description of first aid measures

- General information:
Seek immediate medical advice.
- After inhalation:
Supply fresh air and to be sure call for a doctor.
- After skin contact:
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
Immediately rinse with water.
- After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
Seek immediate medical advice.
- Information for doctor:

4.2 Most important symptoms and effects, both acute and delayed
 No further relevant information available.

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4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 05: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing agents:
CO₂, sand, extinguishing powder. Do not use water.
Use fire extinguishing methods suitable to surrounding conditions.
- For safety reasons unsuitable extinguishing agents:
Water with full jet

5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire.**5.3 Advice for firefighters**

- Protective equipment:
Do not inhale explosion gases or combustion gases.
- Additional information
Cool endangered receptacles with water spray.

SECTION 06: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources.

6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 07: Handling and storage**7.1 Precautions for safe handling**

Keep receptacles tightly sealed.

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Handle with care. Avoid jolting, friction and impact.

- Information about fire - and explosion protection:

- Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

- Requirements to be met by storerooms and receptacles:

- Requirements to be met by storerooms and receptacles:
Store only in the original receptacle.

- Requirements to be met by storerooms and receptacles:
Prevent any seepage into the ground.

- Requirements to be met by storerooms and receptacles:
Use only receptacles specifically permitted for this substance/ product.

- Information about storage in one common storage facility:

- Information about storage in one common storage facility:
Not required.

- Further information about storage conditions:

- Further information about storage conditions:
Keep container tightly sealed.

- Further information about storage conditions:
Protect from heat and direct sunlight.

- Further information about storage conditions:
Store receptacle in a well ventilated area.

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7.3 Specific end use(s)
 No further relevant information available.

SECTION 08: Exposure controls/personal protection**8.1 Control parameters**

- Ingredients with limit values that require monitoring at the workplace:
Not required.
- Additional information:
The lists valid during the making were used as basis.

8.2 Exposure controls

- Individual protection measures, such as personal protective equipment
- General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.
 Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes.

- Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation.

Filter P3

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye/face protection

* Safety glasses

- Body protection:

* Impervious protective clothing

* Boots

SECTION 09: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information**

Physical state	Fluid
Colour:	orange-brown
Odour:	woody
Odour threshold:	Not determined.
Melting point/freezing point:	< -20,0 °C
Boiling point or initial boiling point and boiling range	276,0 °C
Flammability	Not determined.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	119,0 °C NFT 60-103 CC
Decomposition temperature:	Not determined.

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pH	Not determined.	
Viscosity:		
Kinematic viscosity	Not determined.	
Dynamic:	Not determined.	
Solubility		
water:	Not determined.	
Partition coefficient n-octanol/water (log value)	Not determined.	
Vapour pressure:	at 20,00 °C	16,7300 mbar
Density and/or relative density		
Density:	Not determined.	
Relative density	1,0000 1,0200 D20/20	
Vapour density	Not determined.	
9.2 Other information	No further relevant information available.	
Appearance:		
Form:	fluid	
Important information on protection of health and environment, and on safety.		
Auto-ignition temperature:	Not determined.	
Explosive properties:	Not determined.	
Solvent content:		
Solids content:	0,00 %	
Change in condition		
Evaporation rate	Not determined.	
Information with regard to physical hazard classes		
Explosives	not applicable	
Flammable gases	not applicable	
Aerosols	not applicable	
Oxidising gases	not applicable	
Gases under pressure	not applicable	
Flammable liquids	not applicable	
Flammable solids	not applicable	
Self-reactive substances and mixtures	not applicable	
Pyrophoric liquids	not applicable	
Pyrophoric solids	not applicable	
Self-heating substances and mixtures	not applicable	
Substances and mixtures, which emit flammable gases in contact with water	not applicable	
Oxidising liquids	not applicable	
Oxidising solids	not applicable	
Organic peroxides	not applicable	
Corrosive to metals	not applicable	
Desensitised explosives	not applicable	

SECTION 10: Stability and reactivity**10.1 Reactivity**

No further relevant information available.

10.2 Chemical stability**10.3 Possibility of hazardous reactions**

No dangerous reactions known.

10.4 Conditions to avoid*(continued on page 6)*

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No further relevant information available.

10.5 Incompatible materials:

No further relevant information available.

10.6 Hazardous decomposition products:

Not determined.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

- Acute toxicity
- LD/LC50 values relevant for classification:

ISO LD/LC

8016-96-4 Chrysopogon zizanioides (L.) Roberty (Syn**Vetiveria zizanioides (L.) Nash)**Oral, LD50: >5000 mg/kg (rat) (OECD 401)
Dermal, LD50: >5000 mg/kg (Rabbit) (OECD 402)**97-54-1 isoeugenol**

Oral, LD50: 1560 mg/kg (rat)

- Primary irritant effect:
- Skin corrosion/irritation
Irritant to skin and mucous membranes.
Causes skin irritation.
- Serious eye damage/irritation
Irritating effect.
Causes serious eye irritation.
- Respiratory or skin sensitisation
Sensitization possible through skin contact.
- Germ cell mutagenicity

8016-96-4 Chrysopogon zizanioides (L.) Roberty (Syn**Vetiveria zizanioides (L.) Nash)**

OECD 471 AMES: NEGATIVE (in vitro) (2010, REACH file)

- Carcinogenicity
Not determined.
- Reproductive toxicity
Not determined.
- STOT-single exposure
Not determined.
- STOT-repeated exposure
Not determined.
- Aspiration hazard
Not determined.
- Subacute to chronic toxicity:
Not determined.
- 11.2 Information on other hazards
- Endocrine disrupting properties
Substance is not listed.

SECTION 12: Ecological information**12.1 Toxicity**

- Aquatic toxicity:

8016-96-4 Chrysopogon zizanioides (L.) Roberty (Syn**Vetiveria zizanioides (L.) Nash)**CE50/48h: 0,95 mg/l (daphnia) (OECD 202, 2004)
ErC50(0-48h): 9,1 mg/l (algae) (2010, REACH file)**469-61-4 alpha-Cedrene**

LD50: 0,099 mg/l (daphnia)

12.2 Persistence and degradability**8016-96-4 Chrysopogon zizanioides (L.) Roberty (Syn****Vetiveria zizanioides (L.) Nash)***(continued on page 7)*

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OECD 301: 41,8 % (in vitro) (310 28 days, 2010)
Not easily biodegradable

- Behaviour in environmental systems:
Not determined.

12.3 Bioaccumulative potential
No further relevant information available.

12.4 Mobility in soil
No further relevant information available.

12.5 Results of PBT and vPvB assessment

- PBT:
Not applicable.
- vPvB:
Not applicable.

12.6 Endocrine disrupting properties
The product does not contain substances with endocrine disrupting properties.

12.6 Other adverse effects

No further relevant information available.

- Ecotoxicological effects:
Not determined.
- Remark:
Toxic for fish
- Additional ecological information:
- General notes:
Toxic for aquatic organisms
The material is harmful to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Recommendation
Must be specially treated adhering to official regulations.
- Uncleaned packaging:
- Recommendation:
Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN number or ID number

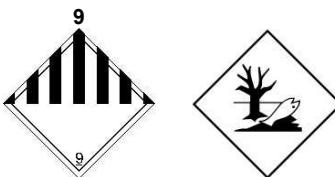
- **ADR** UN3082
- **IMDG** UN3082
- **IATA** UN3082

14.2 UN proper shipping name

- **ADR** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(VETIVER ZIZANOIDES ESSENCE)
- **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (VETIVER ZIZANOIDES ESSENCE)
- **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (VETIVER ZIZANOIDES ESSENCE)

14.3 Transport hazard class(es)

- **ADR**
- **Class** 9 (M6) Miscellaneous dangerous substances and articles.
- **Label**

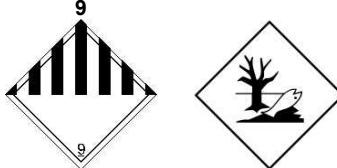
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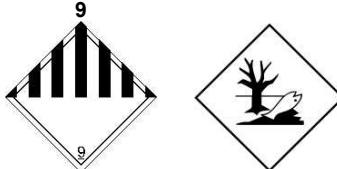
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- **IMDG**
- **Class** 9 Miscellaneous dangerous substances and articles.
- **Label**



- **IATA**
- **Class** 9 Miscellaneous dangerous substances and articles.
- **Label**


14.4 Packing group

- **ADR** III
- **IMDG** III
- **IATA** III

14.5 Environmental hazards:

- **Marine pollutant:** Yes

14.6 Special precautions for user

Warning: Miscellaneous dangerous substances and articles.

- **Danger code (Kemler):** 90
- **EMS Number:** F-A,S-F

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

* • Transport/Additional information:

- **ADR**
- **Excepted quantities (EQ):** E1
- **Limited quantities (LQ)** 5L
- **Transport category** 3
- **Tunnel restriction code** E
- **IMDG**
- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** E1
- **UN "Model Regulation":**
 UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (VETIVER ZIZANOIDES ESSENCE), 9, III

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

- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment - Annex II
 Substance is not listed.
- REGULATION (EU) 2019/1148
- Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
 Substance is not listed.
- Annex II - REPORTABLE EXPLOSIVES PRECURSORS
 Substance is not listed.
- Regulation (EC) No 273/2004 on drug precursors

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Substance is not listed.

- Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

Substance is not listed.

- National regulations:
- Technical instructions (air):
- Class Share in %
I 0,08
- Waterhazard class:
Water hazard class 2 (Self-assessment): hazardous for water.

15.2 Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

The information in this safety data sheet is based on the state of our knowledge at the date indicated. The information in this sheet must be regarded as a description of the safety requirements for the product, they are not to be considered a warranty or quality specification and have no contractual value on properties and application areas thereof. The information contained in this safety data sheet relate to the specific material designated and may not be valid with respect to the product associated with another product or process, unless it is specified in the text of this document.

The required information complies with EU regulations in force. It does not exempt the user from knowing and applying all the national regulations in force.

- Relevant phrases
 - H302 Harmful if swallowed.
 - H304 May be fatal if swallowed and enters airways.
 - H312 Harmful in contact with skin.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H400 Very toxic to aquatic life.
 - H410 Very toxic to aquatic life with long lasting effects.
- Training hints
 - Minimum training in occupational risk prevention is recommended for personnel who will handle this product, in the purpose of facilitating the understanding and interpretation of this form of safety data in the same way as the labeling of the product.
- Date of previous version:
* 23.12.2022
- Version number of previous version:
* 1.00
- Abbreviations and acronyms:
 - IFRA: International Fragrance Association
 - IOFI: International Organization of the Flavor Industry
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - ICAO: International Civil Aviation Organisation
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
- Sources
 - IFRA/IOFI Labelling Manual, REACH registration dossier, supplier information
- * Data compared to the previous version altered.