

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date: 27.09.2023

Version number: 14.1

Revision date: 27.09.2023

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

1.1 Product identifier

- Trade name: **DIPENTENE 10**
- UFI (Unique Formula Identifier): QH13-307A-U005-GD62

DIPENTENE

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

Relevant identified uses: production and distribution of the product, intermediate, industrial formulation, fragrance product, solvent, formulation and use of coatings, inks, strippers, lubricants

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:**
LES DERIVES RESINIQUES & TERPENIQUES (DRT)
30 rue Gambetta
BP 90206
40105 DAX CEDEX
FRANCE
Tel: 33-(0)5 58 56 62 00
Fax: 33-(0)5 58 56 62 40
Email: fds@drt.fr

1.4 Emergency telephone numbers

- NCEC (24/24 – 7/7)
Europe: +44 1235 239670
Global / English speaking countries: +44 1865 407333
Other countries: see section 16

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008:



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07 exclamation mark

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1B H317 May cause an allergic skin reaction.

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· **Information concerning particular hazards for human and environment:**

Effects on human health:

if swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey for 48 hours minimum).

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008:**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms:**



GHS02 GHS07 GHS08 GHS09

· **Signal word:** Danger

· **Hazard statements:**

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements:**

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331 Do NOT induce vomiting.

P302+P352 IF ON SKIN: Wash with plenty of 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 contents and container in accordance with local/regional/national/international regulations.

· **Hazardous components responsible for classification:**

Hydrocarbons, terpene processing by-products (CAS 68956-56-9)

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:**

According to Annex XIII of REACH Regulation, the components of the mixture are not considered to be Persistent, Bioaccumulative and Toxic.

· **vPvB:**

According to Annex XIII of REACH Regulation, the components of the mixture are not considered to be very Persistent and very Bioaccumulative.

· **Determination of endocrine-disrupting properties**

The components of the mixture are not included in the list established in accordance with Article 59(1) of REACH regulation for having endocrine disrupting properties, and are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/210056 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures** All components are in accordance with Regulation (EC) No 1907/2006 (REACH).

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Description:

Mixture of terpenic hydrocarbons and terpenic alcohols.

Hydrocarbons, terpene processing by-products (CAS No. 68956-56-9)

Distillation fraction obtained from terpene processing, mainly composed of hydrocarbons (terpinolene, camphene, alpha-terpinene, alpha-pinene, dipentene, gamma-terpinene, paracymene, isoterpinolene, etc.); cineoles (1,4-cineole and 1,8-cineole) and terpene alcohols (alpha-terpineol, gamma-terpineol, etc.) are also present.

Terpineol multiconstituent (EC No. 701-188-3)

Multiconstituent substance, consisting of the following main constituents (> 10%):

- (-)-alpha-terpineol [$\alpha,\alpha,4$ -trimethyl-(1S)-3-cyclohexene-1-methanol - CAS No 10482-56-1]- (+)-alpha-terpineol [$\alpha,\alpha,4$ -trimethyl-(1R)-3-cyclohexene-1-methanol - CAS No 7785-53-7]

- gamma-terpineol [1-methyl-4-(1-methylethylidene)-cyclohexanol - CAS No 586-81-2]

According to REACH, components present at less than 10% are considered as impurities.

Main impurities:

- cis-beta-terpineol [cis-1-methyl-4-(1-methylethenyl)-cyclohexanol - CAS No 7299-41-4]

- trans-beta-terpineol [trans-1-methyl-4-(1-methylethenyl)-cyclohexanol - CAS No 7299-40-3]

- delta-terpineol [α,α -dimethyl-4-methylene cyclohexanemethanol - CAS No 7299-42-5]

- 1-terpinen-4-ol [1-isopropyl-4-methylcyclohex-3-en-1-ol - CAS No 562-74-3]

Hazardous components:

CAS: 68956-56-9 EINECS: 273-309-3 Reg.nr.: 01-2119980606-28-0000	hydrocarbons, terpene processing by-products ⚠ Flam. Liq. 3, H226; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317	90-95%
CAS: 8000-41-7 EC number: 701-188-3 Reg.nr.: 01-2119553062-49-0000	terpineol multiconstituent ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	5-10%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.**SECTION 4: First aid measures****4.1 Description of first aid measures****After inhalation:**

Supply fresh air. If symptoms are experienced, get medical attention.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately rinse with plenty of water.

Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Get medical attention if irritation or skin rash occurs.

After eye contact:

Immediately rinse with plenty of water. Remove contact lenses, if present and easy to do. Hold eyelids apart and flush eyes with plenty of cool low-pressure water for 15 minutes. Consult an ophthalmologist.

After swallowing:

Do NOT induce vomiting.

If the person is conscious, rinse out mouth with water.

Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed Pulmonary effects if swallowed accidentally.**4.3 Indication of any immediate medical attention and special treatment needed**

If swallowed accidentally, medical survey for 48 hours minimum.

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SECTION 5: Firefighting measures

5.1 Suitable extinguishing agents

Foam
Fire-extinguishing powder
Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture In case of fire, may release irritant and toxic fumes.**5.3 Advice for firefighters****Protective equipment:**

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus.

Additional information: Cool endangered receptacles with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment. Keep unprotected persons away.
Provide adequate ventilation.

6.2 Environmental precautions

Do not allow product to reach soil, waterways, drains and sewers.
Inform the relevant authorities if the product has caused environmental pollution (soil, waterways, drains or sewers).

6.3 Methods and material for containment and cleaning up

Small spills:

Absorb spilled liquid with inert absorbent. Collect in an appropriate container properly labelled. Close it for disposal.

Large spills:

Stop spill if it can be done without danger. Dike. Pump as much liquid as possible with an explosion-proof pump or a hand pump. Absorb the remaining liquid with inert absorbent. Collect in an appropriate container properly labelled. Close it for disposal. Use only non-sparking tools.

6.4 Reference to other sections

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Wear appropriate personal protective equipment. Provide adequate ventilation in the workplace.

Information about fire - and explosion protection:

Protect against electrostatic charges.

Use only non-sparking tools.

Protect from heat.

Keep ignition sources away.

7.2 Conditions for safe storage

If possible, store the drums or ecobulk under shelter in a cool and well ventilated place.

Keep container type drums or ecobulk tightly closed.

All equipments including ventilation systems must be equipotential and earthed.

Keep away from sources of ignition.

Protect drums or ecobulk from high heat and direct sunlight.

7.3 Specific end use(s) Only identified uses listed in section 1 are covered by exposure scenarios.

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SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Components with limit values that require monitoring at the workplace:

terpenes

Austria: limit value - 8 hours = 560 mg/m³ (100 ppm)Austria: limit value - short term = 560 mg/m³ (100 ppm)

Denmark: limit value - 8 hours = 25 ppm

Denmark: limit value - short term = 50 ppm

Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)Sweden: limit value - short term = 300 mg/m³ (50 ppm)Switzerland: limit value - 8 hours = 112 mg/m³ (20 ppm)Switzerland: limit value - short term = 224 mg/m³ (40 ppm)

alpha-pinene multiconstituent (common CAS 80-56-8)

Belgium: limit value - 8 hours = 20 ppm

Norway: limit value - 8 hours = 140 mg/m³ (25 ppm)Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)Sweden: limit value - short term = 300 mg/m³ (50 ppm)Switzerland: limit value - 8 hours = 112 mg/m³ (20 ppm)Switzerland: limit value - short term = 224 mg/m³ (40 ppm)

paracymene (CAS 99-87-6)

Belgium: limit value - 8 hours = 100 mg/m³ (20 ppm)Denmark: limit value - 8 hours = 135 mg/m³ (25 ppm)Denmark: limit value - short term = 270 mg/m³ (50 ppm)Sweden: limit value - 8 hours = 140 mg/m³ (25 ppm)Sweden: limit value - short term = 190 mg/m³ (35 ppm)

dipentene (dl-limonene - CAS 138-86-3)

Norway: limit value - 8 hours = 140 mg/m³ (25 ppm)Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)Sweden: limit value - short term = 300 mg/m³ (50 ppm)

d-Limonene (CAS 5989-27-5) - one of the two isomers of dipentene (CAS 138-86-3)

Finland: limit value - 8 hours = 140 mg/m³ (25 ppm)Finland: limit value - short term = 280 mg/m³ (50 ppm)Germany (AGS): limit value - 8 hours = 28 mg/m³ (5 ppm)Germany (AGS): limit value - short term = 110 mg/m³ (20 ppm)Germany (DFG): limit value - 8 hours = 28 mg/m³ (5 ppm)Germany (DFG): limit value - short term = 112 mg/m³ (20 ppm)Norway: limit value - 8 hours = 140 mg/m³ (25 ppm)Spain: limit value - 8 hours = 168 mg/m³ (30 ppm)Switzerland: limit value - 8 hours = 40 mg/m³ (7 ppm)Switzerland: limit value - short term = 80 mg/m³ (14 ppm)

· DNELs

· DNEL (Derived No-Effect Level): Workers - Long-term exposure

hydrocarbons, terpene processing by-products (CAS 68956-56-9)Systemic effects - inhalation: 2.9 mg/m³

Systemic effects - dermal: 0.8 mg/kg body weight/day

terpineol multiconstituent (EC 701-188-3)Systemic effects - inhalation: 44.8 mg/m³

Systemic effects - dermal: 6.36 mg/kg body weight/day

· DNEL (Derived No-Effect Level): General population - Long-term exposure

hydrocarbons, terpene processing by-products (CAS 68956-56-9)Systemic effects - inhalation: 0.7 mg/m³

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Systemic effects - dermal: 0.3 mg/kg body weight/day
Systemic effects - oral: 0.3 mg/kg body weight/day
terpineol multiconstituent (EC 701-188-3)
Systemic effects - inhalation: 7.96 mg/m³
Systemic effects - dermal: 2.69 mg/kg body weight/day
Systemic effects - oral: 2.69 mg/kg body weight/day

· PNECs**· PNEC (Predicted No-Effect Concentration) aqua (freshwater):**

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 2.1 µg/L

terpineol multiconstituent (EC 701-188-3) 12 µg/L

· PNEC (Predicted No-Effect Concentration) aqua (marine water):

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 0.21 µg/L

terpineol multiconstituent (EC 701-188-3) 1.2 µg/L

· PNEC (Predicted No-Effect Concentration) Sewage Treatment Plant:

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 6.4 mg/L

terpineol multiconstituent (EC 701-188-3) 2.57 mg/L

· PNEC (Predicted No-Effect Concentration) sediment (freshwater):

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 0.542 mg/kg sediment dry weight

terpineol multiconstituent (EC 701-188-3) 0.263 mg/kg sediment dry weight

· PNEC (Predicted No-Effect Concentration) sediment (marine water):

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 54.2 µg/kg sediment dry weight

terpineol multiconstituent (EC 701-188-3) 0.026 mg/kg sediment dry weight

· PNEC (Predicted No-Effect Concentration) soil:

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 110 µg/kg soil dry weight

terpineol multiconstituent (EC 701-188-3) 0.045 mg/kg soil dry weight

· PNEC (Predicted No-Effect Concentration) oral:

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 13.1 mg/kg food

terpineol multiconstituent (EC 701-188-3) 16.6 mg/kg food

· PNEC (Predicted No-Effect Concentration) aqua (intermittent releases):

hydrocarbons, terpene processing by-products (CAS 68956-56-9) 21 µg/L

terpineol multiconstituent (EC 701-188-3) 120 µg/L

· Additional information:

This sheet is based on the current valid lists for occupational exposure limit values at the time of its preparation. The DNELs and PNECs values are derived from the chemical safety assessment conducted for REACH.

Occupational exposure limits and DNELs are health-based but they are not necessarily set in the same way. The primary duty is to comply with risk management measures which enable to limit exposures as much as possible and to be in line with exposure reference levels.

· 8.2 Exposure controls**· General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Immediately remove all soiled and contaminated clothing.

Avoid contact with eyes and skin.

· Personal protective equipment**· Respiratory protection:**

If ventilation is insufficient, use a breathing apparatus (filtering device with type A cartridge or insulating device with a source of fresh air independent of the ambient air).

· Hand protection

Protective gloves resistant to chemicals (standard EN 374-1). They should be replaced regularly and if there is any indication of degradation.

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· Eye/face protection

Safety glasses (standard EN 166).

For qualifying operations with increased risk (eg: connection/disconnection of hoses, purges, sampling, etc.) wear safety glasses (standard EN 166) AND a face shield.

· Body protection: Protective work clothing.**SECTION 9: Physical and chemical properties****· 9.1 Information on basic physical and chemical properties****· General Information****· Appearance:****· Physical state:** Liquid**· Colour:** Colourless**· Odour:** Turpentine-like**· Odour threshold:** Not determined**· Change in condition****· Melting/freezing point:** Not determined**· Boiling point or boiling range:** 171 - 245 °C [Differential Scanning Calorimetry method (DSC)]**· Flammability:** The mixture is ignitable**· Flash point:** 46°C (setaflash method - closed cup)**· Auto-ignition temperature:** Not determined**· Decomposition temperature:** Not determined**· pH value:** Not applicable**· Viscosity****· Kinematic viscosity:** < 7 mm²/s (40°C) [OECD 114 / capillary rotational viscometer method]**· Dynamic viscosity:** Not determined**· Solubility****· in water:** Not soluble or slightly soluble**· Partition coefficient (n-octanol/water):** Not determined**· Vapour pressure:** Not determined**· Density and/or relative density****· Relative density:** 0,85 - 0,87 (method: oscillating densimeter method at 20 °C)**· Vapour density:** Not determined**· Ignition temperature:** Not determined**· Explosive properties:** The components of the mixture do not contain any chemical groups associated with explosive properties**· Oxidising properties:** The components of the mixture do not contain any chemical groups associated with oxidizing properties**· Evaporation rate:** Not determined**· 9.2 Other information** No other data**SECTION 10: Stability and reactivity****· 10.1 Reactivity** No data from specific reactivity tests are available for this product or this class of product.**· 10.2 Chemical stability** Product stable under storage and handling conditions according to specifications (see section 7).**· 10.3 Possibility of hazardous reactions**

No hazardous reactions known except those with incompatible products listed in point 10.5.

· 10.4 Conditions to avoid Keep away from any flame or source of sparks.

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- **10.5 Incompatible materials**
Strong acids
Strong bases
Strong oxidising agents
Materials that react with oxygenated terpenes
- **10.6 Hazardous decomposition products** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD₅₀/LC₅₀ values relevant for classification:**
hydrocarbons, terpene processing by-products (CAS 68956-56-9)
LD₅₀ (oral, rat): > 2 000 mg/kg (OECD 401 Guideline)
LD₅₀ (dermal, rat): > 2 000 mg/kg (OECD 402 Guideline)
terpineol multiconstituent (EC 701-188-3)
LD₅₀ (oral, rat): > 2 000 mg/kg (OECD 401 Guideline)
LD₅₀ (dermal, rabbit): > 2 000 mg/kg (OECD 402 Guideline)
LC₅₀ (inhalation, 4 h, rat): > 4.76 mg/L (OECD 403 Guideline)
Note: no acute toxicity (either local or systemic) was identified at the highest dose tested by inhalation (4.76 mg/L). Oral and dermal LD₅₀ are higher than 2 000 mg/kg. Therefore, no signs of acute toxicity are expected by inhalation at concentrations used for classification.
- **Skin corrosion/irritation:**
The components of the mixture cause skin irritation.
hydrocarbons, terpene processing by-products (CAS 68956-56-9)
This substance was found irritant in a skin irritation study conducted on rabbits according to a method equivalent to OECD 404 Guideline.
terpineol multiconstituent (CE 701-188-3)
Multiconstituent terpineol and alpha-terpineol (main constituent) were found to be skin irritating, in several studies conducted on rabbits according to OECD 404 Guideline.
- **Serious eye damage/irritation:**
The components of the mixture cause eye irritation (category 2).
hydrocarbons, terpene processing by-products (CAS 68956-56-9)
The substance is classified as eye irritant (category 2) based on available data on one of its constituent and on another substance containing common constituents:
 - camphene induced irritant effects in an eye irritation study conducted on rabbits according to OECD 405 Guideline;
 - a substance containing terpinolene, 1,4-cineole, 1,8-cineole and dipentene was found irritant in an *in vitro* eye irritation study on a human reconstructed corneal epithelium model.terpineol multiconstituent (EC 701-188-3)
This substance was found to be eye irritating (category 2), in a study conducted on rabbit according to OECD 405 Guideline.
- **Skin sensitisation:**
The mixture is classified as skin sensitizer category 1B due to the presence of hydrocarbons, terpene processing by-products.
hydrocarbons, terpene processing by-products (CAS 68956-56-9)
This substance is classified as skin sensitizer (category 1B) based on available data on one of its constituents and on another substance containing common constituents: terpinolene and a substance containing terpinolene, 1,4-cineole, 1,8-cineole and dipentene were found skin sensitizers in the murine Local Lymph Node Assay (LLNA - OECD 429 Guideline).
- **Mutagenicity/genotoxicity:**
The components of the mixture did not show any genotoxic potential.
hydrocarbons, terpene processing by-products (CAS 68956-56-9)
Results of tests conducted with this substance suggest that it has no genotoxic potential:

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- no mutagenic effects observed in bacteria in an Ames test (OECD 471 Guideline);
- no mutagenic effects observed in a gene mutation test in mouse lymphoma L5178Y cells (OECD 476 Guideline);
- no genotoxic effects were observed in a chromosome aberration test in human lymphocytes (OECD 473 Guideline), except after exposing cells for 20 hours without metabolic activation S9. The toxicological significance of this observation was considered questionable. Therefore, an *in vitro* micronucleus test (OECD 487 Guideline) was performed under similar experimental conditions (20 h-exposure without metabolic activation, human lymphocytes). No biologically relevant increases in micronuclei were observed.

terpineol multiconstituent (EC 701-188-3)

Based on the results of the tests conducted with this substance and one of its main constituents, no genotoxic potential is expected:

- terpineol multiconstituent and alpha-terpineol were not mutagenic in several Ames tests (OECD 471 Guideline);
- no genotoxic effects were observed with this substance in an *in vitro* chromosome aberration test in human lymphocytes (OECD 473 Guideline);
- alpha-terpineol was not mutagenic in a gene mutation test on mouse lymphoma L5178Y cells (OECD 476 Guideline).

· **Carcinogenicity:**

This mixture is not expected to be carcinogenic.

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

This substance is not expected to be carcinogenic: no mutagenic effects were observed with the substance itself, and a repeated dose toxicity study conducted on rats with a substance containing common constituents (terpinolene, 1,4-cineole, 1,8-cineole and dipentene) did not demonstrate any hyperplasia signs or pre-neoplastic lesions.

terpineol multiconstituent (EC 701-188-3)

This substance is not expected to be carcinogenic: no mutagenic effects were observed with the substance and repeated dose toxicity studies on its constituents did not induce hyperplasia or pre-neoplastic lesions.

· **Reproductive toxicity:**

No toxic effects for reproduction are expected from the mixture.

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

Data are available on two constituents of the substance (alpha-pinene and camphene) and on another substance containing common constituents (terpinolene, 1,4-cineole, 1,8-cineole and dipentene). Based on this information, no toxic effects for reproduction are expected from substance with hydrocarbons, terpene processing by-products:

1) a substance containing terpinolene, 1,4-cineole, 1,8-cineole and dipentene was tested in an oral combined repeated dose and reproduction/developmental screening test conducted on rats according to OECD 422 Guideline. No effects were observed on reproductive performance, gestation parameters, pup survival and development.

NOAEL (No Observed Adverse Effect Level) - systemic toxicity for males and females (P) = 435.8 mg/kg body weight/day (higher dose tested)

NOAEL - reproduction and developmental toxicity = 435.8 mg/kg body weight/day (higher dose tested)

2) no effects were observed on reproductive organs in 90-day inhalation repeated toxicity studies conducted with alpha-pinene on rats and mice.

3) no effects on development were observed at maternal non-toxic doses in an oral study conducted on rats with camphene, according to OECD 414 Guideline.

terpineol multiconstituent (EC 701-188-3)

Based on findings from three studies conducted on rats with this substance, there is strong evidence that no reproductive effects are likely to occur by the possible routes of human exposure.

A prenatal developmental toxicity study was conducted according to OECD 414 Guideline. Administration of the substance by gavage to pregnant female rats at doses up to 600 mg/kg body weight/day did not induce effects considered as adverse on pup survival and development.

NOAEL (maternal toxicity) = 600 mg/kg body weight/day

NOAEL (embryo-foetal toxicity) = 600 mg/kg body weight/day

No effects were observed on the reproductive organs in two 90-day repeated toxicity studies conducted on rat: by inhalation according to OECD 413 Guideline and by oral route.

· **Specific target organ toxicity - single exposure:**

No specific target organ toxicity leading to classification was observed in the LD₅₀ determination studies carried out with the tested components of this product.

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· Specific target organ toxicity - repeated exposure:

Available data on the components of the mixture do not lead to any classification.

Hydrocarbons, terpene processing by-products (CAS 68956-56-9)

Data are available on two constituents of the substance (alpha-pinene and camphene) and on another substance containing common constituents (terpinolene, 1,4-cineole, 1,8-cineole and dipentene). These informations can be extrapolated to the substance itself and do not lead to any classification.

terpineol multiconstituent (EC 701-188-3)

Available data presented below do not lead to any classification of the substance.

In a repeated dose toxicity study, daily administration of terpineol multiconstituent by gavage for 5 weeks to male and female rats was generally well tolerated at dose levels up to 750 mg/kg body weight/day.

NOAEL = 250 mg/kg (testicles)

There is strong evidence that no effects will occur when animals are exposed through a route relevant for human exposure (diet) rather than gavage.

A 90-day repeated dose toxicity study was carried out by inhalation on rat, according to OECD 413 Guideline.

Administration of the substance to male and unmated female rats, at dose levels up to 2.23 mg/L, was well tolerated and no effects were observed on the reproductive organs.

NOAEL = 2.23 mg/L

· **Aspiration hazard:** If swallowed accidentally, the product may enter the respiratory tract due to its low viscosity.

· Additional toxicological information:**· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

According to Regulation (EC) No 1272/2008 criteria, the components of the mixture are not considered to be CMR.

· 11.2 Information on other hazards**· Endocrine disrupting properties**

The components of the mixture are not included in the list established in accordance with Article 59(1) of REACH regulation for having endocrine disrupting properties, and are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/210056 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological information

· 12.1 Aquatic toxicity

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

Reliable short-term aquatic toxicity values have been determined in tests conducted with water-accommodated fractions (WAFs). This method was developed for slightly soluble substances; the initial loading rate of the substance is well higher than the solubility in water. LL₅₀ and EL₅₀, similar to LC₅₀ and EC₅₀, are obtained.

LL₅₀ (96 h), fish (Danio rerio): 5.07 mg/L (nominal concentration - OECD 203 Guideline)

EL₅₀ (48 h), daphnia (Daphnia magna): 2.10 - 2.70 mg/L (nominal concentration - OECD 202 Guideline - two batches tested)

EL₅₀ (72 h), algae (Pseudokirchnerella subcapitata): 4.78 mg/L (growth rate - nominal concentration - OECD 201 Guideline)

EL₅₀ (72 h), algae (Pseudokirchnerella subcapitata): 3.08 mg/L (yield - nominal concentration - OECD 201 Guideline)

These results lead to classify the substance for its toxicity to aquatic life.

The mixture is classified due to the presence of hydrocarbons, terpene processing by-products.

· Toxicity to aquatic microorganisms:

Sewage containing the mixture can be treated by a municipal sewage treatment plant (taking into account the 2 PNECs sewage treatment plant given in section 8).

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

An acute aquatic toxicity study was performed according to OECD 209 Guideline to assess the effects of two different batches of the substance.

The microbial source was an activated sludge of a predominantly domestic sewage.

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EC₅₀ (3 h): 365 and 579 mg/L (respiration rate - nominal concentration - two batches tested)

terpineol multiconstituent (EC 701-188-3)

No toxic effects were observed with this substance on activated sludge of a predominantly domestic sewage, in a ready biodegradability study.

· **Terrestrial toxicity:**

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

No data available.

terpineol multiconstituent (EC 701-188-3)

LC₅₀ (14 days), earthworm (*Eisenia fetida*): 499 - 799 mg/kg soil dry weight (based on mortality - nominal concentration - OECD 207 Guideline)

NOEC (14 days), earthworm (*Eisenia fetida*): 311 mg/kg soil dry weight (based on mortality - nominal concentration - OECD 207 Guideline)

NOEC (14 days), earthworm (*Eisenia fetida*): 311 mg/kg soil dry weight (based on growth - nominal concentration - OECD 207 Guideline)

· **12.2 Persistence and degradability**

The mixture consists of 2 substances readily biodegradable.

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

Hydrocarbons, terpene processing by-products are readily biodegradable.

Degradation achieved in 28 days: 81 - 83% (oxygen consumption - OECD 301 D Guideline - activated sludge from a domestic wastewater treatment plant - non-adapted).

terpineol multiconstituent (EC 701-188-3)

Terpineol multiconstituent is readily biodegradable.

Degradation after 28 days: 80% (inorganic carbon concentration - OECD 310 Guideline - activated sludge from domestic waste water - 60% being surpassed within 10 days after reaching 10%).

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil**

hydrocarbons, terpene processing by-products (CAS 68956-56-9)

No data available.

terpineol multiconstituent (EC 701-188-3)

The adsorption coefficient of the substance was determined in a study conducted following the OECD 106 Guideline: $28.8 \leq K_{oc} \leq 50.9$

Taken with the high water solubility, this value is low enough to suggest that terpineol multiconstituent will show limited adsorption to soil or sediment particulates, and will partition mainly to water (in the surface or ground water compartments).

· **12.5 Results of PBT and vPvB assessment**

· **PBT:**

According to Annex XIII of REACH Regulation, the components of the mixture are not considered to be Persistent, Bioaccumulating and Toxic.

· **vPvB:**

According to Annex XIII of REACH Regulation, the components of the mixture are not considered to be very Persistent and very Bioaccumulating.

· **12.6 Endocrine disrupting properties**

The components of the mixture are not included in the list established in accordance with Article 59(1) of REACH regulation for having endocrine disrupting properties, and are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/210056 or Commission Regulation (EU) 2018/605.

· **12.7 Other adverse effects** No data available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods** National and regional regulations have to be adhered to.

· **Recommendation:** The product has to be disposed of in an authorised incinerator, according to regulation.

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- **Uncleaned packaging**
- **Recommendation:** Packaging has to be sent to an authorised waste treatment facility, for recycling or disposal.

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA 	UN 1993
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG · IATA 	1993 FLAMMABLE LIQUID, N.O.S. (hydrocarbons, terpene processing by-products), ENVIRONMENTALLY HAZARDOUS FLAMMABLE LIQUID, N.O.S. (hydrocarbons, terpene processing by-products), MARINE POLLUTANT FLAMMABLE LIQUID, N.O.S. (hydrocarbons, terpene processing by-products)
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG 	<div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> · Class · Label · IATA <div style="display: flex; align-items: center; gap: 10px;">  </div> <ul style="list-style-type: none"> · Class · Label
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	3 Flammable liquids. 3 3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.5 Environmental hazards · Marine pollutant: · Special marking (ADR): 	Environmentally hazardous substance, liquid; Marine Pollutant Product contains environmentally hazardous substances: hydrocarbons, terpene processing by-products Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Danger code: · EMS Number: 	Not applicable 30 F-E,S-E
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	Not applicable
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Tunnel restriction code 	D/E

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· Classification code (letter/figure)	F1
· UN "Model Regulation"	UN 1993, FLAMMABLE LIQUID, N.O.S. (hydrocarbons, terpene processing by-products), ENVIRONMENTALLY HAZARDOUS, 3, III

SECTION 15: Regulatory information

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

Regulation (EC) No 1907/2006 (REACH):

The product does not contain any of the substances included in the following lists

- Annex XIV (authorisation) / substances of very high concern (SVHC)
- Annex XVII (restrictions)

Directive 2012/18/EU:

Product fulfilling the criteria of hazard categories:

- P5c "Flammable liquids, category 3 (H226)",
- E2 "Hazardous to the Aquatic Environment in Category Chronic 2 (H411)".

· 15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for hydrocarbons, terpene processing by-products (CAS 68956-56-9) and for terpineol multiconstituent (EC 701-188-3).

SECTION 16: Other information

Information provided in this safety data sheet is based on our experience and present knowledge. It is a description of safety requirements and data given on the product and cannot be considered as specifications. They shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Version** 14,1
- **Previous version:** 14.0 of 05/01/2023
- **Emergency telephone numbers (other countries):**

NCEC - In-Country Numbers (24/24 - 7/7)

Australia: +61 2 8014 4558 / 18000 74234

Bangladesh: +65 3158 1200

China: 400 120 6011

China (Mainland): +86 532 8388 9090

Czech Republic: +420 228 882 830

Denmark: +45 8988 2286

Finland: +358 9 7479 0199

Greece: +30 21 1198 3182

India: +65 3158 1198

India: 000 800 100 7479

Indonesia: 007 803 011 0293

Japan: +81 3 4578 9341

Malaysia: +60 3 6207 4347

New Zealand: +64 9 929 1483 / 0800 446 881

Norway: +47 2103 4452

Pakistan: +65 3158 1329

Philippines: +63 2 8231 2149

Singapore: +65 3165 2217

South Africa: +27 21 300 2732

South Korea: +82 2 3479 8401

Sri Lanka: +65 3158 1195

Sweden: +46 8 566 42573

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Taiwan: +886 2 8793 3212
Thailand: 001 800 120 666 751
Turkey: +90 212 375 5231
Vietnam: +84 28 4458 2388

· Full text of H and EUH mentions indicated in sections 2 and 3:

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

· Abbreviations and acronyms:

CLP: Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging
EC₅₀: Concentration which leads to a 50% reduction in treated organism responses compared to untreated organism responses (algae) or concentration which causes effects to 50% of the tested organisms (daphnids)
LC₅₀: Lethal concentration for 50% of exposed animals
LD₅₀: Lethal dose for 50% of animals exposed by oral or dermal route
EL₅₀: Loading rate which leads to a 50 % reduction in treated organisms responses compared to untreated organism responses (algae) or loading rate which causes effects to 50 % of the tested organisms (daphnids)
Koc: Organic carbon/water partition coefficient. It represents the potential of retention of the substance on soil organic matter
LL₅₀: Median lethal loading rate (lethal level for 50% of fish exposed)
LLNA: Local Lymph Node Assay
NOAEC: No Observed Adverse Effect Concentration
NOAEL: No Observed Adverse Effect Level
NOEC: No Observed Effect Concentration
OECD: Guidelines from the Organisation for Economic Co-operation and Development
PBT: Persistent, Bioaccumulative and Toxic substance
vPvB: very Persistent and very Bioaccumulative substance
Flam. Liq. 3: Flammable liquids, Category 3
Skin Irrit. 2: Skin corrosion/irritation, Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1B: Skin sensitisation, Category 1B
Asp. Tox. 1: Aspiration hazard, Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· Sources:

Literature and company data
REACH registration dossiers of the components of the mixture

· Modified data compared to the previous version: Update of transport section (section 14)**· Annex:**

on request at the following address, fds@drf.fr

End of the safety data sheet

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