EO Armoise

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 2/28/2024 Version: 1.0

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

1.1. Product identifier

Product form	:	Substance (UVCB)
Substance name	:	EO Armoise
IUPAC name	:	Artemisia herba-alba, ext.
EC-No.	:	283-905-5
CAS-No.	:	84775-75-7
REACH registration No.	:	01-2120751478-45
Product code	:	20148
Product group	:	Trade product

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

1.2.1. Relevant identified uses

Intended for general public

Main use category	:	Professional use,Consumer use
Use of the substance/mixture	:	Fragrance raw material

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

De Hekserij
Spoorstraat 57
8271 RG IJsselmuiden
Nederland
www.hekserij.nl

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Acute toxicity (oral), Category 3	H301
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, category 1A	H317
Specific target organ toxicity – Single exposure, Category 2	H371
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. May cause damage to organs. Toxic if swallowed. May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS02 GHS06 GHS08

Signal word (CLP)	:	Danger
Hazard statements (CLP)	:	H226 - Flammable liquid and vapour. H301 - Toxic if swallowed. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H371 - May cause damage to organs. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP)	:	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P260 - Do not breathe dust, fume, gas, mist, spray, vapours. P264 - Wash hands, forearms and face thoroughly after handling. P273 - Avoid release to the environment. P280 - Wear protective clothing, eye protection, face protection, protective gloves. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER, a doctor. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P330 - Rinse mouth. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up. P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type	:	UVCB
Name	:	EO Armoise
CAS-No.	:	84775-75-7
EC-No.	:	283-905-5

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
EO Armoise	CAS-No.: 84775-75-7 EC-No.: 283-905-5 REACH-no: 01-2120751478-45	100	See section 2.1
1-isopropyl-4-methylbicyclo[3.1.0]hexan-3-one	CAS-No.: 546-80-5 EC-No.: 208-912-2	50 – 70	Acute Tox. 4 (Oral), H302
Bornan-2-one	CAS-No.: 76-22-2 EC-No.: 200-945-0	30 – 50	Flam. Sol. 2, H228 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 STOT SE 2, H371
Thujone beta	CAS-No.: 471-15-8 EC-No.: 620-564-7	5 – 10	Acute Tox. 4 (Oral), H302
Camphene	CAS-No.: 79-92-5 EC-No.: 201-234-8	5 – 10	Flam. Sol. 1, H228 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Eukalyptol (1.8-Cineol)	CAS-No.: 470-82-6 EC-No.: 207-431-5	1 – 5	Flam. Liq. 3, H226 Skin Sens. 1B, H317

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Pinene alpha	CAS-No.: 80-56-8 EC-No.: 201-291-9	1 – 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
DL-borneol	CAS-No.: 507-70-0 EC-No.: 208-080-0	1 – 5	Flam. Sol. 2, H228 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 2, H371
p-Cymene	CAS-No.: 99-87-6 EC-No.: 202-796-7 EC Index-No.: 601-094-00-1	1 – 5	Flam. Liq. 3, H226 Acute Tox. 3 (Inhalation), H331 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
4-Carvomenthenol	CAS-No.: 562-74-3 EC-No.: 209-235-5	1 – 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412
Sabinene	CAS-No.: 3387-41-5 EC-No.: 222-212-4	0.1 – 1	Acute Tox. 4 (Oral), H302
gamma Terpinene	CAS-No.: 99-85-4 EC-No.: 202-794-6	0.1 – 1	Flam. Liq. 3, H226 Repr. 2, H361 Aquatic Chronic 2, H411
Carvone	CAS-No.: 99-49-0 EC-No.: 202-759-5 EC Index-No.: 606-148-00-8	0.1 – 1	Skin Sens. 1, H317
GERANIOL	CAS-No.: 106-24-1 EC-No.: 203-377-1	0.1 – 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1B, H317
Limonene D- (nat)	CAS-No.: 5989-27-5 EC-No.: 227-813-5 EC Index-No.: 601-096-00-2	0.1 – 1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Linalool	CAS-No.: 78-70-6 EC-No.: 201-134-4 EC Index-No.: 603-235-00-2 REACH-no: 01-2119474016-42	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
Pinene beta	CAS-No.: 127-91-3 EC-No.: 204-872-5	0.1 – 1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
Citronellol	CAS-No.: 106-22-9 EC-No.: 203-375-0 REACH-no: 01-2119453995-23	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
p-mentha-1(7),2-diene	CAS-No.: 555-10-2 EC-No.: 209-081-9	0.1 – 1	Flam. Liq. 3, H226 Asp. Tox. 1, H304
Eugenol	CAS-No.: 97-53-0 EC-No.: 202-589-1	0.1 – 1	Eye Irrit. 2, H319 Skin Sens. 1B, H317

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Myrcene	CAS-No.: 123-35-3 EC-No.: 204-622-5	0.1 – 1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Cuminaldehyde	CAS-No.: 122-03-2 EC-No.: 204-516-9	0.1 – 1	Acute Tox. 4 (Oral), H302

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Rinse mouth. Call a physician immediately.

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

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : May cause an allergic skin reaction.
Symptoms/effects after eye contact : Eye irritation.
Symptoms/effects after ingestion : None under normal conditions.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Packaging materials : Store always product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Not available
Odour	:	Not available
Odour threshold	:	Not available
Melting point	:	< -20 °C Decomposition: 'no'
Freezing point	:	Not available
Boiling point	:	≈ 199.97 °C Atm. press.: 101325 Pa
Flammability	:	Flammable liquid and vapour.

Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	65.5 °C Atm. press.: 101325 Pa
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	Not available
Solubility	:	Not available
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	0.9 – 0.94 (d20/20)
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Toxic if swallowed.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

EO Armoise (84775-75-7)	
LD50 oral	194 mg/kg bodyweight Animal:

Bornan-2-one (76-22-2)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Bornan-2-one (76-22-2)	
LC50 Inhalation - Rat	> 10 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Camphene (79-92-5)	
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit

Pinene alpha (80-56-8)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))

DL-borneol (507-70-0)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	0.5 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

p-Cymene (99-87-6)	
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit, Guideline: other:

4-Carvomenthenol (562-74-3)	
LD50 oral rat	1300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	2500 – 5000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:

Sabinene (3387-41-5)	
LD50 oral rat	300 – 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)

gamma Terpinene (99-85-4)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

GERANIOL (106-24-1)	
LD50 oral rat	≈ 3600 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

Limonene D- (nat) (5989-27-5)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)

Linalool (78-70-6)	
LD50 oral rat	2790 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:, 95% CL: 2440 - 3180
LD50 dermal rabbit	5610 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 3578 - 8374

Eugenol (97-53-0)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LD50 oral	1500 – 1500 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)

Myrcene (123-35-3)	
LD50 oral rat	> 11390 mg/kg bodyweight Animal: rat
LD50 oral	> 3380 mg/kg bodyweight Animal: mouse
LD50 dermal rabbit	> 5000 mg/l Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Cuminaldehyde (122-03-2)	
LD50 oral rat	1390 mg/kg bodyweight Animal: rat

Skin corrosion/irritation : Not classified

4-Carvomenthenol (562-74-3)	
pH	6.8 – 7.1 Temp.: 20 °C

Serious eye damage/irritation : Causes serious eye irritation.

4-Carvomenthenol (562-74-3)	
pH	6.8 – 7.1 Temp.: 20 °C

Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified

gamma Terpinene (99-85-4)	
NOAEL (animal/male, F1)	250 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (animal/female, F1)	100 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure : May cause damage to organs.

Bornan-2-one (76-22-2)	
STOT-single exposure	May cause damage to organs.

DL-borneol (507-70-0)	
STOT-single exposure	May cause damage to organs.

STOT-repeated exposure : Not classified

Bornan-2-one (76-22-2)	
NOAEL (oral, rat, 90 days)	3.2 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: other:

Eukalyptol (1.8-Cineol) (470-82-6)	
NOAEL (oral, rat, 90 days)	600 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents), Guideline: EPA OPPTS 870.3150 (90-Day Oral Toxicity in Non-rodents)

DL-borneol (507-70-0)	
NOAEL (oral, rat, 90 days)	3.2 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: other:

Linalool (78-70-6)	
NOAEL (dermal, rat/rabbit, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Citronellol (106-22-9)	
NOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat, Guideline: other:
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.063 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study)

Eugenol (97-53-0)	
NOAEL (subchronic, oral, animal/male, 90 days)	≥ 900 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: other:
NOAEL (subchronic, oral, animal/female, 90 days)	450 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: other:

Myrcene (123-35-3)	
LOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (subchronic, oral, animal/male, 90 days)	500 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	250 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard : Not classified

Linalool (78-70-6)	
Viscosity, kinematic	5191.86 mm²/s

Eugenol (97-53-0)	
Viscosity, kinematic	7.863 mm²/s at 25°C

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Harmful to aquatic life with long lasting effects.

Bornan-2-one (76-22-2)	
LC50 - Fish [1]	33.25 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	4.23 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.3 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	1.71 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

Camphene (79-92-5)	
LC50 - Fish [1]	0.72 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.72 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1.75 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Eukalyptol (1.8-Cineol) (470-82-6)	
LC50 - Fish [1]	57 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	> 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Pinene alpha (80-56-8)	
LC50 - Fish [1]	0.303 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.475 mg/l Test organisms (species): Daphnia magna

DL-borneol (507-70-0)	
LC50 - Fish [1]	33.25 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	4.23 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.3 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	1.71 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

p-Cymene (99-87-6)	
LC50 - Fish [1]	48 mg/l Test organisms (species): Cyprinodon variegatus
EC50 - Crustacea [1]	3.7 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	4.03 mg/l Test organisms (species): Scenedesmus capricornutum
EC50 72h - Algae [2]	2.01 mg/l Test organisms (species): Scenedesmus capricornutum

4-Carvomenthenol (562-74-3)	
LC50 - Fish [1]	15.6 mg/l Test organisms (species):
EC50 - Other aquatic organisms [1]	26.6 mg/l Test organisms (species):

Sabinene (3387-41-5)	
EC50 - Crustacea [1]	≈ 3960 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

gamma Terpinene (99-85-4)	
EC50 - Crustacea [1]	10189 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 10.82 mg/l Test organisms (species): Scenedesmus capricornutum

GERANIOL (106-24-1)	
LC50 - Fish [1]	≈ 22 mg/l
EC50 - Crustacea [1]	≈ 10.8 ml/l
ErC50 algae	≈ 13.1 mg/l
NOEC chronic fish	≈ 10 mg/l
NOEC chronic algae	≈ 1 ml/l

Limonene D- (nat) (5989-27-5)	
LC50 - Fish [1]	720 µg/l Test organisms (species): Pimephales promelas

Limonene D- (nat) (5989-27-5)	
LC50 - Fish [2]	702 µg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	0.307 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	0.51 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.32 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.214 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Linalool (78-70-6)	
LC50 - Fish [1]	27.8 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	59 mg/l Test organisms (species): Daphnia magna
EC50 96h - Algae [1]	88.3 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [2]	156.7 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

Citronellol (106-22-9)	
LC50 - Fish [1]	14.66 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	17.48 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	2.4 mg/l Test organisms (species):

Eugenol (97-53-0)	
LC50 - Fish [1]	13 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	1.05 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	24 mg/l

Myrcene (123-35-3)	
EC50 - Crustacea [1]	1.47 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.342 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.31 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Cuminaldehyde (122-03-2)	
EC50 - Other aquatic organisms [1]	1.17 mg/l Test organisms (species):
EC50 72h - Algae [1]	15.1 mg/l Test organisms (species):
EC50 96h - Algae [1]	2.03 mg/l Test organisms (species):
EC50 96h - Algae [2]	1.37 mg/l Test organisms (species):

12.2. Persistence and degradability

EO Armoise (84775-75-7)	
Persistence and degradability	Not rapidly degradable

1-isopropyl-4-methylbicyclo[3.1.0]hexan-3-one (546-80-5)	
Persistence and degradability	Not rapidly degradable

Bornan-2-one (76-22-2)	
Persistence and degradability	Not rapidly degradable
Thujone beta (471-15-8)	
Persistence and degradability	Not rapidly degradable
Camphene (79-92-5)	
Persistence and degradability	Not rapidly degradable
Eukalyptol (1.8-Cineol) (470-82-6)	
Persistence and degradability	Not rapidly degradable
Pinene alpha (80-56-8)	
Persistence and degradability	Not rapidly degradable
DL-borneol (507-70-0)	
Persistence and degradability	Not rapidly degradable
p-Cymene (99-87-6)	
Persistence and degradability	Not rapidly degradable
4-Carvomenthenol (562-74-3)	
Persistence and degradability	Not rapidly degradable
Sabinene (3387-41-5)	
Persistence and degradability	Not rapidly degradable
gamma Terpinene (99-85-4)	
Persistence and degradability	Not rapidly degradable
Carvone (99-49-0)	
Persistence and degradability	Not rapidly degradable
GERANIOL (106-24-1)	
Persistence and degradability	Not rapidly degradable
Limonene D- (nat) (5989-27-5)	
Persistence and degradability	Not rapidly degradable
Linalool (78-70-6)	
Persistence and degradability	Not rapidly degradable
Pinene beta (127-91-3)	
Persistence and degradability	Not rapidly degradable
Citronellol (106-22-9)	
Persistence and degradability	Not rapidly degradable
p-mentha-1(7),2-diene (555-10-2)	
Persistence and degradability	Not rapidly degradable
Eugenol (97-53-0)	
Persistence and degradability	Not rapidly degradable

Myrcene (123-35-3)	
Persistence and degradability	Not rapidly degradable

Cuminaldehyde (122-03-2)	
Persistence and degradability	Not rapidly degradable

12.3. Bioaccumulative potential

GERANIOL (106-24-1)	
Partition coefficient n-octanol/water (Log Pow)	≈ 2.6

Linalool (78-70-6)	
Partition coefficient n-octanol/water (Log Pow)	≥ 2.84

Citronellol (106-22-9)	
BCF - Fish [1]	82.59
Partition coefficient n-octanol/water (Log Pow)	3.3

Eugenol (97-53-0)	
Partition coefficient n-octanol/water (Log Pow)	1.83 pH: 55, 30 °C

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
Additional information : Flammable vapours may accumulate in the container. Do not re-use empty containers.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1992	UN 1992	UN 1992	UN 1992	UN 1992

ADR	IMDG	IATA	ADN	RID
14.2. UN proper shipping name				
FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise)	FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise)	Flammable liquid, toxic, n.o.s. (EO Armoise)	FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise)	FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise)
Transport document description				
UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise), 3 (6.1), III, (D/E)	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise), 3 (6.1), III	UN 1992 Flammable liquid, toxic, n.o.s. (EO Armoise), 3 (6.1), III	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise), 3 (6.1), III	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (EO Armoise), 3 (6.1), III
14.3. Transport hazard class(es)				
3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	FT1
Special provisions (ADR)	:	274
Limited quantities (ADR)	:	5l
Excepted quantities (ADR)	:	E1
Packing instructions (ADR)	:	P001, IBC03, R001
Mixed packing provisions (ADR)	:	MP19
Portable tank and bulk container instructions (ADR)	:	T7
Portable tank and bulk container special provisions (ADR)	:	TP1, TP28
Tank code (ADR)	:	L4BH
Tank special provisions (ADR)	:	TU15
Vehicle for tank carriage	:	FL
Transport category (ADR)	:	3
Special provisions for carriage - Packages (ADR)	:	V12
Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV13, CV28
Special provisions for carriage - Operation (ADR)	:	S2
Hazard identification number (Kemler No.)	:	36
Orange plates	:	
Tunnel restriction code (ADR)	:	D/E

Transport by sea

Special provisions (IMDG)	:	223, 274
Limited quantities (IMDG)	:	5 L
Excepted quantities (IMDG)	:	E1

Packing instructions (IMDG)	:	P001
IBC packing instructions (IMDG)	:	IBC03
Tank instructions (IMDG)	:	T7
Tank special provisions (IMDG)	:	TP1, TP28
EmS-No. (Fire)	:	F-E
EmS-No. (Spillage)	:	S-D
Stowage category (IMDG)	:	A
Properties and observations (IMDG)	:	Flammable toxic liquid which is not specified by name in this class or, on account of its characteristics, in some other class. Toxic if swallowed, by skin contact or by inhalation.

Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y343
PCA limited quantity max net quantity (IATA)	:	2L
PCA packing instructions (IATA)	:	355
PCA max net quantity (IATA)	:	60L
CAO packing instructions (IATA)	:	366
CAO max net quantity (IATA)	:	220L
Special provisions (IATA)	:	A3
ERG code (IATA)	:	3P

Inland waterway transport

Classification code (ADN)	:	FT1
Special provisions (ADN)	:	274, 802
Limited quantities (ADN)	:	5 L
Excepted quantities (ADN)	:	E1
Carriage permitted (ADN)	:	T
Equipment required (ADN)	:	PP, EP, EX, TOX, A
Ventilation (ADN)	:	VE01, VE02
Number of blue cones/lights (ADN)	:	0

Rail transport

Classification code (RID)	:	FT1
Special provisions (RID)	:	274
Limited quantities (RID)	:	5L
Excepted quantities (RID)	:	E1
Packing instructions (RID)	:	P001, IBC03, R001
Mixed packing provisions (RID)	:	MP19
Portable tank and bulk container instructions (RID)	:	T7
Portable tank and bulk container special provisions (RID)	:	TP1, TP28
Tank codes for RID tanks (RID)	:	L4BH
Special provisions for RID tanks (RID)	:	TU15
Transport category (RID)	:	3
Special provisions for carriage – Packages (RID)	:	W12
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW13, CW28
Colis express (express parcels) (RID)	:	CE4
Hazard identification number (RID)	:	36

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(a)	EO Armoise ; Eukalyptol (1.8-Cineol) ; p-Cymene ; gamma Terpinene ; Limonene D- (nat) ; Pinene beta ; p-mentha-1(7),2-diene ; Myrcene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	EO Armoise ; 1-isopropyl-4-methylbicyclo[3.1.0]hexan-3-one ; Thujone beta ; Eukalyptol (1.8-Cineol) ; Pinene alpha ; p-Cymene ; 4-Carvomenthenol ; Sabinene ; gamma Terpinene ; Carvone ; GERANIOL ; Limonene D- (nat) ; Linalool ; Pinene beta ; Citronellol ; p-mentha-1(7),2-diene ; Eugenol ; Myrcene ; Cuminaldehyde	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	EO Armoise ; p-Cymene ; 4-Carvomenthenol ; gamma Terpinene ; Limonene D- (nat) ; Myrcene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	EO Armoise ; Bornan-2-one ; Camphene ; Eukalyptol (1.8-Cineol) ; DL-borneol ; p-Cymene ; gamma Terpinene ; Limonene D- (nat) ; Pinene beta ; p-mentha-1(7),2-diene ; Myrcene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Netherlands

SZW-lijst van kankerverwekkende stoffen	:	EO Armoise is listed
SZW-lijst van mutagene stoffen	:	EO Armoise is listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	The substance is not listed

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development

Abbreviations and acronyms:	
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Flam. Sol. 1	Flammable solids, Category 1
Flam. Sol. 2	Flammable solids, Category 2
H226	Flammable liquid and vapour.
H228	Flammable solid.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

Full text of H- and EUH-statements:	
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H371	May cause damage to organs.
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.
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
Skin Sens. 1B	Skin sensitisation, category 1B
STOT SE 2	Specific target organ toxicity – Single exposure, Category 2

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.