



SAFETY DATA SHEET ORGANIC SWEET FENNEL OIL

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

1.1. Product identifier

Product name	ORGANIC SWEET FENNEL OIL
Product number	55447
Synonyms; trade names	SWEET FENNEL OIL ORGANIC
CAS number	8006-86-4
EC number	282-892-3

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

Identified uses	Cosmetics
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	55427

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 2 - H351 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

EC number	282-892-3
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Hazard pictograms



Signal word

Danger

ORGANIC SWEET FENNEL OIL

Hazard statements	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H351 Suspected of causing cancer. H304 May be fatal if swallowed and enters airways. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P273 Avoid release to the environment. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P302+P352 IF ON SKIN: Wash with plenty of water. P501 Dispose of contents/ container in accordance with national regulations.
Contains	TRANS-ANETHOLE, (R)-P-MENTHA-1,8-DIENE, 2-PINENE, 4-ALLYLANISOLE, p-MENTHA-1,4(8)-DIENE, EUCALYPTOL, 5-ISOPROPYL-2-METHYLBICYCLO[3.1.0]HEX-2-ENE, PIN-2-(10) ENE

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

TRANS-ANETHOLE			60-100%
CAS number: 4180-23-8	EC number: 224-052-0		
Classification Skin Sens. 1B - H317			
(R)-P-MENTHA-1,8-DIENE			5-10%
CAS number: 5989-27-5	EC number: 227-813-5	REACH registration number: 01-2119529223-47-XXXX	
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

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2-PINENE			5-10%
CAS number: 80-56-8	EC number: 201-291-9		
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

4-ALLYLANISOLE			1-5%
CAS number: 140-67-0	EC number: 205-427-8		
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Sens. 1 - H317 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

p-MENTHA-1,4(8)-DIENE			<1%
CAS number: 586-62-9	EC number: 209-578-0	REACH registration number: 01-2119982324-34-XXXX	
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Skin Sens. 1B - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

EUCALYPTOL			<1%
CAS number: 470-82-6	EC number: 207-431-5	REACH registration number: 01-2119967772-24-XXXX	
Classification Flam. Liq. 3 - H226 Skin Sens. 1B - H317			

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5-ISOPROPYL-2-METHYLBICYCLO[3.1.0]HEX-2-ENE		<1%
CAS number: 2867-05-2	EC number: 220-686-7	
Classification Flam. Liq. 3 - H226 Skin Sens. 1 - H317		
PIN-2-(10) ENE		<1%
CAS number: 127-91-3	EC number: 204-872-5	
M factor (Acute) = 1	M factor (Chronic) = 1	
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1B - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		
P-MENTHA-1,4-DIENE		<1%
CAS number: 99-85-4	EC number: 202-794-6	
Classification Flam. Liq. 3 - H226 Repr. 2 - H361d Asp. Tox. 1 - H304		

The full text for all hazard statements is displayed in Section 16.

Product name	ORGANIC SWEET FENNEL OIL
CAS number	8006-86-4
EC number	282-892-3
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if symptoms are severe or persist.
Ingestion	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Get medical attention if symptoms are severe or persist.
Skin contact	Take off immediately all contaminated clothing. Wash skin thoroughly with soap and water. Continue to rinse. Get medical attention if symptoms are severe or persist.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

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

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Ingestion	May be fatal if swallowed and enters airways.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.

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

Notes for the doctor	Treat symptomatically. Contact specialist immediately poison treatment if large quantities have been ingested or inhaled
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
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5.3. Advice for firefighters

Protective actions during firefighting	Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.
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6.2. Environmental precautions

Environmental precautions	Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. Provide adequate ventilation.
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6.4. Reference to other sections

Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Provide adequate ventilation.
Advice on general occupational hygiene	Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

7.2. Conditions for safe storage, including any incompatibilities

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Storage precautions

Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight. Store at temperatures between 18°C and 25°C.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

TRANS-ANETHOLE (CAS: 4180-23-8)

Ingredient comments

No exposure limits known for ingredient(s).

DNEL

Workers - Inhalation; Long term systemic effects: 10.57 mg/m³
Workers - Dermal; Long term systemic effects: 7.5 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 5.28 mg/m³
Consumer - Dermal; Long term systemic effects: 3.75 mg/kg/day

PNEC

Fresh water; 0.021 mg/l
marine water; 0.002 mg/l
STP; 0.972 mg/l
Sediment (Freshwater); 0.166 mg/kg
Sediment (Marinewater); 0.017 mg/kg
Soil; 0.097 mg/kg

(R)-P-MENTHA-1,8-DIENE (CAS: 5989-27-5)

DNEL

Workers - Inhalation; Long term systemic effects: 66.7 mg/m³
Workers - Dermal; Long term systemic effects: 9.5 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 16.6 mg/m³
Consumer - Dermal; Long term systemic effects: 4.8 mg/kg/day
Consumer - Oral; Long term systemic effects: 4.8 mg/kg/day

PNEC

Fresh water; 14 µg/l
marine water; 1.4 µg/l
STP; 1.8 mg/l
Sediment (Freshwater); 3.85 mg/kg
Sediment (Marinewater); 0.385 mg/kg
Soil; 0.763 mg/kg

p-MENTHA-1,4(8)-DIENE (CAS: 586-62-9)

DNEL

Workers - Inhalation; Long term systemic effects: 5.12 mg/m³
Workers - Dermal; Long term systemic effects: 1.45 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 1.26 mg/m³
Consumer - Dermal; Long term systemic effects: 0.73 mg/kg/day
Consumer - Oral; Long term systemic effects: 0.73 mg/kg/day

PNEC

Fresh water; 5.2 µg/l
marine water; 0.52 µg/l
STP; 3 mg/l
Sediment (Freshwater); 0.581 mg/kg
Sediment (Marinewater); 58.1 mg/kg
Soil; 113 µg/l

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EUCALYPTOL (CAS: 470-82-6)

DNEL	Workers - Dermal; Long term systemic effects: 2 mg/kg Workers - Inhalation; Long term systemic effects: 7.05 mg/kg Consumer - Dermal; Long term systemic effects: 1 mg/kg/day Consumer - Inhalation; Long term systemic effects: 1.74 mg/m³
PNEC	STP; 10 mg/l Soil; 0.2 mg/kg Fresh water; 0.057 mg/l marine water; 0.0057 mg/l Sediment (Freshwater); 0.06732 mg/kg Sediment (Marinewater); 0.00673 mg/kg

LINALOOL (CAS: 78-70-6)

Ingredient comments	No exposure limits known for ingredient(s).
DNEL	Industry - Dermal; Short term systemic effects: 5 mg/kg/day Industry - Inhalation; Short term systemic effects: 16.5 mg/m³ Industry - Dermal; Long term systemic effects: 2.5 mg/kg/day Industry - Inhalation; Long term systemic effects: 2.8 mg/m³ Consumer - Dermal; Short term systemic effects: 2.5 mg/kg/day Consumer - Inhalation; Short term systemic effects: 4.1 mg/m³ Consumer - Oral; Short term systemic effects: 1.2 mg/kg/day Consumer - Inhalation; Long term systemic effects: 0.7 mg/m³ Consumer - Oral; Long term systemic effects: 0.2 mg/kg/day Consumer - Dermal; Short term local effects: 15 mg/cm² Workers - Dermal; Long term local effects: 15 mg/cm² Consumer - Dermal; Long term local effects: 15 mg/cm²
PNEC	- Fresh water; 0.2 mg/l - marine water; 0.02 mg/l - Sediment (Freshwater); 2.22 mg/kg - Sediment (Marinewater); 0.222 mg/kg - Soil; 0.327 mg/kg - STP; > 10 mg/l

8.2. Exposure controls

Protective equipment



Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

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Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless. or Green. Light (or pale).
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	63°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	0.935 @ 20°C
Bulk density	No information available.
Solubility(ies)	No information available.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Refractive index	No information available.
Particle size	No information available.

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Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No test data specifically related to reactivity available for this product or its ingredients.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
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10.4. Conditions to avoid

Conditions to avoid	Avoid exposure to high temperatures or direct sunlight.
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10.5. Incompatible materials

Materials to avoid	Oxidising agents. Reducing agents.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	4,101.72
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Acute toxicity - dermal

ATE dermal (mg/kg)	30,726.26
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Acute toxicity - inhalation

ATE inhalation (vapours mg/l)	307.26
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Skin corrosion/irritation

Skin corrosion/irritation	Causes skin irritation.
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Serious eye damage/irritation

Serious eye damage/irritation	No information available.
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Respiratory sensitisation

Respiratory sensitisation	No information available.
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Skin sensitisation

Skin sensitisation	May cause an allergic skin reaction.
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Germ cell mutagenicity

Genotoxicity - in vitro	Suspected of causing genetic defects.
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Carcinogenicity

Carcinogenicity Suspected of causing cancer.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Reproductive toxicity - development No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion May be fatal if swallowed and enters airways. Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Eye contact May cause temporary eye irritation.

Toxicological information on ingredients.

TRANS-ANETHOLE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,000.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3000 mg/kg, Oral, Rat

ATE oral (mg/kg) 3,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 4,900.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 4900 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 4,900.0

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

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Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.
Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory system irritation.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact May cause sensitisation by skin contact.

Eye contact May cause temporary eye irritation.

(R)-P-MENTHA-1,8-DIENE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 4400 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 5000 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Animal data No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

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IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Inhalation May cause respiratory system irritation.

Ingestion Harmful: possible risk of irreversible effects if swallowed.

Skin contact Irritating to skin. May cause sensitisation by skin contact.

Eye contact May cause temporary eye irritation.

2-PINENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 500.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3700 mg/kg, Oral, Rat

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rat

Notes (dermal LD₅₀) LD₅₀ 5000 mg/kg, Dermal, Rat

ATE dermal (mg/kg) 5,000.0

Inhalation May cause respiratory system irritation.

Ingestion Harmful: may cause lung damage if swallowed.

Skin contact May cause sensitisation by skin contact.

Eye contact Irritating to eyes.

4-ALLYLANISOLE

Acute toxicity - oral

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ATE oral (mg/kg) 500.0

Acute toxicity - dermal

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

ATE inhalation (vapours
mg/l) 11.0

MYRCENE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 5000 mg/kg, Dermal, Rabbit

p-MENTHA-1,4(8)-DIENE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 3850 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.
Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

EUCALYPTOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀
mg/kg) 2,480.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2480 mg/kg, Oral, Rat

ATE oral (mg/kg) 2,480.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >5000 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Serious eye damage/irritation

Serious eye
damage/irritation No information available.

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Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Reproductive toxicity - development No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.

Skin contact May cause an allergic skin reaction.

Eye contact May cause temporary eye irritation.

PIN-2-(10) ENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 5000 mg/kg, Oral, Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 5000 mg/kg, Dermal, Rabbit

ORGANIC SWEET FENNEL OIL

ATE dermal (mg/kg) 5,000.0

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Inhalation Irritating to respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact Irritating to skin.

Eye contact Irritating to eyes.

p-MENTHA-1,5-DIENE

Inhalation May cause respiratory system irritation.

Ingestion Swallowing concentrated chemical may cause severe internal injury.

Skin contact Irritating to skin. May cause sensitisation by skin contact.

Eye contact Irritating to eyes.

PARA CYMENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,669.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3669 mg/kg, Oral, Rat

ATE oral (mg/kg) 3,669.0

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion May be fatal if swallowed and enters airways.

Skin contact Liquid may irritate skin. Repeated exposure may cause skin dryness or cracking.

Eye contact Vapour or spray in the eyes may cause irritation and smarting.

CAMPHERE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2500 mg/kg, Dermal, Rabbit

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Inhalation	May cause respiratory system irritation.
Ingestion	May cause stomach pain or vomiting.
Skin contact	Slightly irritating.
Eye contact	Irritating to eyes.

Z ANETHOLE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,110.0

Species Rat

ATE oral (mg/kg) 5,110.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 6,730.0

Species Rat

ATE dermal (mg/kg) 6,730.0

LINALOOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,790.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2790 mg/kg, Oral, Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,610.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 5610 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Slightly irritating. Rabbit

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction. - Rabbit: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Carcinogenicity

Carcinogenicity No information available.

ORGANIC SWEET FENNEL OIL

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 117 mg/kg, Oral, Rat NOAEL 250 mg/kg, Dermal, Rat

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory irritation.

Ingestion Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.

Skin contact Irritating to skin. May cause an allergic skin reaction.

Eye contact Causes eye irritation.

P-MENTH-1-EN-4-OL

Acute toxicity - oral

ATE oral (mg/kg) 500.0

ALPHA-TERPINENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,680.0

Species Rat

ATE oral (mg/kg) 1,680.0

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

TRANS-ANETHOLE

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

(R)-P-MENTHA-1,8-DIENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

2-PINENE

ORGANIC SWEET FENNEL OIL

Ecotoxicity The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

EUCALYPTOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

PIN-2-(10) ENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

p-MENTHA-1,5-DIENE

Ecotoxicity The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

PARA CYMENE

Ecotoxicity Toxic to aquatic life with long lasting effects.

CAMPHENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

LINALOOL

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity Toxic to aquatic life.

Ecological information on ingredients.

TRANS-ANETHOLE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 7 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 6.82 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hour: 9.57 mg/l, Algae

(R)-P-MENTHA-1,8-DIENE

Acute aquatic toxicity

LE(C)₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.8 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 69.6 mg/l, Daphnia magna

ORGANIC SWEET FENNEL OIL

Chronic aquatic toxicity

M factor (Chronic) 1

2-PINENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - aquatic invertebrates LC₅₀, 48 hour: 6.74 mg/l, Daphnia magna

Chronic aquatic toxicity

NOEC 0.01 < NOEC ≤ 0.1

Degradability Non-rapidly degradable

M factor (Chronic) 1

4-ALLYLANISOLE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Chronic aquatic toxicity

M factor (Chronic) 1

p-MENTHA-1,4(8)-DIENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.72 - 6.104 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hour: 5.184 mg/kg, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hour: 5.4 mg/l, Algae
Chronic, NOEC, 72 hour: 3.47 mg/l, Algae

Chronic aquatic toxicity

M factor (Chronic) 1

EUCALYPTOL

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 102 mg/l, Fish

PIN-2-(10) ENE

Acute aquatic toxicity

ORGANIC SWEET FENNEL OIL

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 2.2 mg/l, Daphnia magna
<u>Chronic aquatic toxicity</u>	
M factor (Chronic)	1

PARA CYMENE

Toxicity	Toxic to aquatic life.
<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hour: 48 ppm, Fish
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 6500 µg/l, Daphnia magna

CAMPHENE

<u>Acute aquatic toxicity</u>	
LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.1-1 mg/l, Fish
<u>Chronic aquatic toxicity</u>	
M factor (Chronic)	1

LINALOOL

Toxicity	Not considered toxic to fish.
<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: 27.8 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 59 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hours: 156.7 mg/l, Algae

ALPHA-TERPINENE

<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: 1.48 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1.85 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Ecological information on ingredients.

ORGANIC SWEET FENNEL OIL

TRANS-ANETHOLE

Persistence and degradability

There are no data on the degradability of this product.

(R)-P-MENTHA-1,8-DIENE

Persistence and degradability

Not readily biodegradable.

2-PINENE

Persistence and degradability

The product is readily biodegradable.

p-MENTHA-1,4(8)-DIENE

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation 72%: 28 day
OECD 301D

EUCALYPTOL

Persistence and degradability

The substance is readily biodegradable.

PIN-2-(10) ENE

Persistence and degradability

The product is readily biodegradable.

PARA CYMENE

Persistence and degradability

There are no data on the degradability of this product.

LINALOOL

Persistence and degradability

The product is readily biodegradable.

Biodegradation

The substance is readily biodegradable.
- Degradation (%) 64.2%: 28 days
OECD 301D

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

No information available.

Ecological information on ingredients.

TRANS-ANETHOLE

Bioaccumulative potential

No data available on bioaccumulation.

ORGANIC SWEET FENNEL OIL

Partition coefficient No information available.

(R)-P-MENTHA-1,8-DIENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.38

p-MENTHA-1,4(8)-DIENE

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.7

EUCALYPTOL

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient log Pow: 2.97

PARA CYMENE

Bioaccumulative potential No data available on bioaccumulation.

CAMPHENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.5

LINALOOL

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Kow: 2.7

12.4. Mobility in soil

Mobility No information available.

Ecological information on ingredients.

TRANS-ANETHOLE

Mobility Not determined.

(R)-P-MENTHA-1,8-DIENE

Mobility The product is insoluble in water.

2-PINENE

Mobility The product is insoluble in water.

EUCALYPTOL

Mobility The product is insoluble in water.

PIN-2-(10) ENE

ORGANIC SWEET FENNEL OIL

Mobility The product is insoluble in water.

p-MENTHA-1,5-DIENE

Mobility The product is insoluble in water.

PARA CYMENE

Mobility Not determined.

CAMPHENE

Mobility The product is insoluble in water.

LINALOOL

Mobility The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

Ecological information on ingredients.

TRANS-ANETHOLE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

(R)-P-MENTHA-1,8-DIENE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

EUCALYPTOL

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

PARA CYMENE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

LINALOOL

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

TRANS-ANETHOLE

Other adverse effects Not determined.

ORGANIC SWEET FENNEL OIL

(R)-P-MENTHA-1,8-DIENE

Other adverse effects Not determined.

EUCALYPTOL

Other adverse effects None known.

PARA CYMENE

Other adverse effects No information available.

LINALOOL

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Do not puncture or incinerate, even when empty. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General Wear protective clothing as described in Section 8 of this safety data sheet.

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, 2-PINENE)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, 2-PINENE)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, 2-PINENE)
Proper shipping name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, 2-PINENE)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9
IMDG class	9
ICAO class/division	9

ORGANIC SWEET FENNEL OIL

ADN class 9

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS	F-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(-)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
Restrictions (Annex XVII Regulation 1907/2006)	This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

Seveso Directive - Control of major accident hazards	E2
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15.2. Chemical safety assessment

ORGANIC SWEET FENNEL OIL

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Korea - KECI

Not listed.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

SECTION 16: Other information

ORGANIC SWEET FENNEL OIL

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

11/09/2021

Version number

1.000

Supersedes date

22/08/2018

SDS number

55447

ORGANIC SWEET FENNEL OIL

SDS status	Approved.
Hazard statements in full	H226 Flammable liquid and vapour. 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. H332 Harmful if inhaled. H341 Suspected of causing genetic defects. H351 Suspected of causing cancer. H361d Suspected of damaging the unborn child. 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.
Signature	Jitendra Panchal

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Exposure scenario Manufacturing and on-site use

Identification

Product name	TRIETHOXYOCTYLSILANE
REACH registration number	01-2119972313-39-XXXX
CAS number	2943-75-1
EC number	220-941-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Manufacturing and on-site use
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC1 Manufacture of the substance ERC2 Formulation into mixture
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 1700000 kg

Frequency and duration of use

Manufacturing and on-site use

Continuous release.
Emission days: 199 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving surface water flow: 3100000 m³/day
Local freshwater dilution factor: 900
Local marine water dilution factor: 1000

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Exhaust air scrubber.

Water Central biological waste water treatment Discharge to aquatic environment is restricted (see Section 4.2). No discharge of substance into waste water.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sewage sludge incineration. , or: Landfill.

Waste treatment All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

Daily amount per site: 17000 kg

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
Application duration: 60 minutes
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
Application duration: 60 minutes
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Application duration: 240 minutes

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm².
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Both hands.

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Manufacturing and on-site use

Technical protective measures Locate bulk storage outdoors. Drain down and flush system prior to equipment break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure a permit to work system is in place. Permit to work for maintenance work. Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained.

Risk management measures

Full-face mask (DIN EN 136)
Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.
Prolonged or repeated contact:
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental exposure Fresh water: Exposure 0.00011 mg/l, PNEC 0.0058 mg/l, RCR 0.018
Marine water: Exposure 0.000031 mg/l, PNEC 0.00058 mg/l, RCR 0.054
freshwater sediment: Exposure 0.0094 mg/kg, PNEC 0.51 mg/kg, RCR 0.019
marine sediment: Exposure 0.0022 mg/kg, PNEC 0.051 mg/kg, RCR 0.042
Soil: Exposure 0.009 mg/kg, PNEC 0.08 mg/kg, RCR 0.11

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker

Manufacturing and on-site use

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - dermal, long-term - systemic: Exposure 0.002 mg/kg/day, DNEL 9.1 mg/kg/day, RCR <0.001

Worker - inhalation, long-term - systemic: Exposure 0.081 mg/m³, DNEL 16 mg/m³, RCR 0.005

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008

Worker - inhalation, long-term - systemic: Exposure 1.6 mg/m³, DNEL 16 mg/m³, RCR 0.1

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.004

Worker - inhalation, long-term - systemic: Exposure 2.4 mg/m³, DNEL 16 mg/m³, RCR 0.15

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.004

Worker - inhalation, long-term - systemic: Exposure 1.2 mg/m³, DNEL 16 mg/m³, RCR 0.076

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - dermal, long-term - systemic: Exposure 0.034 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.004

Worker - inhalation, long-term - systemic: Exposure 4 mg/m³, DNEL 16 mg/m³, RCR 0.25

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users



Exposure scenario

Formulation of masonry treatment products

Identification

Product name	TRIETHOXYOCTYLSILANE
REACH registration number	01-2119972313-39-XXXX
CAS number	2943-75-1
EC number	220-941-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation of masonry treatment products
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation into mixture
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Formulation of masonry treatment products

Concentration details Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 357000 kg

Frequency and duration of use

Continuous release.

Emission days: 200 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 40
Local marine water dilution factor: 100

Risk management measures

STP type Municipal STP. , or: Onsite STP.

STP details Assumed onsite sewage treatment plant flow: 10000 m³/day
Assumed domestic sewage treatment plant flow: 10000 m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Exhaust air scrubber.

Water Central biological waste water treatment

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sewage sludge incineration. , or: Landfill.

Waste treatment All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

Daily amount per site: 1784 kg

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Application duration: 60 minutes

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Application duration: 240 minutes

Human factors not influenced by risk management

Formulation of masonry treatment products

Potentially exposed body parts

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm².

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Both hands.

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Locate bulk storage outdoors. Drain down and flush system prior to equipment break-in or maintenance.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure a permit to work system is in place. Permit to work for maintenance work. Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained.

Risk management measures

Wear suitable face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Assessment method Used EUSES model.

Environmental exposure Fresh water: Exposure 0.0047 mg/l, PNEC 0.0058 mg/l, RCR 0.8
Marine water: Exposure 0.00047 mg/l, PNEC 0.00058 mg/l, RCR 0.81
freshwater sediment: Exposure 0.017 mg/kg, PNEC 0.51 mg/kg, RCR 0.034
marine sediment: Exposure 0.0054 mg/kg, PNEC 0.051 mg/kg, RCR 0.11
Soil: Exposure 0.0023 mg/kg, PNEC 0.08 mg/kg, RCR 0.028

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker

Formulation of masonry treatment products

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - dermal, long-term - systemic: Exposure 0.003 mg/kg/day, DNEL 9.1 mg/kg/day, RCR <0.001

Worker - inhalation, long-term - systemic: Exposure 0.081 mg/m³, DNEL 16 mg/m³, RCR 0.005

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - dermal, long-term - systemic: Exposure 0.14 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.015

Worker - inhalation, long-term - systemic: Exposure 8.1 mg/m³, DNEL 16 mg/m³, RCR 0.5

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008

Worker - inhalation, long-term - systemic: Exposure 4.8 mg/m³, DNEL 16 mg/m³, RCR 0.3

PROC4 Chemical production where opportunity for exposure arises

Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008

Worker - inhalation, long-term - systemic: Exposure 4 mg/m³, DNEL 16 mg/m³, RCR 0.25

PROC5 Mixing or blending in batch processes

Worker - dermal, long-term - systemic: Exposure 0.14 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.015

Worker - inhalation, long-term - systemic: Exposure 4 mg/m³, DNEL 16 mg/m³, RCR 0.25

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - dermal, long-term - systemic: Exposure 0.14 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.015

Worker - inhalation, long-term - systemic: Exposure 4.8 mg/m³, DNEL 16 mg/m³, RCR 0.3

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008

Worker - inhalation, long-term - systemic: Exposure 2 mg/m³, DNEL 16 mg/m³, RCR 0.13

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008

Worker - inhalation, long-term - systemic: Exposure 4 mg/m³, DNEL 16 mg/m³, RCR 0.25

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users



Exposure scenario

Industrial use of masonry treatment products

Identification

Product name	TRIETHOXYOCTYLSILANE
REACH registration number	01-2119972313-39-XXXX
CAS number	2943-75-1
EC number	220-941-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of masonry treatment products
Main sector	SU3 Industrial uses
Sector of use	SU19 Building and construction work

Environment

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
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Worker

Process category	PROC7 Industrial spraying PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 48000 kg

Frequency and duration of use

Continuous release.
Emission days: 100 days/year

Industrial use of masonry treatment products

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 40 Local marine water dilution factor: 100
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Risk management measures

STP type	Municipal STP. , or: Onsite STP.
STP details	Assumed onsite sewage treatment plant flow: 10000 m ³ /day Assumed domestic sewage treatment plant flow: 10000 m ³ /day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Water	Central biological waste water treatment
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Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Sewage sludge incineration. , or: Landfill.
Waste treatment	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Daily amount per site: 480 kg

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Application duration: 60 minutes
PROC10 Roller application or brushing
Application duration: 240 minutes

Human factors not influenced by risk management

Potentially exposed body parts	PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm ² . PROC7 Industrial spraying PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing Both hands.
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Locate bulk storage outdoors. Drain down and flush system prior to equipment break-in or maintenance. Take precautionary measures against static discharge.
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained.
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Risk management measures

Industrial use of masonry treatment products

Use approved safety goggles or face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Assessment method	Used EUSES model.
Environmental exposure	Fresh water: Exposure 0.0025 mg/l, PNEC 0.0058 mg/l, RCR 0.43 Marine water: Exposure 0.00045 mg/l, PNEC 0.00058 mg/l, RCR 0.78 freshwater sediment: Exposure 0.023 mg/kg, PNEC 0.51 mg/kg, RCR 0.044 marine sediment: Exposure 0.0076 mg/kg, PNEC 0.051 mg/kg, RCR 0.15 Soil: Exposure 0.069 mg/kg, PNEC 0.08 mg/kg, RCR 0.85

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker
Exposure	PROC7 Industrial spraying Worker - dermal, long-term - systemic: Exposure 0.21 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.024 Worker - inhalation, long-term - systemic: Exposure 8.1 mg/m³, DNEL 16 mg/m³, RCR 0.5 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal, long-term - systemic: Exposure 0.069 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.008 Worker - inhalation, long-term - systemic: Exposure 2 mg/m³, DNEL 16 mg/m³, RCR 0.13 PROC10 Roller application or brushing Worker - dermal, long-term - systemic: Exposure 2.7 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.3 Worker - inhalation, long-term - systemic: Exposure 4.8 mg/m³, DNEL 16 mg/m³, RCR 0.3 PROC13 Treatment of articles by dipping and pouring. Worker - dermal, long-term - systemic: Exposure 0.14 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.015 Worker - inhalation, long-term - systemic: Exposure 8.1 mg/m³, DNEL 16 mg/m³, RCR 0.5

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users



Exposure scenario

Professional use of masonry treatment products

Identification

Product name	TRIETHOXYOCTYLSILANE
REACH registration number	01-2119972313-39-XXXX
CAS number	2943-75-1
EC number	220-941-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional use of masonry treatment products
Main sector	SU22 Professional uses
Sector of use	SU19 Building and construction work

Environment

Environmental release category	ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
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Worker

Process category	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 100 %.

Amounts used

Annual amount per site: 1000 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Professional use of masonry treatment products

Environmental factors not influenced by risk management measures

Dilution Receiving surface water flow: 18000 m³/day

Risk management measures

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Water Central biological waste water treatment

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Sewage sludge incineration. , or: Landfill.

Waste treatment All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

Daily amount per site: 2.7 kg

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm².
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC10 Roller application or brushing Both hands.
PROC11 Non industrial spraying Hands and forearms.

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Room size Indoor use. Assumes a maximum room volume of 100 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide adequate ventilation. , or: Ensure operation is undertaken outdoors.
Take precautionary measures against static discharge. Locate bulk storage outdoors.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures. Ensure control measures are regularly inspected and maintained.

Risk management measures

Use approved safety goggles or face shield.
Wear an impervious suit.
Wear suitable gloves tested to EN374.

3. Exposure estimation (Environment 1)

Professional use of masonry treatment products

Assessment method	Used EUSES model.
Environmental exposure	Fresh water: Exposure 0.0003 mg/l, PNEC 0.0058 mg/l, RCR 0.8 Marine water: Exposure 0.000029 mg/l, PNEC 0.00058 mg/l, RCR 0.05 freshwater sediment: Exposure 0.0054 mg/kg, PNEC 0.51 mg/kg, RCR 0.011 marine sediment: Exposure 0.00053 mg/kg, PNEC 0.051 mg/kg, RCR 0.01 Soil: Exposure 0.0028 mg/kg, PNEC 0.08 mg/kg, RCR 0.035

4. Guidance to check compliance with the exposure scenario (Environment 1)

ECHA guidance for downstream users

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker Dermal Stoffenmanager v4.0 Inhalation
Exposure	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal, long-term - systemic: Exposure 2.7 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.3 PROC11 Non industrial spraying Worker - dermal, long-term - systemic: Exposure 5.4 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.6 PROC10 Roller application or brushing Worker - dermal, long-term - systemic: Exposure 5.5 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.61 PROC13 Treatment of articles by dipping and pouring. Worker - dermal, long-term - systemic: Exposure 2.7 mg/kg/day, DNEL 9.1 mg/kg/day, RCR 0.3 PROC10 Roller application or brushing Indoor. Worker - inhalation, long-term - systemic: Exposure 1.5 mg/m³, DNEL 16 mg/m³, RCR 0.094 PROC11 Non industrial spraying Indoor. Worker - inhalation, long-term - systemic: Exposure 1.1 mg/m³, DNEL 16 mg/m³, RCR 0.069 PROC13 Treatment of articles by dipping and pouring. Indoor. Worker - inhalation, long-term - systemic: Exposure 1.5 mg/m³, DNEL 16 mg/m³, RCR 0.094 PROC10 Roller application or brushing Outdoor. Worker - inhalation, long-term - systemic: Exposure 0.5 mg/m³, DNEL 16 mg/m³, RCR 0.031 PROC11 Non industrial spraying Outdoor. Worker - inhalation, long-term - systemic: Exposure 0.37 mg/m³, DNEL 16 mg/m³, RCR 0.023 PROC13 Treatment of articles by dipping and pouring. Outdoor. Worker - inhalation, long-term - systemic: Exposure 0.5 mg/m³, DNEL 16 mg/m³, RCR 0.031

4. Guidance to check compliance with the exposure scenario (Health 1)

ECHA guidance for downstream users