

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

1.1. Product identifier

Product form	: Substance
Substance name	: Black spruce essential oil, Organic, Canada
EC-No.	: 294-420-3
CAS-No.	: 91722-19-9
Product code	: 10150
Type of product	: Essential oil
Product group	: Raw material

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

1.2.1. Relevant identified uses

Main use category	: Industrial use
Function or use category	: Cosmetics

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

SIRIUS
57 Chemin de la Métairie Haute
81580 CAMBONNET SUR LE SOR - France
T + 33 (0)5-32-09-11-72
contact@sirius-bio.com

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
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms (CLP)



GHS02

GHS07

GHS09

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P391 - Collect spillage.

Precautionary statements (CLP)

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2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Black spruce essential oil, Organic, Canada
CAS-No. : 91722-19-9
EC-No. : 294-420-3

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Camphene	(CAS-No.) 79-92-5 (EC-No.) 201-234-8	10 – 50	Flam. Sol. 2, H228 Eye Irrit. 2, H319 Aquatic Chronic 1, H410
Alpha pinene	(CAS-No.) 80-56-8 (EC-No.) 201-291-9 (REACH-no) 01-2119519223-49	10 – 25	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
Delta 3-carene	(CAS-No.) 13466-78-9 (EC-No.) 236-719-3	1 – 20	Skin Sens. 1, H317 Skin Irrit. 2, H315 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 1, H410 Aquatic Acute 1, H400 Acute Tox. 4 (Inhalation), H332
Beta Pinene	(CAS-No.) 127-91-3 (EC-No.) 204-872-5	1 – 10	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Limonene	(CAS-No.) 138-86-3 (EC-No.) 227-813-5 (EC Index-No.) 601-029-00-7 (REACH-no) 01-2119529223-47	1 – 10	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Myrcene	(CAS-No.) 123-35-3 (EC-No.) 204-622-5	1 – 10	Asp. Tox. 1, H304 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315
Borneol	(CAS-No.) 507-70-0 (EC-No.) 208-080-0	0.1 – 5	Skin Irrit. 2, H315 Flam. Sol. 1, H228 Aquatic Chronic 2, H411
Terpinolene	(CAS-No.) 586-62-9 (EC-No.) 209-578-0	0.1 – 5	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Skin Sens. 1B, H317
Cadinene	(CAS-No.) 29350-73-0 (EC-No.) 249-580-9	1 – 5	Asp. Tox. 1, H304
Alpha terpineol	(CAS-No.) 98-55-5 (EC-No.) 202-680-6	0.1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Beta Phellandrene	(CAS-No.) 555-10-2 (EC-No.) 209-081-9	0.1 – 5	Asp. Tox. 1, H304 Flam. Liq. 3, H226
Linalool *	(CAS-No.) 78-70-6 (EC-No.) 201-134-4 (EC Index-No.) 603-235-00-2 (REACH-no) 01-2119474016-42	< 5	Skin Sens. 1B, H317
Alpha Phellandrene	(CAS-No.) 99-83-2 (EC-No.) 202-792-5	0.1 – 1	Asp. Tox. 1, H304 Flam. Liq. 3, H226

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1,8 Cineole	(CAS-No.) 470-82-6 (EC-No.) 207-431-5	0.1 – 1	Flam. Liq. 3, H226 Skin Sens. 1B, H317
Terpinen-4-ol	(CAS-No.) 562-74-3 (EC-No.) 209-235-5	0.1 – 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Beta Caryophyllene	(CAS-No.) 87-44-5 (EC-No.) 201-746-1	0.1 – 1	Asp. Tox. 1, H304 Aquatic Chronic 4, H413 Skin Sens. 1B, H317
Alpha terpinene	(CAS-No.) 99-86-5 (EC-No.) 202-795-1	0.1 – 1	Asp. Tox. 1, H304 Acute Tox. 4 (Oral), H302 Aquatic Chronic 2, H411 Flam. Liq. 3, H226
Gamma terpinene	(CAS-No.) 99-85-4 (EC-No.) 202-794-6	0.1 – 1	Repr. 2, H361 Flam. Liq. 3, H226 Asp. Tox. 1, H304
Geranyl acetate	(CAS-No.) 105-87-3 (EC-No.) 203-341-5	0.1 – 1	Skin Sens. 1B, H317 Skin Irrit. 2, H315 Aquatic Chronic 3, H412
Paracymene	(CAS-No.) 99-87-6 (EC-No.) 202-796-7	0.1 – 1	Repr. 2, H361 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Sabinene	(CAS-No.) 3387-41-5 (EC-No.) 222-212-4	< 1	Acute Tox. 4 (Oral), H302
Menthyl acetate	(CAS-No.) 89-48-5 (EC-No.) 201-911-8	0.1 – 1	Aquatic Chronic 2, H411
Camphor	(CAS-No.) 76-22-2 (EC-No.) 200-945-0	< 1	Flam. Sol. 2, H228 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 STOT SE 2, H371
Citronellol *	(CAS-No.) 106-22-9 (EC-No.) 203-375-0 (REACH-no) 01-2119453995-23	< 1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Alpha campholenal	(CAS-No.) 4501-58-0 (EC-No.) 224-815-8	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Terpenyl acetate	(CAS-No.) 80-26-2 (EC-No.) 201-265-7	< 1	Aquatic Chronic 2, H411
Citronellyl acetate	(CAS-No.) 150-84-5 (EC-No.) 205-775-0	< 1	Aquatic Chronic 2, H411 Skin Irrit. 2, H315
Longifolene	(CAS-No.) 475-20-7 (EC-No.) 207-491-2	< 1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 Skin Sens. 1B, H317
Cis thujone	(CAS-No.) 546-80-5 (EC-No.) 208-912-2	0.1 – 1	Acute Tox. 4 (Oral), H302
Cis Beta Ocimene	(CAS-No.) 3338-55-4 (EC-No.) 222-081-3	0.1 – 1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315
Isolongifolene	(CAS-No.) 1135-66-6 (EC-No.) 214-494-2	< 0.1	Asp. Tox. 1, H304
Geraniol *	(CAS-No.) 106-24-1 (EC-No.) 203-377-1 (REACH-no) 01-2119552430-49	< 0.1	Skin Sens. 1B, H317 Skin Irrit. 2, H315 Eye Dam. 1, H318
benzaldehyde	(CAS-No.) 100-52-7 (EC-No.) 202-860-4 (EC Index-No.) 605-012-00-5	< 0.1	STOT SE 3, H335 Eye Irrit. 2, H319 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332
Linalyl acetate	(CAS-No.) 115-95-7 (EC-No.) 204-116-4	< 0.1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317

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Eugenol	(CAS-No.) 97-53-0 (EC-No.) 202-589-1	< 0.1	Eye Irrit. 2, H319 Skin Sens. 1B, H317
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Full text of H-statements: see section 16

3.2. Mixtures

Not established.

SECTION 4: First aid measures

4.1. Description of first aid measures

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	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

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.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
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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".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
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

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. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. 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.

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Camphor (76-22-2)

France - Occupational Exposure Limits

Local name	Camphre
VME (mg/m ³)	12 mg/m ³
VME (ppm)	2 ppm
Note (FR)	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



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	: Colourless to clear yellow.
Odour	: balsamic. Fresh. Softwood.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 46 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available

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Relative density	: 0.895 – 0.92
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

Refractive index	: 1.467 – 1.472
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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 toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

1,8 Cineole (470-82-6)

LD50 oral	2480 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
ATE CLP (oral)	2480 mg/kg bodyweight

Alpha campholenal (4501-58-0)

LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 oral	2500 mg/kg bodyweight

Alpha pinene (80-56-8)

LD50 oral	3700 mg/kg bodyweight
LD50 dermal	> 5000 mg/kg bodyweight
ATE CLP (oral)	3700 mg/kg bodyweight

Alpha terpinene (99-86-5)

LD50 oral	1680 mg/kg bodyweight
ATE CLP (oral)	500 mg/kg bodyweight

Alpha terpineol (98-55-5)

LD50 oral rat	4300 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2900 - 5700
LD50 oral	4300 mg/kg bodyweight

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LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LD50 dermal rabbit	> 3000 mg/kg OECD 402

benzaldehyde (100-52-7)

LD50 oral rat	≈ 1430 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 1,33 - 1,54
LD50 oral	1430 mg/kg bodyweight
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
LD50 dermal	2500 mg/kg bodyweight
LC50 inhalation rat (mg/l)	1 – 5 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)
LC50 inhalation rat (Dust/Mist - mg/l/4h)	1.5 mg/l/4h
ATE CLP (oral)	1430 mg/kg bodyweight
ATE CLP (dermal)	2500 mg/kg bodyweight
ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (dust,mist)	1.5 mg/l/4h

Beta Pinene (127-91-3)

LD50 oral rat	300 – 2000 mg/kg OCDE 423
LD50 dermal rat	> 2000 mg/kg
ATE CLP (oral)	300 mg/kg bodyweight

Borneol (507-70-0)

LD50 oral	2500 mg/kg bodyweight
ATE CLP (oral)	2500 mg/kg bodyweight

Camphene (79-92-5)

LD50 oral rat	> 2000 mg/kg bodyweight Animal: other:rat and mouse
LD50 oral	> 5000 mg/kg bodyweight Animal: mouse
LD50 dermal rat	> 2500 mg/kg bodyweight Animal:
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
LC50 inhalation rat (mg/l)	> 25 mg/l air Animal:

Camphor (76-22-2)

LD50 oral	1500 mg/kg bodyweight
LC50 inhalation rat (mg/l)	0.5 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
ATE CLP (oral)	500 mg/kg bodyweight
ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (dust,mist)	1.5 mg/l/4h

Cis Beta Ocimene (3338-55-4)

LD50 oral	5000 mg/kg bodyweight
ATE CLP (oral)	5000 mg/kg bodyweight

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Cis thujone (546-80-5)

LD50 oral	500 mg/kg bodyweight
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Citronellol * (106-22-9)

LD50 oral	3450 mg/kg bodyweight
LD50 dermal	2650 mg/kg bodyweight

Delta 3-carene (13466-78-9)

LD50 oral	4800 mg/kg bodyweight
LC50 inhalation rat (Dust/Mist - mg/l/4h)	1.5 mg/l/4h
ATE CLP (oral)	4800 mg/kg bodyweight
ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (dust,mist)	1.5 mg/l/4h

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)

Gamma terpinene (99-85-4)

LD50 oral	3850 mg/kg bodyweight
ATE CLP (oral)	3850 mg/kg bodyweight

Geraniol * (106-24-1)

LD50 oral rat	3600 mg/kg bodyweight Animal: rat, 95% CL: 2840 - 4570
LD50 oral	2100 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit
LD50 dermal	> 5000 mg/kg bodyweight
ATE CLP (oral)	2100 mg/kg bodyweight

Limonene (138-86-3)

LD50 oral	4400 mg/kg bodyweight
LD50 dermal	> 2000 mg/kg bodyweight
ATE CLP (oral)	4400 mg/kg bodyweight

Linalool * (78-70-6)

LD50 oral rat	2790 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2440 - 3180
LD50 oral	2790 mg/kg bodyweight
LD50 dermal rabbit	5610 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 3578 - 8374
LD50 dermal	5610 mg/kg bodyweight
ATE CLP (oral)	2790 mg/kg bodyweight
ATE CLP (dermal)	5610 mg/kg bodyweight

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Paracymene (99-87-6)

LD50 oral	4750 mg/kg bodyweight
ATE CLP (oral)	4750 mg/kg bodyweight

Sabinene (3387-41-5)

ATE CLP (oral)	500 mg/kg bodyweight
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Terpinen-4-ol (562-74-3)

ATE CLP (oral)	500 mg/kg bodyweight
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Terpinolene (586-62-9)

LD50 oral	3775 mg/kg bodyweight
LD50 dermal rabbit	> 4300 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE CLP (oral)	3775 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Geraniol * (106-24-1)

NOAEL (chronic, oral, animal/male, 2 years)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)
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Reproductive toxicity	: Not classified
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Alpha terpineol (98-55-5)

NOAEL (animal/male, F0/P)	≥ 750 mg/kg OECD 422
NOAEL (animal/female, F0/P)	≥ 750 mg/kg OECD 422

Terpinolene (586-62-9)

NOAEL (animal/male, F0/P)	294.6 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, F0/P)	161.5 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	: Not classified
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STOT-repeated exposure	: Not classified
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1,8 Cineole (470-82-6)

NOAEL (oral, rat, 90 days)	600 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:japanese Ministry of Economy Trade and Industry Guideline for 28 day repeat oral dose toxicity study., Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents), Guideline: EPA OPPTS 870.3150 (90-Day Oral Toxicity in Nonrodents)
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Alpha terpineol (98-55-5)

NOAEL (oral, rat, 90 days)	≥ 314 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
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benzaldehyde (100-52-7)

LOAEL (oral, rat, 90 days)	300 mg/kg bodyweight Animal: other:rat and mouse
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Camphor (76-22-2)

NOAEL (dermal, rat/rabbit, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: other:Food and Drug Administration (FDA) Good Laboratory Practice Regulations for Nonclinical Studies (GLP Guidelines)
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Citronellol * (106-22-9)

NOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat, Guideline: other:Specifications for the Conduct of Studies to Evaluate the Toxic and Carcinogenic Potential of Chemical, Biological, and Physical Agents in Laboratory Animals for the National Toxicology Program (NTP)
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Eugenol (97-53-0)

NOAEL (subchronic, oral, animal/male, 90 days)	≥ 900 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)
NOAEL (subchronic, oral, animal/female, 90 days)	450 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)

Geraniol * (106-24-1)

NOAEL (dermal, rat/rabbit, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: other:OECD Guideline 421 (Reproduction/Developmental Toxicity Screening test), Guideline: other:EPA OPPTS 870.3550 (Reproduction/Developmental Toxicity Screening Test)
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Linalool * (78-70-6)

LOAEL (dermal, rat/rabbit, 90 days)	Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
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Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.
Not rapidly degradable	

1,8 Cineole (470-82-6)

LC50 fish 1	57 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 Daphnia 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)

Alpha pinene (80-56-8)

LC50 fish 1	0.28 mg/l
EC50 other aquatic organisms 1	1.44 mg/l waterflea

Alpha terpineol (98-55-5)

LC50 fish 1	70 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
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EC50 Daphnia 1	73 mg/l Test organisms (species): Daphnia magna
EC50 72h algae (1)	≈ 68 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h algae (2)	≈ 17 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

benzaldehyde (100-52-7)

NOEC chronic fish	0.12 mg/l Test organisms (species): Pimephales promelas Duration: '7 d'
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Camphene (79-92-5)

LC50 fish 1	0.72 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 Daphnia 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)

Camphor (76-22-2)

LC50 fish 1	35 – 50 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
LC50 fish 2	110 mg/l Test organisms (species): Pimephales promelas
EC50 96h algae (1)	6.951 mg/l Test organisms (species):

Citronellol * (106-22-9)

LC50 fish 1	10 mg/l
EC50 Daphnia 1	17.48 mg/l Test organisms (species): Daphnia magna
EC50 other aquatic organisms 1	17.48 mg/l waterflea
EC50 other aquatic organisms 2	2.38 mg/l
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 Daphnia 1	1.05 mg/l Test organisms (species): Daphnia magna

Geraniol * (106-24-1)

LC50 fish 1	≈ 22 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 Daphnia 1	10.8 mg/l Test organisms (species): Daphnia magna
EC50 other aquatic organisms 1	10.8 mg/l waterflea
EC50 other aquatic organisms 2	13.1 mg/l
EC50 72h algae (1)	13.1 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

Limonene (138-86-3)

LC50 fish 1	0.72 mg/l
EC50 other aquatic organisms 1	0.36 mg/l waterflea

Linalool * (78-70-6)

LC50 fish 1	27.8 mg/l
EC50 Daphnia 1	59 mg/l Test organisms (species): Daphnia magna
EC50 other aquatic organisms 1	20 mg/l waterflea
EC50 other aquatic organisms 2	88.3 mg/l

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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)

Terpinolene (586-62-9)

LC50 fish 1	0.805 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 Daphnia 1	0.634 mg/l Test organisms (species): Daphnia magna
EC50 72h algae (1)	0.692 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h algae (2)	0.302 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Alpha pinene (80-56-8)

Partition coefficient n-octanol/water (Log Pow)	4.32
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Citronellol * (106-22-9)

Partition coefficient n-octanol/water (Log Pow)	3.1
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Geraniol * (106-24-1)

Partition coefficient n-octanol/water (Log Pow)	3.5
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Limonene (138-86-3)

Partition coefficient n-octanol/water (Log Pow)	4.38
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Linalool * (78-70-6)

Partition coefficient n-octanol/water (Log Pow)	2.84
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 1272	UN 1272	UN 1272	UN 1272	UN 1272
14.2. UN proper shipping name				
PINE OIL	PINE OIL	Pine oil	PINE OIL	PINE OIL

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Transport document description

UN 1272 PINE OIL, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS	UN 1272 PINE OIL, 3, III, MARINE POLLUTANT/ENVIRONME NTALLY HAZARDOUS (57°C c.c.)	UN 1272 Pine oil, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1272 PINE OIL, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1272 PINE OIL, 3, III, ENVIRONMENTALLY HAZARDOUS
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14.3. Transport hazard class(es)

3	3	3	3	3

14.4. Packing group

III	III	III	III	III
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14.5. Environmental hazards

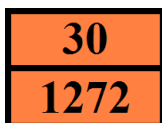
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
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No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: F1
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T2
Portable tank and bulk container special provisions (ADR)	: TP1
Tank code (ADR)	: LGBF
Vehicle for tank carriage	: FL
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Operation (ADR)	: S2
Hazard identification number (Kemler No.)	: 30
Orange plates	:



Tunnel restriction code (ADR)	: D/E
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Transport by sea

Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T2
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-E
Stowage category (IMDG)	: A
Flash point (IMDG)	: 57°C to 60°C c.c.
Properties and observations (IMDG)	: Volatile oils with characteristic odours. Flashpoint: 57°C to 60°C c.c. Immiscible with water.

Air transport

PCA Excepted quantities (IATA)	: E1
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PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 366
CAO max net quantity (IATA)	: 220L
ERG code (IATA)	: 3L

Inland waterway transport

Classification code (ADN)	: F1
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: F1
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T2
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 30

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

Not established.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Black spruce essential oil, Organic, Canada is not on the REACH Candidate List

Black spruce essential oil, Organic, Canada is not on the REACH Annex XIV List

Black spruce essential oil, Organic, Canada is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Black spruce essential oil, Organic, Canada is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available

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
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level

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DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
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
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), 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
Aquatic Chronic 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
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
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
STOT SE 2	Specific target organ toxicity — Single exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour.
H228	Flammable solid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.

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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.
H413	May cause long lasting harmful effects to aquatic life.

SDS EU (REACH Annex II)

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.