



# CLOVE LEAVES OIL

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Date of issue: 12/15/2014 Revision date: 9/25/2019 Version: 1.3

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

#### 1.1. Product identifier

Product form : Substance  
Substance name : CLOVE LEAVES OIL  
EC-No. : 284-638-7  
CAS-No. : 84961-50-2  
Product code : GIRHE02  
Synonyms : N° CAS : 8000-34-8 / 8015-97-2  
Product group : Essential oil

#### 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  
Industrial/Professional use spec : Industrial  
For professional use only

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

EXAFLOR  
5 rue des Pyrénées  
P.O. Box CP 30561  
94653 Rungis Cedex - France  
T +33 (0)1 41 73 23 10 - F +33 (0)1 41 73 23 19  
[exaflor@orange.fr](mailto:exaflor@orange.fr) - [www.exaflor.fr](http://www.exaflor.fr)

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
	ORFILA (FRANCE)		+33 1 45 42 59 59	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Skin corrosion/irritation, Category 2 H315  
Serious eye damage/eye irritation, Category 2 H319  
Skin sensitisation, Category 1 H317  
Germ cell mutagenicity, Category 2 H341  
Carcinogenicity, Category 2 H351  
Hazardous to the aquatic environment — Chronic Hazard, Category 2 H411  
Full text of H statements : see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H341 - Suspected of causing genetic defects.  
H351 - Suspected of causing cancer.  
H411 - Toxic to aquatic life with long lasting effects.

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### Precautionary statements (CLP)

: P202 - Do not handle until all safety precautions have been read and understood.  
P261 - Avoid breathing fume, gas, dust, vapours.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, eye protection.  
P302+P352 - IF ON SKIN: Wash with plenty of water & soap.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - IF exposed or concerned: Get medical advice/attention.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P391 - Collect spillage.  
P405 - Store locked up.  
P501 - Dispose of contents/container to contents/container to agreed companies according to national regulations.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : CLOVE LEAVES OIL  
CAS-No. : 84961-50-2  
EC-No. : 284-638-7

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
EUGENOL	(CAS-No.) 97-53-0 (EC-No.) 202-589-1	80 - 92	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
BETA-CARYOPHYLLENE	(CAS-No.) 87-44-5 (EC-No.) 201-746-1	4 - 17	Not classified
EUGENYL ACETATE	(CAS-No.) 93-28-7 (EC-No.) 202-235-6	0.2 - 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315
METHYL EUGENOL	(CAS-No.) 93-15-2 (EC-No.) 202-223-0	0.5 - 1	Acute Tox. 4 (Oral), H302 Muta. 2, H341 Carc. 2, H351 Aquatic Chronic 2, H411
ISOEUGENOL	(CAS-No.) 97-54-1 (EC-No.) 202-590-7	0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Suspected of causing cancer.

First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Wash with plenty of water/.... Wash contaminated clothing before reuse. If skin irritation occurs: Immediately call a POISON CENTER/doctor, Get immediate medical advice/attention. Specific treatment (see Read label before use. on this label). If skin irritation or rash occurs: Immediately call a POISON CENTER/doctor, Get immediate 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. Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects : Suspected of causing genetic defects.

Symptoms/effects after inhalation : May cause an allergic skin reaction.

Symptoms/effects after skin contact : Causes skin irritation.

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Symptoms/effects after eye contact : Causes serious eye irritation.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing smokes, vapours. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Maximum storage period : 36 months Shelf life to guarantee the quality and properties of the product; After this period, it is recommended to control organoleptic and physicochemical properties before using the raw material.

Storage temperature : 18 (5 - 25) °C

Storage area : Keep in the dark. Store in a well-ventilated place. Store away from heat.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Personal protective equipment:

Avoid all unnecessary exposure.

#### Hand protection:

Wear protective gloves.

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### Eye protection:

Chemical goggles or safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

Wear appropriate mask

### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid mobile. Clear. slightly. Viscous.
Colour	: Yellow. Brown.
Odour	: spicy. typical of the main component.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 112 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.02 - 1.06
Solubility	: Solubility in ethanol. Insoluble in 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	: 1.525 - 1.545
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## 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

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### CLOVE LEAVES OIL (84961-50-2)

LD50 oral rat	2650 mg/kg
LD50 dermal rabbit	4900 mg/kg

### EUGENOL (97-53-0)

LD50 oral rat	1930 mg/kg
LC50 inhalation rat (ppm)	> 384 ppmv/4h

### EUGENYL ACETATE (93-28-7)

LD50 oral rat	1670 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

### METHYL EUGENOL (93-15-2)

LD50 oral rat	810 mg/kg
LD50 dermal rabbit	> 2025
LC50 inhalation rat (mg/l)	> 4800 mg/kg

### ISOEUGENOL (97-54-1)

LD50 oral rat	1560 mg/kg
LD50 oral	1410 mg/kg Guinea pig
LD50 dermal rabbit	1900 mg/kg

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	: Suspected of causing genetic defects.
Carcinogenicity	: Suspected of causing cancer.

### EUGENOL (97-53-0)

IARC group	3 - Not classifiable
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### METHYL EUGENOL (93-15-2)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
STOT-single exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met
STOT-repeated exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water	: Toxic to aquatic life with long lasting effects.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

### EUGENOL (97-53-0)

LC50 fish 1	13 mg/l Brachydanio rerio (zebra-fish) - 96h
EC50 Daphnia 1	1.13 mg/l EC50 48h - Daphnia magna [mg/l]

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### METHYL EUGENOL (93-15-2)

LC50 fish 1	6 mg/l Oncorhynchus mykiss (Rainbow trout) - 96h
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### 12.2. Persistence and degradability

#### CLOVE LEAVES OIL (84961-50-2)

Persistence and degradability	May cause long-term adverse effects in the environment.
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### EUGENOL (97-53-0)

Persistence and degradability	Readily biodegradable. May cause long-term adverse effects in the environment.
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### BETA-CARYOPHYLLENE (87-44-5)

Persistence and degradability	Not established.
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### EUGENYL ACETATE (93-28-7)

Persistence and degradability	Not established.
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### METHYL EUGENOL (93-15-2)

Persistence and degradability	May cause long-term adverse effects in the environment.
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### ISOEUGENOL (97-54-1)

Persistence and degradability	Not established.
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### 12.3. Bioaccumulative potential

#### CLOVE LEAVES OIL (84961-50-2)

Bioaccumulative potential	Not established.
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### EUGENOL (97-53-0)

Log Pow	2.7
Log Kow	2.27
Bioaccumulative potential	Not established.

### BETA-CARYOPHYLLENE (87-44-5)

Bioaccumulative potential	Not established.
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### EUGENYL ACETATE (93-28-7)

Log Kow	3.06
Bioaccumulative potential	Not established.

### METHYL EUGENOL (93-15-2)

Log Kow	3.03
Bioaccumulative potential	Not established.

### ISOEUGENOL (97-54-1)

Log Pow	2.1
Log Kow	3.04
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

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### 12.6. Other adverse effects

Additional information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to contents/container to agreed companies according to national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

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

### 14.1. UN number

UN-No. (ADR) : Not applicable  
UN-No. (IMDG) : Not applicable  
UN-No. (IATA) : Not applicable  
UN-No. (ADN) : Not applicable  
UN-No. (RID) : Not applicable

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable  
Proper Shipping Name (ADN) : Not applicable  
Proper Shipping Name (RID) : Not applicable

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : Not applicable  
:

#### IMDG

Transport hazard class(es) (IMDG) : Not applicable  
:

#### IATA

Transport hazard class(es) (IATA) : Not applicable  
:

#### ADN

Transport hazard class(es) (ADN) : Not applicable  
:

#### RID

Transport hazard class(es) (RID) : Not applicable  
:

### 14.4. Packing group

Packing group (ADR) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable  
Packing group (ADN) : Not applicable  
Packing group (RID) : Not applicable

### 14.5. Environmental hazards

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

### 14.6. Special precautions for user

#### Overland transport

No data available

#### Transport by sea

No data available

#### Air transport

No data available

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### Inland waterway transport

No data available

### Rail transport

No data available

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

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on	Entry title or description
3.	CLOVE LEAVES OIL ; EUGENOL ; EUGENYL ACETATE ; METHYL EUGENOL ; ISOEUGENOL	Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008

CLOVE LEAVES OIL is not on the REACH Candidate List

CLOVE LEAVES OIL is not on the REACH Annex XIV List

CLOVE LEAVES OIL 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.

CLOVE LEAVES OIL 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

##### Germany

Reference to AwSV

: Water hazard class (WGK) 2, Significantly hazardous to water (Classification according to AwSV; ID No. 2905)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV

: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Data sources : 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

#### Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Muta. 2	Germ cell mutagenicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.



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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.*