

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

1.1. Product identifier

Product form : Substance
Substance name : CLOVE OIL, LEAVES
EC-No. : 284-638-7
CAS-No. : 84961-50-2
Product code : 9075

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

1.2.2. Uses advised against

Restrictions on use : Ultimate consumer use

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier

FROMA ESANS ve AROMA SANAYI TICARET A.S
Orhangazi Mah.İsıso San. Sit. 5.Yol Sok.No:23-25-27
34538 Esenyurt-Istanbul-TR
kalite@froma.com.tr

Further information obtainable from: Quality Assurance&Quality Control Department

1.4. Emergency telephone number

Emergency number : +90 212 623 02 90
(Mon - Fri, 08:30 - 18:30 GMT+3)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation, Category 2 H319
Skin sensitisation, Category 1 H317
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May cause an allergic skin reaction. Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) :

: Warning

Hazard statements (CLP) :

: H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.

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Precautionary statements (CLP) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Clove Leaf Oil
CAS-No. : 84961-50-2
EC-No. : 284-638-7

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Clove leaf oil	(CAS-No.) 84961-50-2 (EC-No.) 284-638-7	100	
Eugenol	(CAS-No.) 97-53-0 (EC-No.) 202-589-1	≥ 80	Eye Irrit. 2, H319 Skin Sens. 1B, H317
beta-Caryophyllene	(CAS-No.) 87-44-5 (EC-No.) 201-746-1	≥ 10 – < 25	Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
Caryophyllene oxide	(CAS-No.) 1139-30-6 (EC-No.) 214-519-7	≥ 0.1 – < 1	Aquatic Chronic 2, H411
Eugenyl acetate	(CAS-No.) 93-28-7 (EC-No.) 202-235-6	≥ 0.1 – < 1	Acute Tox. 4 (Oral), H302
4-Allylphenol	(CAS-No.) 501-92-8	≥ 0.1 – < 1	Skin Sens. 1B, H317 Muta. 2, H341 Carc. 2, H351 Acute Tox. 4 (Oral), H302
Eugenyl methyl ether	(CAS-No.) 93-15-2 (EC-No.) 202-223-0	≥ 0.1 – < 1	Acute Tox. 4 (Oral), H302 Muta. 2, H341 Carc. 2, H351
Isoeugenol	(CAS-No.) 97-54-1 (EC-No.) 202-590-7 (EC Index-No.) 604-094-00-X	≥ 0.1 – < 1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 STOT SE 3, H335
Linalool	(CAS-No.) 78-70-6 (EC-No.) 201-134-4 (EC Index-No.) 603-235-00-2	≥ 0.1 – < 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
Methyl salicylate	(CAS-No.) 119-36-8 (EC-No.) 204-317-7	≥ 0.1 – < 1	Acute Tox. 4 (Oral), H302 Repr. 2, H361

Full text of H-statements: see section 16

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3.2. Mixtures

Not applicable

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. If the victim is unconscious : Place the affected person in the recovery position. Allow affected person to breathe fresh air. If experiencing respiratory symptoms: Call a poison center or a doctor.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. Wash off with soap and plenty of water. Rinse skin with water/shower.
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. In case of contact, immediately rinse eyes with plenty of water for at least 15 minutes.
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	: 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	: Dry powder. Carbon dioxide. For large fire: Water spray. Foam.
Unsuitable extinguishing media	: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. fume.
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5.3. Advice for firefighters

Firefighting instructions	: Move containers away from the fire area if this can be done without risk. Keep upwind. Use water spray or fog for cooling exposed containers.
Protection during firefighting	: Wear fire/flame resistant/retardant clothing. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Evacuate unnecessary personnel.
Other information	: Do not allow run-off from fire fighting to enter drains or water courses.

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. 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".
Emergency procedures	: Evacuate area.

6.2. Environmental precautions

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

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6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Ensure adequate ventilation.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear personal protective equipment. Prevent aerosol formation or splashes.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in original container. Keep container tightly closed.

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

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment:

Gloves. Protective goggles.

Hand protection:

Chemically resistant protective gloves. Consult supplier for specific recommendations. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Breakthrough time : refer to the recommendations of the supplier

Eye protection:

tightly fitting safety goggles

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

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Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment.

Consumer exposure controls:

Do not eat, drink or smoke during use. Take off immediately all contaminated clothing. Always wash hands after handling the product. Avoid contact with skin and eyes.

Other information:

Keep away from food, drink and animal feedingstuffs.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: No data available
Odour	: No data available
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	: > 93 °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
Relative density	: No data available
Solubility	: insoluble in water.
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

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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

None under recommended storage and handling conditions (see section 7).

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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

Clove leaf oil (84961-50-2)

LD50 oral	2650 mg/kg bodyweight
LD50 dermal	2500 mg/kg bodyweight

4-Allylphenol (501-92-8)

LD50 oral	1230 mg/kg bodyweight
ATE CLP (oral)	1230 mg/kg bodyweight

Eugenol (97-53-0)

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

Eugenyl acetate (93-28-7)

LD50 oral	1670 mg/kg bodyweight
ATE CLP (oral)	1670 mg/kg bodyweight

Eugenyl methyl ether (93-15-2)

LD50 oral	1180 mg/kg bodyweight
ATE CLP (oral)	1180 mg/kg bodyweight

Isoeugenol (97-54-1)

LD50 oral	1500 mg/kg bodyweight
LD50 dermal	1912 mg/kg bodyweight
ATE CLP (oral)	1500 mg/kg bodyweight
ATE CLP (dermal)	1912 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

Linalool (78-70-6)

LD50 oral	2790 mg/kg bodyweight
ATE CLP (oral)	2790 mg/kg bodyweight

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Methyl salicylate (119-36-8)

LD50 oral	890 mg/kg bodyweight
ATE CLP (oral)	890 mg/kg bodyweight

Skin corrosion/irritation	: Not classified
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
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
Not rapidly degradable	
Additional information	: Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Avoid release to the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

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

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Prevent entry to sewers and public waters.
Product/Packaging disposal recommendations	: Do not dispose of with domestic waste.

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SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

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

No REACH Annex XVII restrictions

Clove leaf oil is not on the REACH Candidate List

Clove leaf oil is not on the REACH Annex XIV List

Clove leaf 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 leaf 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

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
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
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

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. Supplier's safety documents. ECHA (European Chemicals Agency).

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
Asp. Tox. 1	Aspiration hazard, Category 1

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Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Muta. 2	Germ cell mutagenicity, 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. 1A	Skin sensitisation, category 1A
Skin Sens. 1B	Skin sensitisation, category 1B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
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.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

SDS EU (REACH Annex II)

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