



SAFETY DATA SHEET

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

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

1.1. Product identifier

Product name	COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE
Product number	64150
Synonyms; trade names	CLOVE BUD OIL
CAS number	84961-50-2
EC number	284-638-7

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

Identified uses	Cosmetics Flavouring
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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.	64150

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Asp. Tox. 1 - H304
Environmental hazards	Not Classified

2.2. Label elements

EC number	284-638-7
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Hazard pictograms



COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

Signal word	Danger
Hazard statements	H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H304 May be fatal if swallowed and enters airways.
Precautionary statements	P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 Dispose of contents/ container in accordance with national regulations.
Contains	EUGENOL, CARYOPHYLLENE

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

EUGENOL	60-100%
CAS number: 97-53-0	EC number: 202-589-1
Classification Eye Irrit. 2 - H319 Skin Sens. 1 - H317	
CARYOPHYLLENE	10-30%
CAS number: 87-44-5	EC number: 201-746-1
	REACH registration number: 01-2120745237-53-XXXX
Classification Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Chronic 4 - H413	
4 ALLYL 2 METHOXYPHENYL ACETATE	5-10%
CAS number: 93-28-7	EC number: 202-235-6
Classification Acute Tox. 4 - H302	

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

Product name	COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE
CAS number	84961-50-2
EC number	284-638-7
Composition comments	The data shown are in accordance with the latest EC Directives.

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
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 plenty of water to drink. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water.
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 any discomfort continues.

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

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

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

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.
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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

Specific hazards	Oxides of the following substances: Carbon.
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5.3. Advice for firefighters

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage.
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6.2. Environmental precautions

Environmental precautions	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	No smoking, sparks, flames or other sources of ignition near spillage. 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. For waste disposal, see Section 13.
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6.4. Reference to other sections

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep container tightly closed, in a cool, well ventilated place.

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

Ingredient comments No exposure limits known for ingredient(s).

EUGENOL (CAS: 97-53-0)

DNEL	Workers - Inhalation; Long term systemic effects: 21.2 mg/m ³
	Workers - Dermal; Long term systemic effects: 6 mg/kg/day
	Consumer - Inhalation; Long term systemic effects: 5.22 mg/m ³
	Consumer - Dermal; Long term systemic effects: 3 mg/kg/day
	Consumer - Oral; Long term systemic effects: 3 mg/kg/day
PNEC	Fresh water; 1.13 µg/l
	marine water; 0.113 µg/l
	Sediment (Freshwater); 0.081 mg/kg
	Sediment (Marinewater); 0.008 mg/kg
	Soil; 0.015 mg/kg

8.2. Exposure controls

Protective equipment



Eye/face protection

The following protection should be worn: Chemical splash goggles. 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 rubber apron. Wear rubber footwear.

Respiratory protection

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

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

Appearance	Liquid.
Colour	Yellowish. Brownish.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Initial boiling point and range	No information available.
Flash point	> 150°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 density	No information available.
Relative density	1.030 - 1.063
Bulk density	No information available.
Solubility(ies)	Insoluble in water.
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Particle size	No information available.
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	There are no known reactivity hazards associated with this product.
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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

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

Possibility of hazardous reactions Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Strong alkalis. Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of the following substances: Carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 32,745.1

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

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.

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 May cause respiratory system irritation.

Ingestion May be fatal if swallowed and enters airways.

Skin contact May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

Toxicological information on ingredients.

EUGENOL

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,300.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2300 mg/kg, Oral, Rat

ATE oral (mg/kg) 2,300.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 2,580.0

Species Rat

Notes (inhalation LC₅₀) LC₅₀ 2580 mg/l, Dust/Mist, Inhalation, Rat

ATE inhalation (dusts/mists mg/l) 2,580.0

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Skin sensitisation

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

CARYOPHYLLENE

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

4 ALLYL 2 METHOXYPHENYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,670.0

Species Rat

ATE oral (mg/kg) 1,670.0

SECTION 12: Ecological information

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.

Ecological information on ingredients.

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CARYOPHYLLENE

Ecotoxicity May cause long lasting harmful effects to aquatic life.

12.1. Toxicity

Toxicity Not considered toxic to fish.

Ecological information on ingredients.

EUGENOL

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hour: 13 mg/l, Fish
OECD 203

Acute toxicity - aquatic invertebrates EC₅₀, 48 hour: 1.3 mg/l, Daphnia magna
OECD 202

Acute toxicity - aquatic plants IC₅₀, 72 hours: 24 mg/l, Algae
NOEC, 72 hours: 23 mg/l, Algae

CARYOPHYLLENE

Toxicity May cause long lasting harmful effects to aquatic life.

12.2. Persistence and degradability

Persistence and degradability The substance is readily biodegradable.

Ecological information on ingredients.

EUGENOL

Persistence and degradability The product is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Ecological information on ingredients.

CARYOPHYLLENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 6.23

12.4. Mobility in soil

Mobility 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.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

13.1. Waste treatment methods

General information	When handling waste, the safety precautions applying to handling of the product should be considered. Do not puncture or incinerate, even when empty.
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	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
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14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

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

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

SECTION 16: Other information

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.
	LC ₅₀ : Lethal Concentration to 50 % of a test population.
	LD ₅₀ : 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.
	EC ₅₀ : 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	25/07/2022
Version number	1.000

COMPLEX SUBSTANCE OF 4,11,11-TRIMETHYL-8-METHYLENEBICYCLO[7.2.0]UNDEC-4-ENE AND 4-ALLYL-2-METHOXYPHENOL AND 4-ALLYL-2-METHOXYPHENYL ACETATE

SDS number	64150
SDS status	Approved.
Hazard statements in full	H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H413 May cause long lasting harmful effects to aquatic life.
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.