

According to Regulation (EC) No 1907/2006

# Eugenol

Version number: 1  
Issued: 2023-10-12



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

### 1.1. Product identifier

**Trade name**

Eugenol

**CAS number**

97-53-0

**EC number**

202-589-1

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

**Relevant identified uses**

Research and development.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

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

**Supplier**

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,

DL1 4XX Darlington

United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

Kevin Banks

**Email address**

+44 (0) 7769276927

### 1.4. Emergency telephone number

**Poison center/Additional emergency number**

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Skin irritation, hazard category 2  
Eye irritation, hazard category 2  
Skin sensitisation, hazard category 1, sub-category 1B  
Aspiration hazard, hazard category 1

#### Hazard statements

H304, H315, H317, H319

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.

#### Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.  
P233 Keep container tightly closed.  
P260 Do not breathe dust/fumes/gas/mist/vapours/spray.  
P262 Do not get in eyes, on skin, or on clothing.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
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.  
P332 + P313 If skin irritation occurs: 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.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P403 Store in a well-ventilated place.  
P405 Store locked up.  
P501 Dispose of contents/container to local regulations.

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## 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Eugenol	97-53-0 202-589-1 - -	100%	Asp. Tox. 1, Skin Irrit. 2, Skin Sens. 1B, Eye Irrit. 2	H304, H315, H317, H319 - -	-

#### Molecular weight

164.20

#### Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

#### Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

#### Skin contact

IF ON SKIN: Wash with plenty of water. Continue to rinse for at least 15 minutes and seek medical attention. Get medical advice/attention if you feel unwell.

#### Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

#### Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

#### Information for doctors

First aiders/ medical personnel need to protect themselves.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

### Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

### Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation.

### Eye contact

Single exposure may cause the following adverse effects: Severe irritation.

### Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

#### Unsuitable extinguishing media

No specific fire fighting procedure given.

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

Specific hazards: Combustible.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO).

Vapours are heavier than air and may travel along the floor and in the bottom of containers.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## SECTION 6: Accidental release measures

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

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection, see section 8.

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## 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

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

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

## 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Preventive handling precautions

For precautions see section 2.2. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation.

#### General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

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

Store at ambient temperature. Store in a dry place. Store in a closed container.

### 7.3. Specific end use(s)

No specific usage precautions noted.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No data available

### 8.2. Exposure controls

#### Personal Protective Equipment Symbols



#### Eye / face protection

Wear eye protection.

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## **Hand protection**

Wear protective gloves. Recommended gloves: Butyl rubber.  
Glove Thickness: 0.7mm  
Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

## **Other skin protection**

Wash skin thoroughly after handling.

## **Respiratory protection**

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

## **Environmental exposure controls**

Avoid discharge into drains.

## **SECTION 9: Physical and chemical properties**

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

#### **Physical state**

Liquid

#### **Colour**

Colourless.

#### **Odour**

Strong.

#### **Melting point / freezing point**

-7.5 °C

#### **Boiling point or initial boiling point and boiling range**

248 °C

#### **Flammability**

No data available

#### **Lower and upper explosion limit**

No data available

#### **Flash point**

No data available

#### **Auto-ignition temperature**

No data available

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## Decomposition temperature

No data available

## pH

No data available

## Kinematic viscosity

No data available

## Solubility

No data available

## Partition coefficient n-octanol/water

No data available

## Vapour pressure

No data available

## Density and/or relative density

1.065 g/cm<sup>3</sup>

## Relative vapour density

No data available

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Forms explosive mixtures with air on intense heating.

### 10.2. Chemical stability

Stable under the prescribed storage conditions.

### 10.3. Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidising agents.

### 10.4. Conditions to avoid

Air sensitive. Light sensitive.

strong heating

### 10.5. Incompatible materials

Strong oxidising agents.

### 10.6. Hazardous decomposition products

See section 5.

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## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
Eugenol 97-53-0 / 202-589-1	LD50	>2.6 mg/l	Inhalation.	4 hours	Rat
Eugenol 97-53-0 / 202-589-1	LD50	>2000 mg/kg	Oral	-	Rat

#### Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
Eugenol 97-53-0 / 202-589-1	No skin irritation.	4 hours	Rabbit

#### Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species
Eugenol 97-53-0 / 202-589-1	Irritating to eyes	Rabbit

#### Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
Eugenol 97-53-0 / 202-589-1	Positive.	Mouse	Local Lymph Node Assay

#### Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Exposure route	Metabolic activation / Exposure	Species	Method / Guideline
Eugenol 97-53-0 / 202-589-1	Negative.	-	with and without metabolic activation	Salmonella typhimurium	Ames test
Eugenol 97-53-0 / 202-589-1	Negative.	-	-	rat hepatocytes	unscheduled DNA synthesis assay



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Product / Substance name CAS / EC no.	Result	Exposure route	Metabolic activation / Exposure	Species	Method / Guideline
Eugenol 97-53-0 / 202-589-1	Negative.	Oral	-	Rat	in vivo Micronucleus test
Eugenol 97-53-0 / 202-589-1	Negative.	Oral	-	Rat	unscheduled DNA synthesis assay

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**11.2. Information on other hazards****Endocrine disrupting properties**

This product does not contain any known or suspected endocrine disruptors.

**SECTION 12: Ecological information****12.1. Toxicity****Acute fish toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Eugenol 97-53-0 / 202-589-1	LC50	13 mg/l	96 hours	Brachydanio rerio (Zebra Fish)

**Acute algae toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Eugenol 97-53-0 / 202-589-1	EC50	24 mg/l	72 hours	Desmodesmus subspicatus (green algae)

**Acute crustacean toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Eugenol 97-53-0 / 202-589-1	EC50	1.13 mg/l	48 hours	Daphnia magna

**12.2. Persistence and degradability****Persistence and degradability**

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Product / Substance name CAS / EC no.	Type of test	Duration	Result	Degradation
Eugenol 97-53-0 / 202-589-1	aerobic	28 days	82%	The product is readily biodegradable.

## 12.3. Bioaccumulative potential

No data available

## 12.4. Mobility in soil

No data available

## 12.5. Results of PBT and vPvB assessment

No data available

## 12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

## 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

### 14.1. UN number

Not applicable

### 14.2. UN proper shipping name

Not applicable

### 14.3. Transport hazard class(es)

Not applicable

### 14.4. Packing group

Not applicable

### 14.5. Environmental hazards

Not applicable

### 14.6. Special precautions for user

Not applicable

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## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

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

#### EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National regulations

No data available

### 15.2. Chemical safety assessment

No data available

## SECTION 16: Other information

#### Phrase meaning

Skin Irrit. 2 - Skin irritation, hazard category 2

Eye Irrit. 2 - Eye irritation, hazard category 2

Skin Sens. 1B - Skin sensitisation, hazard category 1, sub-category 1B

Asp. Tox. 1 - Aspiration hazard, hazard category 1

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.