



EUGENOL

GHS Safety Data Sheet

Version No:2.0

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

EUGENOL

OTHER NAMES

C10-H12-O2, CH3OC6H3(CH2CH=CH2)OH, "phenol, 4-allyl-2-methoxy-", "phenol, 4-allyl-2-methoxy-", "4-allylcatechol-2-methyl ether", "4-allylcatechol-2-methyl ether", 4-allyl-1-hydroxy-2-methoxybenzene, 4-allyl-1-hydroxy-2-methoxybenzene, "carophyllic acid", 1-hydroxy-2-methoxy-4-allylbenzene, 1-hydroxy-2-methoxy-4-allylbenzene, 4-hydroxy-3-methoxyallylbenzene, 4-hydroxy-3-methoxyallylbenzene, 1-hydroxy-2-methoxy-4-prop-2-enylbenzene, 1-hydroxy-2-methoxy-4-prop-2-enylbenzene, 2-methoxy-4-allylphenol, 2-methoxy-4-allylphenol, 2-methoxy-1-hydroxy-4-allylbenzene, 2-methoxy-1-hydroxy-4-allylbenzene, 2-methoxy-4-prop-2-enylphenol, 2-methoxy-4-prop-2-enylphenol, 2-methoxy-4(2-propenyl)phenol, 2-methoxy-4(2-propenyl)phenol, "phenol, 2-methoxy-4-(2-propenyl)-", "phenol, 2-methoxy-4-(2-propenyl)-"

PRODUCT USE

Isolated from cloves.

Eugenol is employed in dentistry as a flavouring agent, and a mild rubefacient in dentrifices, as an obtundent for hypersensitive dentine, caries, and mixed with zinc oxide, as a temporary anodyne dental filling. Isoeugenol, used in perfumery for its carnation-clove odour, for the manufacture of vanillin and as a flavouring agent is obtained by heating eugenol with potassium hydroxide. Insect attractant.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,

MUMBAI- 400030.INDIA.

technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS

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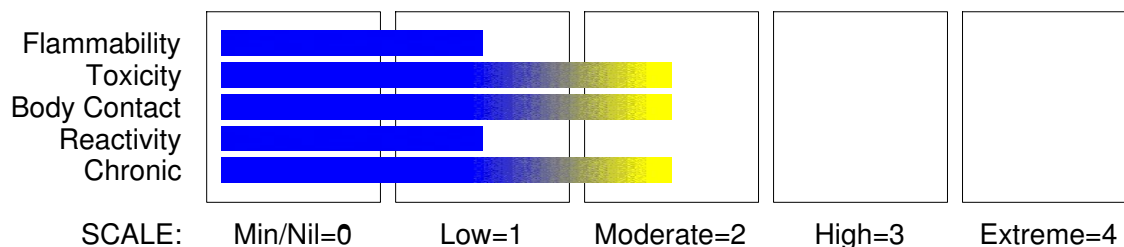
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4
Eye Irritation Category 2B
Respiratory Irritation Category 3
Respiratory Sensitizer Category 1
Skin Corrosion/Irritation Category 2
Skin Sensitizer Category 1



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H335 H302 H315 H320 H334 H317

May cause respiratory irritation

Harmful if swallowed

Causes skin irritation

Causes eye irritation

May cause allergic or asthmatic symptoms or breathing difficulties if inhaled

May cause allergic skin reaction

PRECAUTIONARY STATEMENTS

Prevention

Wash thoroughly after handling.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Contaminated clothing should not be allowed out of the workplace.

In case of inadequate ventilation wear respiratory protection.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

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Section 2 - HAZARDS IDENTIFICATION

Response

If skin irritation or rash occurs, seek medical advice/attention.
If skin irritation occurs, seek medical advice/attention.
If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
If eye irritation persists, get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Remove/Take off immediately all contaminated clothing
Specific treatment: refer to Label or MSDS.
Wash/Decontaminate removed clothing before reuse.
Wash contaminated clothing before reuse.
IF ON SKIN: Gently wash with plenty of soap and water.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
eugenol	97-53-0	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.
· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
· Observe the patient carefully.
· Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
· Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
· Seek medical advice.

EYE

If this product comes in contact with the eyes:
· Wash out immediately with fresh running water.
· Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
· If pain persists or recurs seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

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Section 4 - FIRST AID MEASURES

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

In acute poisonings by essential oils the stomach should be emptied by aspiration and lavage. Give a saline purgative such as sodium sulfate (30 g in 250 ml water) unless catharsis is already present. Demulcent drinks may also be given. Large volumes of fluid should be given provided renal function is adequate. [MARTINDALE: The Extra Pharmacopoeia, 28th Ed.].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

FIRE INCOMPATIBILITY

Avoid mixing with strong oxidisers as ignition may result.

Personal Protective Equipment

Breathing apparatus.

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Section 5 - FIRE FIGHTING MEASURES

Gas tight chemical resistant suit.
Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

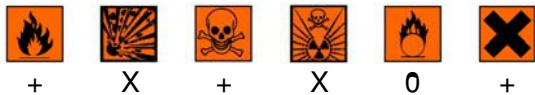
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

MAJOR SPILLS

Minor hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.

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Section 7 - HANDLING AND STORAGE

- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

Glass container or Plastic container.

- Metal can or drum
 - Packaging as recommended by manufacturer.
 - Check all containers are clearly labelled and free from leaks.
- Packs of 200 millilitres or less require a child-resistant closure.

STORAGE INCOMPATIBILITY

Segregate from strong oxidisers.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- eugenol: CAS:97- 53- 0

MATERIAL DATA

No exposure limits set by NOHSC or ACGIH.

Estimated acceptable daily intake of eugenol; up to 2.5 milligram per kilogram body weight. Eugenol was not considered to have carcinogenic potential.

Twenty-sixth Report of the Joint FAO/WHO Expert Committee on Food Additives
Tech. Rep. Ser. Wld Hlth Org. No. 683, 1982.

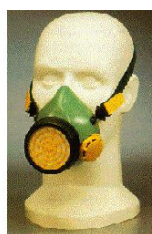
Class A fragrance - common cosmetic and primary sensitiser (Nakayama 1998).

PERSONAL PROTECTION

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION



EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

- Nitrile gloves or Neoprene gloves or Polyethylene gloves.
- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear.

OTHER

- Overalls.
- Barrier cream
- Eyewash unit.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS P	-
1000	50	-	A- AUS P
5000	50	Airline *	-
5000	100	-	A- 2 P
10000	100	-	A- 3 P
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult
your
Occupational Health and Safety Advisor.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless to yellow liquid with odour of clove and spicy pungent taste; does not mix with water. Mixes with alcohol, chloroform, ether, fixed oils and glacial acetic acid. Soluble in aqueous sodium hydroxide.

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.

Molecular Weight: 164.22
Melting Range (°C): - 12 - - 10
Solubility in water (g/L): Immiscible
pH (1% solution): Not applicable
Volatile Component (%vol): Not available
Relative Vapour Density (air=1): >1
Lower Explosive Limit (%): Not available
Autoignition Temp (°C): Not available
State: Liquid

Boiling Range (°C): 254
Specific Gravity (water=1): 1.067
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not available
Evaporation Rate: Not available
Flash Point (°C): 110.00
Upper Explosive Limit (%): Not available
Decomposition Temp (°C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable.
 - Hazardous polymerisation will not occur.
-

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Ingestion of eugenol and eugenol-containing oils may produce gastroenteritis. Systemic toxicity is similar but less than that of phenol, perhaps because of its relatively insolubility. Aqueous emulsions by mouth induce vomiting in man and dog and promote gastric secretion of mucin.

Poisoned rats exhibited paresis of hind legs and jaw with eventual prostration and coma.

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EUGENOL

Section 11 - TOXICOLOGICAL INFORMATION

Death is believed to have been due to peripheral vascular collapse. Surviving rats showed haematuria (blood in the urine),

Taken internally the essential oils exert a mild irritant effect on the mucous membranes of the mouth and digestive tract which induces a feeling of warmth and increases salivation.

Excessive oral doses irritate the gastro-intestinal tract and may cause nausea, vomiting and diarrhoea. Occasional irritation of the urinary tract and aggravation of pre-existing inflammatory conditions have been reported. Other effects include dysuria, haematuria, unconsciousness and shallow respiration. Complications arising from ingestion of volatile oils include anuria, pulmonary oedema, and bronchial pneumonia.

Central nervous system depression may lead to stupor and possible respiratory failure whilst central system stimulation may lead to excitement and convulsions. Pathologic findings include renal degeneration and intense congestion and oedema in the lungs, brain and gastric mucosa. Excretion takes place through the lungs, skin and kidneys. Most essential oils are reported to be abortifacient but abortions cannot be induced at safe doses. Some phenol derivatives may produce mild to severe damage within the gastrointestinal tract. Absorption may result in profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis (following the formation of methaemoglobin), hyperactivity, stupor, falling blood pressure, hypernea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema followed by pneumonia. Respiratory failure and kidney damage may follow. Severe phenol ingestions cause hypotension, coma, ventricular dysrhythmias, seizures and white coagulative chemical burns.

Phenol does not uncouple oxidative phosphorylation like dinitrophenol and pentachlorophenol and thus does not cause a heat exhaustion-like syndrome. Phenolic groups with ortho and para positions free from substitution are reactive; this is because the ortho and para positions on the aromatic ring are highly activated by the phenolic hydroxyl group and are therefore readily substituted.

EYE

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Some phenol derivatives may produce mild to severe eye irritation with redness, pain and blurred vision. Permanent eye injury may occur; recovery may also be complete or partial.

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

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Section 11 - TOXICOLOGICAL INFORMATION

Eugenol produces local anaesthesia and is a local antiseptic. Contact dermatitis has been produced in dental surgeons during exposure in an occupational setting.

When applied to intact skin essential oils have an irritant and rubefacient action, causing first a sensation of warmth and smarting followed by mild local anesthesia. They have been used as counter-irritants and cutaneous stimulants in the treatment of chronic inflammatory conditions and to relieve neuralgia and rheumatic pain. Care should be taken to avoid blistering. These oils may also produce sensitisation.

Phenol and some of its derivatives may produce mild to severe skin irritation on repeated or prolonged contact, producing second and third degree chemical burns. Rapid cutaneous absorption may lead to systemic toxicity affecting the cardiovascular and central nervous system. Absorption through the skin may result in profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis (following the formation of methaemoglobin), hyperactivity, stupor, falling blood pressure, hyperpnoea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema followed by pneumonia. Respiratory failure and kidney damage may follow.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

INHALED

Inhalation may produce health damage*.

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Not normally a hazard due to non-volatile nature of product.

Inhalation hazard is increased at higher temperatures.

Inhalation of essential oil volatiles may produce dizziness, rapid, shallow breathing, tachycardia, bronchial irritation and unconsciousness or convulsions. Complications include anuria, pulmonary oedema and bronchial pneumonia.

Pulmonary absorption may lead to systemic toxicity affecting the cardiovascular and central nervous system. Inhalation of phenol and some of its derivatives may produce profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis, hyperactivity, stupor, falling blood pressure, hyperpnoea, abdominal pain, haemolysis, convulsions, coma and pulmonary oedema with pneumonia. Respiratory failure and kidney damage may follow. Phenols may exhibit local anaesthetic properties and, in general, are central nervous system depressants at high concentrations. The dihydroxy derivatives act as simple phenols but their effects are largely limited to local irritation. Trihydroxy derivatives may reduce the oxygen content of blood at sufficient exposure levels. Methyl phenols (cresols) typically do not pose significant inhalation hazards due to relatively low vapour pressures and objectionable odours. Substituted phenols produce similar effects to phenol although such effects may only be evident at high levels of exposure.

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Section 11 - TOXICOLOGICAL INFORMATION

Alkyl substitution tends to increase toxicity.

Intolerance to perfumes, by inhalation, may occur if the perfume contains a sensitising principal. Symptoms may vary from general illness, coughing, phlegm, wheezing, chest -tightness, headache, exertional dyspnoea, acute respiratory illness, hayfever, and other respiratory diseases (including asthma). Perfumes can induce hyper-reactivity of the respiratory tract without producing an IgE-mediated allergy or demonstrable respiratory obstruction. This was shown by placebo-controlled challenges of nine patients to "perfume mix". The same patients were also subject to perfume provocation, with or without a carbon filter mask, to ascertain whether breathing through a filter with active carbon would prevent symptoms. The patients breathed through the mouth, during the provocations, as a nose clamp was used to prevent nasal inhalation. The patient's earlier symptoms were verified; breathing through the carbon filter had no protective effect. The symptoms were not transmitted via the olfactory nerve but they may have been induced by trigeminal reflex via the respiratory tract or by the eyes.

Cases of occupational asthma induced by perfume substances such as isoamyl acetate, limonene, cinnamaldehyde and benzaldehyde, tend to give persistent symptoms even though the exposure is below occupational exposure limits.

Inhalation intolerance has also been produced in animals. The emissions of five fragrance products, for one hour, produced various combinations of sensory irritation, pulmonary irritation, decreases in expiratory airflow velocity as well as alterations of the functional observational battery indicative of neurotoxicity in mice. Neurotoxicity was found to be more severe after mice were repeatedly exposed to the fragrance products, being four brands of cologne and one brand of toilet water.

CHRONIC HEALTH EFFECTS

On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.

Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.

There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

Principal routes of exposure are usually by skin contact and inhalation of vapour from heated material.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 1930 mg/kg

IRRITATION

Skin (human) 40 mg/24h - Mild

Skin (man): 16 mg/48h - Moderate

Skin (rabbit): 100 mg/24h- SEVERE

Equivocal tumorigen by RTECS criteria

The substance is classified by IARC as Group 3:

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Section 11 - TOXICOLOGICAL INFORMATION

NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

Section 12 - ECOLOGICAL INFORMATION

No data for eugenol.

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,
IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

eugenol (CAS: 97-53-0) is found on the following regulatory lists;
International Agency for Research on Cancer (IARC) Carcinogens

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
eugenol	97- 53- 0	Xn; R22 Mut3; R40 R43

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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