

化 学 品 安 全 技 术 说 明 书

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MSDS标题

L-LIMONENE MSDS报告

产品标题

(S)-1-甲基-4-(1-甲基乙烯基)环己烯

CAS号

5989-54-8

化学品及企业标识

PRODUCT NAME

L-LIMONENE

NFPA

Flammability	2
Toxicity	2
Body Contact	2
Reactivity	2
Chronic	2
SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4	

PRODUCT USE

Flavouring, fragrance and perfume materials; solvent, wetting agent, resin manufacture.
Regeant

SYNONYMS

C10H16, S-(-)-limonene, S-(-)-limonene, (-)-S-limonene, (-)-S-limonene, "l-p-mentha-1, 8-diene", "l-p-mentha-1, 8-diene", "p-mentha-1, 8-diene", "p-mentha-1, 8-diene", "terpene hydrocarbon", "1, 8, (9)- menthadiene", "cyclohexene, 1-methyl-4-(1-methylethenyl)-, (S)-", "cyclohexene, 1-methyl-4-(1-methylethenyl)-, (S)-"

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Explosive when dry.

Contact with combustible material may cause fire.

May form explosive peroxides.

Irritating to skin.

May cause SENSITIZATION by skin contact.

HARMFUL - May cause lung damage if swallowed.

Flammable.

Vapors may cause dizziness or suffocation.

Very toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733). Accidental ingestion of the material may be damaging to the health of the individual. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

EYE

Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN

The material may cause moderate inflammation of the skin either following

direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

Inhalation may produce health damage*. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation hazard is increased at higher temperatures. Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

CHRONIC HEALTH EFFECTS

Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. In the presence of air, a number of common flavour and fragrance chemicals can form peroxides surprisingly fast. Antioxidants can in most cases minimise the oxidation. Fragrance terpenes are generally easily oxidised in air. Non-oxidised limonene, linalool and caryophyllene turned out to be very weak sensitizers, however after oxidation limonene hydroperoxide and linalool hydroperoxide are strong sensitizers. Of the patients tested 2.6% showed positive reaction to oxidised limonene, 1.3% to oxidised linalool, 1.1% to linalool hydroperoxide, 0.5% to oxidised caryophyllene, while testing with caryophyllene oxide and oxidised myrcene resulted in few positive patch tests. 2/3 of the patients reacting positive to oxidised terpenes had fragrance related contact allergy and/or positive history for adverse reactions to fragrances. As well as the hydroperoxides produced by linalol, limonene and delta-3-carene other oxidation and resinification effects progressively causes other fairly major changes in essential oil quality over time. Autoxidation of fragrance terpenes contributes greatly to fragrance allergy, which emphasizes the need of testing with compounds that patients are actually exposed to and not only with the ingredients originally applied in commercial formulations. d-Limonene may cause damage to and growths in the kidney. These growths can progress to cancer. Peroxidisable terpenes and terpenoids should only be

used when the level of peroxides is kept to the lowest practicable level, for instance by adding antioxidants at the time of production. Such products should have a peroxide value of less than 10 millimoles peroxide per liter. This requirement is based on the published literature mentioning sensitising properties when containing peroxides. Sensitization may result in allergic dermatitis responses including rash, itching, hives or swelling of extremities.

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