

# SAFETY DATA SHEET

**PRODUCT NAME:** D-LIMONENE 99%

Issue Date: 31 October 2025

## SECTION 1 IDENTIFICATION

**Product Name:** D-Limonene  
**Other Names:** Limonene-D; Orange oil, terpenes; Orange, sweet, extract; Sweet orange, peel, tincture; Terpene Hydrocarbons NOS; Terpenes and terpenoids, orange oil  
**Product Code:** ZDLIMO  
**Uses:** Used to formulate cleaners and as flavour and fragrance ingredient.  
**Supplier:** HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton  
Phone: 07 974 4971 Web: [www.hamchem.nz](http://www.hamchem.nz) Email: [info@hamchem.nz](mailto:info@hamchem.nz)

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

## SECTION 2 HAZARD IDENTIFICATION



### GHS Classifications

Flammable Liquid – Category 3  
Aspiration hazard – Category 1  
Skin corrosion/irritation – Category 2  
Serious eye damage/eye irritation – Category 2  
Skin Sensitiser – Category 1  
Acute aquatic toxicity – Category 1  
Hazardous to soil organisms  
Hazardous to the Aquatic Environment (Acute & Chronic) – Category 1

**Signal Word: DANGER**

### Hazard statements

H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways  
H315 Causes skin irritation  
H319 Cause serious eye irritation  
H410 Very toxic to aquatic life with long lasting effects.  
Hazardous to the soil organisms.

### Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges  
P261 Avoid breathing mist/vapours/spray.

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P264 Wash face, hands and any exposed skin thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/clothing and eye/face protection.

### Response

IF ON **SKIN** (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

IF IN **EYES**: Rinse cautiously with water for at least 15 minutes. Remove any contact lenses Continue rinsing. If eye irritation persists: Get medical advice.

IF **SWALLOWED**: Immediately call a POISON CENTER (0800 764 766) or doctor.

IF **INHALED**: remove to fresh air. Seek medical attention if recovery is not rapid.

Immediately call a POISON CENTER (0800 764 766) or doctor.

In **EMERGENCY**: Ring 111 the ask for ambulance for medical help or fire brigade for major spills or fires.

In case of fire: Use CO<sub>2</sub>, dry powder or foam. Use alcohol-resistant foam to extinguish.

Collect spillage.

### Storage

Store in a secure, well-ventilated place. Keep cool.

### Disposal

Dispose of contents/container to approved waste facility in accordance with local regulations.

## SECTION 3

### COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
D-Limonene (Terpene Hydrocarbons)	5989-27-5	>94

## SECTION 4

### FIRST AID MEASURES

**If swallowed:** DO NOT INDUCE VOMITING (to avoid aspiration). Rinse mouth with water. For small amounts give milk of magnesia or a glass or two of water or milk. For large quantities, get medical attention.

**If on skin:** If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with soap and running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

**If inhaled:** Remove victim from exposure to fresh air - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm and at rest until fully recovered. Seek medical advice if effects persist.

**If in eyes:** If in eyes, wash out immediately with water, flushing continuously for at least 15 minutes with fresh running water.

Ensure irrigation under eyelids by occasionally lifting upper and lower lids. In all cases of eye contamination, it is a sensible precaution to seek medical advice.

**Note to Physician:** Treat symptomatically. Delayed pulmonary oedema may result.

## SECTION 5

## FIRE FIGHTING MEASURES

## Hazchem Code 3Y

**General Measures:** Flame-proof equipment is necessary in all areas where this chemical is being used. Nearby equipment must be earthed. Move fire exposed containers from fire area if it can be done without risk.

**Flammability Conditions:** Product is a flammable liquid. May form flammable vapour mixtures with air.

**Extinguishing Media:** Foam. Dry Chemical Powder. BCF (where regulations permit). Carbon Dioxide.

**Fire and Explosion Hazard:** Combustible. Vapours heavier than air. Formation of explosive mixtures possible with air. Keep away from sources of ignition.

**Hazardous Products of Combustion:** Burning generates, CO, CO<sub>2</sub> and smoke. It is not an oxygen donor. Incompatibility with strong oxidizing agents.

**Special Fire Fighting Instructions:** Do NOT allow firefighting water to reach waterways, drains or sewers. Store firefighting water for treatment. Personal Protective Equipment Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

<b>Flash Point:</b>	43 - 49 °C Closed Cup
<b>Lower Explosion Limit:</b>	0.7 %
<b>Upper Explosion Limit:</b>	6.1 %
<b>Auto Ignition Temperature:</b>	237°C
<b>Hazchem Code:</b>	3Y

## SECTION 6

## ACCIDENTAL RELEASE MEASURES

**General Response:** Procedure Shut off all possible sources of ignition and do not smoke. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilled. Use clean, non-sparking tools and equipment.

**Clean Up Procedures:** Small spills can be wiped up; rags or other combustible material wet or soaked in limonene may autoxidise, generating heat and igniting spontaneously. Use absorbent (soil, sand or other inert material) for larger spills. When saturated collect material, transfer to suitable, labelled, dry chemical-waste containers and dispose of promptly as hazardous waste.

**Containment:** Stop leak if safe to do so. Isolate the area.

**Decontamination:** Soap (detergent) and Water.

**Environmental Precautionary Measures:** Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.

**Evacuation Criteria:** Evacuate all unnecessary personnel.

**Personal Precautionary Measures:** Personnel involved in the clean-up should wear full protective clothing as listed in Exposure Controls & Personal Protection section of this SDS.

## SECTION 7

## HANDLING &amp; STORAGE

**Handling:** Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure.

**Storage:** Citrus Terpene can be stored at ambient temperature. Store the product tightly closed, protected from light, in a dry area and away from heat, flame and strong oxidizing agents. Ensure adequate air circulation and fume extraction in storage and working area avoiding the risk of spontaneous combustion.

**Container:** Store in original packaging as approved by manufacturer.

## SECTION 8

## EXPOSURE CONTROLS &amp; PERSONAL PROTECTION

**General:** Citrus Terpene – 8h - TWA = 30 ppm (AIHA Standard)

**Exposure Limits:** No Data Available

**Engineering Measures:** A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Vapour heavier than air – prevent concentration in hollows and sumps. Do NOT enter confined spaces where vapour may have collected.

**Personal Protection Equipment:** RESPIRATOR: Use with local exhaust ventilation or while wearing organic vapour respirator. (AS/NZS 1715/1716). EYES: Chemical goggles to prevent splashing in the eyes (AS/NZS 1336/1337). HANDS: Elbow length impervious gloves (AS/NZS 2161). CLOTHING: Chemical-resistant coveralls, splash apron and safety footwear (AS/NZS 3765/2210).

**Work Hygienic Practices:** Change contaminated clothing. Application of skin-protective barrier cream recommended. Wash hands after working with substance. Establish good personal washing routines, particularly before handling foodstuffs. Smoking forbidden.

## SECTION 9

## PHYSICAL &amp; CHEMICAL PROPERTIES

<b>Physical State:</b>	Liquid
<b>Appearance:</b>	Liquid
<b>Odour:</b>	Pleasant lemon-like odour
<b>Colour:</b>	Colourless to very pale yellow
<b>pH:</b>	No Data Available
<b>Vapour Pressure (kPa):</b>	0.13 @ 14°C
<b>Relative Vapour Density:</b>	4.66
<b>Boiling Point:</b>	175.5 - 178 °C
<b>Freezing Point:</b>	-98°C
<b>Specific Gravity:</b>	0.84
<b>Flash Point:</b>	46°C Closed Cup
<b>Bulk Density:</b>	No Data Available
<b>Corrosion Rate:</b>	No Data Available
<b>Decomposition Temperature:</b>	No Data Available
<b>Specific Heat:</b>	No Data Available
<b>Molecular Weight:</b>	136.23
<b>Octanol Water Coefficient:</b>	No Data Available
<b>Saturated Vapour Concentration:</b>	No Data Available
<b>Melting Point:</b>	-98 °C
<b>Evaporation Rate:</b>	<1 BuAc=1

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**PRODUCT NAME:****D-LIMONENE 99%**

**Particle Size:** No Data Available  
**Net Propellant Weight:** No Data Available  
**Auto Ignition Temp:** 237°C  
**Solubility:** Immiscible in water  
**Viscosity:** No Data Available  
**Volatile Percent:** No Data Available  
**VOC Volume:** No Data Available

**Additional Characteristics:**

Reactivity: Autoxidation facilitated by light and air.

Photodegradability: Atmospheric half-life = c.a. 0.884 to 0.64 hours

Other Data: Chemical Oxygen Demand: 2,850 gO<sub>2</sub>/l or 3,280 gO<sub>2</sub>/kg

Ozone depletion potential: Zero stratospheric

**Potential for Dust Explosion:** Product is a liquid.

**Fast or Intensely Burning Characteristics:** No Data Available

**Flame Propagation or Burning Rate of Solid Materials:** No Data Available

**Non-Flammables That Could Contribute Unusual Hazards to a Fire:** No Data Available

**Properties That May Initiate or Contribute to Fire Intensity:** Vapour may travel a considerable distance to source of ignition and flash back. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. Combustible material wet or soaked in limonene may autoxidise, generating heat and igniting spontaneously.

**SECTION 10****STABILITY & REACTIVITY**

**General Information:** Flammable Liquid. To prevent oxidation, avoid long-term exposure to air. If storing partially filled container, fill headspace with an inert gas such as nitrogen or carbon dioxide.

**Chemical Stability:** Autoxidation facilitated by light and air. Combustible material that has been soaked with d- Limonene may spontaneously combust. Peroxides formed by oxidation may present an explosion hazard if they become highly concentrated through distillation.

**Conditions to Avoid:** Avoid heat, sparks, flames, direct sunlight, moisture, freezing, static charges, mechanical shock, high temperatures and other high energy ignition sources. Also avoid enclosed spaces.

**Materials to Avoid:** Strong oxidizing agents, acid clays and mineral acids. Highly exothermic reaction noted when blended approx. 50/50 with Alkylbenzene Sulphonic Acid with possible boil over danger. Similar reaction not noted at lower levels. Keep away from heat, sparks, open flames, hot surfaces.

**Hazardous Decomposition Products:** If the product is heated, it emits acrid smoke and fumes as well as CO and CO<sub>2</sub>.

**Hazardous Polymerisation:** No Data Available

**SECTION 11****TOXICOLOGICAL INFORMATION****General Information:**

Dermal (rabbit) LD<sub>50</sub>: >5000 mg/kg

Oral (Rat) LD<sub>50</sub>: >2000 mg/kg

**Skin Irritant:** Irritant, may occur temporary redness (sort of burning). Mild local irritation and sensitization. Intensive contact with the skin may cause dermatitis.

**Eye Irritant:** Irritant, may cause burning, redness, pain.

**Ingestion:** Harmful if ingested, gastrointestinal irritation. Abdominal pain, nausea, vomiting, diarrhoea, and dizziness.

**Inhalation:** Irritant to respiratory tract, sore throat, coughing, shortness of breath, dizziness, and nausea.

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**PRODUCT NAME: D-LIMONENE 99%**

**Carcinogenicity:** No Data Available

**SECTION 12 ECOLOGICAL INFORMATION**

**Ecotoxicity:** LC50 (96hr) Fish 0.199mg/L; EC50 (48hr), Crustacea 0.307mg/L; EC50 (96hr) Algae 0.212mg/L; NOEC (504hr) Crustacea 0.05mg/L

**Persistence/Degradability:** Citrus Terpene is a biodegradable solvent occurring in nature as the main component of citrus peel oil. 100% in 28 days.

**Mobility in Soil:** Low (KOC = 1324)

**Environmental Fate:** Do NOT let product reach waterways, drains and sewers. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**Bioaccumulation:** Potential Risk of bioaccumulation in an aquatic species is high.(LogKOW = 4.8275)

**Environmental Impact:** No Data Available

**SECTION 13 DISPOSAL CONSIDERATIONS**

**General Information:** Dispose of in accordance with all local, regional and national regulations. All empty packaging should be disposed of in accordance with local, regional and national regulations or recycled/reconditioned at an approved facility.

**Special Precautions for Land Fill:** Contact a specialist disposal company or the local waste regulator for advice. Advise flammable nature. Incinerate at an approved site following all local regulations. Empty containers must be decontaminated and destroyed.

**SECTION 14 TRANSPORT INFORMATION**

**Proper Shipping Name:** TERPENE HYDROCARBONS, N.O.S. (D-LIMONENE)  
**Class:** 3 Flammable Liquids  
**Subsidiary Risk(s):** No Data Available  
**UN Number:** 2319  
**Hazchem:** 3Y  
**Packing Group:** III

**SECTION 15 REGULATORY INFORMATION**

**HSNO Classifications:** 3.1C, 6.4A, 6.5B, 9.2C, 9.1A

**EPA Approval Code:** HSR002495

**SECTION 16 OTHER INFORMATION**

**End of SDS.**