

# Material Safety Data Sheet

Infosafe No. 1CHJD Issue Date: October 2003  
Product Name: d-LIMONENE

RE-ISSUED by CHEMSUPP

**Classified as hazardous according to criteria of NOHSC**

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## COMPANY DETAILS

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**Company Name** CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)  
**Address** 50 Bedford Street GILLMAN  
SA 5013 Australia  
**Tel/Fax** Tel: (08) 8440-2000 Fax: (08) 8440-2001  
**Other Information** Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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## IDENTIFICATION

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**Product Name** d-LIMONENE

**Proper Shipping Name** DIPENTENE

<b>Other Names</b>	<u>Name</u>	<u>Mancode</u>
	d-LIMONENE TG	LT064
	Citrus oil	
	Limonene	
	Cinene	
	Cajeputene	
	p-Mentha-1,8-diene	
	Kautschin	
	1-Methyl-4-(1-methylethenyl)cyclohexene	
	1-Methyl-4-isopropenyl-1-cyclohexene	
	4-Isopropenyl-1-methyl-1-cyclohexene	
	Citrus terpenes	
	Orange terpenes	

	Menthadiene
<b>UN Number</b>	2052
<b>DG Class</b>	3
<b>Packing Group</b>	III
<b>Hazchem Code</b>	3[Y]
<b>Poisons Schedule</b>	Not Scheduled
<b>Product Use</b>	Flavouring, fragrance and perfume materials, solvent, wetting agent, dispersing agent, resin manufacture, degreaser, tar and asphalt remover, printing press cleaner, carpet stain cleaner, hand cleaner, floor cleaner, metal cleaner, electronics cleaning, graffiti remover, heat transfer medium, aerosol ingredient and replacement for toxic chlorinated solvents.

### Physical Data

<b>Appearance</b>	Colourless to light yellow liquid.
<b>Melting Point</b>	-74 °C
<b>Boiling Point</b>	175.5-176.4 °C
<b>Vapour Pressure</b>	2 mm Hg @ 20 °C
<b>Specific Gravity</b>	0.8411 @ 20 °C
<b>Flash Point</b>	48 °C
<b>Flamm. Limit</b>	0.7 by vol %
<b>LEL</b>	
<b>Flamm. Limit</b>	6.1 by vol %
<b>UEL</b>	
<b>Solubility in Water</b>	Immiscible.

### Other Properties

<b>Autoignition Temp.</b>	255 °C
<b>Form</b>	Liquid
<b>Stability</b>	Stable.
<b>Materials to Avoid</b>	Acids and oxidising agents.
<b>Formula</b>	C <sub>10</sub> H <sub>16</sub>
<b>Molecular Weight</b>	136.24
<b>Other Information</b>	Refractive index: 1.4743 @ 21 °C Optical rotation: +98 - +104 @ 20 °C

### Ingredients

<b>Ingredients</b>	<b><u>Name</u></b>	<b><u>CAS</u></b>	<b><u>Proportion</u></b>
	D-Limonene	5989-27-5	90-100 %

### HEALTH HAZARD INFORMATION

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## Health Effects

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<b>Acute - Swallowed</b>	May cause vomiting and headache.
<b>Acute - Eye</b>	Irritating to eyes.
<b>Acute - Skin</b>	Irritating to skin. May cause redness. May cause sensitisation by skin contact.
<b>Acute - Inhaled</b>	Irritating to respiratory system. May cause coughing and headache.
<b>Chronic</b>	Repeated or prolonged skin contact may cause chronic dermatitis.

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## First Aid

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<b>Swallowed</b>	Give plenty of water to drink. Seek immediate medical assistance.
<b>Eye</b>	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical attention.
<b>Skin</b>	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical attention.
<b>Inhaled</b>	Remove victim to fresh air. Seek medical advice if effects persist.
<b>First Aid Facilities</b>	Maintain eyewash fountain and drench facilities in work area.

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## Advice to Doctor

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**Advice to Doctor** Treat symptomatically.

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## Other Health Hazard Information

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### PRECAUTIONS FOR USE

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<b>Other Exposure Info.</b>	A time weighted average (TWA) concentration for an 8 hour day, and 5 day week has not been established by NOHSC Australia for this product. There is a blanket limit of 10mg/m <sup>3</sup> for dusts or mists when limits have not otherwise been established.
<b>Eng. Controls</b>	Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average). Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required. Refer to AS 1940-The storage and handling of flammable and combustible liquids and AS 2430-Explosive gas atmospheres for further information concerning ventilation requirements.

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## Personal Protection

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<b>Respirator Type (AS 1716)</b>	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.
<b>Eye Protection</b>	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
<b>Glove Type</b>	Hand protection should comply with AS 2161 Industrial Safety Gloves and Mittens (Excluding Electrical and Medical Gloves).
<b>Clothing</b>	Wear suitable Flame retardant protective clothing. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
<b>Work/Hygienic Practices</b>	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

## Flammability

<b>Fire Hazards</b>	<b>HIGHLY FLAMMABLE.</b> Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition.
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## SAFE HANDLING INFORMATION

### Storage and Transport

<b>Storage Precautions</b>	Store in cool place and out of direct sunlight. Store in well ventilated area. Store away from sources of heat or ignition. Store away from oxidizing agents. Keep containers closed at all times.
<b>Transport</b>	Dangerous goods of Class 3 (Flammable Liquid) are incompatible in a placard load with any of the following: Class 1, Class 2.1, if both the Class 3 and Class 2.1 dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane, Class 7.
<b>Proper Shipping Name</b>	DIPENTENE
<b>EPG Number</b>	3A1
<b>IERG Number</b>	14
<b>Packaging Method</b>	5.9.3RT1

### Spills and Disposal

**Spills & Disposal** Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 50m. All equipment in handling this product must be earthed. Do NOT touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas.  
Vapour suppressing foam may be used to control vapours. Water spray may be used to knock down or divert vapours.  
Absorb spill with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal.  
**SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.**

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## **Fire/Explosion Hazard**

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**Fire/Explos. Hazard** **HIGHLY FLAMMABLE:** These products have a low flash point. Will be easily ignited by heat, sparks or flames. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Most vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Many liquids are lighter than water. Containers may explode when heated. Fire will produce irritating, poisonous and/or corrosive gases. Vapours from run-off may create an explosion hazard.

**Fire Fighting Procedures** Caution: Use of water spray when fighting fire may be inefficient.  
Small fire: Use foam, dry chemical, CO<sub>2</sub> or water spray.  
Large fire: Use foam, fog or water spray - Do NOT use water jets.  
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

**Fire Fighting Precautions** SCBA and structural firefighter's uniform may provide limited protection. Fully encapsulating, gas-tight suits should be worn for maximum protection.

**Hazchem Code** 3[Y]

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## **OTHER INFORMATION**

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**Toxicology** Oral LD<sub>50</sub> (rat): > 5 mg/kg.  
Dermal LD<sub>50</sub> (rat): > 5 mg/kg.  
Eye irritation (rabbit): severe.  
Skin irritation (rabbit): severe.

**Known Harmful Effects on the Environment** Very toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment.

**Risk Statement** R10 Flammable.  
R38 Irritating to skin.  
R43 May cause sensitization by skin contact.  
R50 Very toxic to aquatic organisms.  
R53 May cause long term adverse effects in the aquatic environment.

**Safety Statement** S24 Avoid contact with skin.  
S37 Wear suitable gloves.  
S60 This material and its container must be disposed of as hazardous waste.  
S61 Avoid release to the environment. Refer to special instructions/safety data sheet.

**Hazard Category** Irritant

**References** Commonwealth Department of Health and Aged Care, 'Standard for the Uniform Scheduling of Drugs and Poisons No. 18', Commonwealth of Australia, Canberra 2002.  
Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley & Sons, Inc., NY, 1997.  
National Road Transport Commission, 'Australian Dangerous Goods Code 6th. Ed.', AGPS, Canberra, 1998.  
South Australia Government, 'Approved Code of Practice for the Labelling of Workplace Substances', 1995.  
Standards Australia, 'SAA/SNZ HB76:1997 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 1997.  
Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]', AusInfo, Canberra 1999.  
Worksafe Australia, 'List of Designated Hazardous Substances [NOHSC:10005(1999)]', AusInfo, Canberra 1999.  
Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]', AGPS, Canberra 1994.  
Worksafe Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]', AusInfo, Canberra 1995.

**User Codes**

	<u><b>User Code</b></u>
Risk Phrases	10-38-43-50-53
Safety Phrases	24-37-60-61
CAS No.	5989-27-5

**Empirical  
Formula  
& Structural  
Formula**

C10H16

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**CONTACT POINT**

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**Contact**

Paul McCarthy Ph. (08) 8440 2000    **DISCLAIMER STATEMENT:**

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