Material Safety Data Sheet

Infosafe No.	1CHJD	Issue Date : August 2007	RE-ISSUED by CHEMSUPP

Product Name : **d-LIMONENE**

Classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name d-LIMONENE

Product Use Flavouring, fragrance and perfume materials, cosmetic products, odour agents, food/foodstuff additives, food manufacturing, solvent, wetting agent, resin manufacture, medicines, e.g., bitter alkaloids, intermediates, botanical insecticide, degreaser, dispersing agent, paint stripper, tar and asphalt remover, cleaning/washing agents and disinfectants, 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.

Company Name CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

Address 50 Bedford Street GILLMAN
SA 5013 Australia

Telephone Number/Fax Tel:
(08) 8440-2000
Fax:
(08) 8440-2001

Other Names

Name	Product Code
(R)-(+)-Limonene	
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	

Other Information EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

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.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization Liquid

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
D-Limonene	5989-27-5	90-100 %	Xi, N	R10, R38, R43, R50, R53

3. HAZARDS IDENTIFICATION

Flammable.
Irritating to skin.
May cause sensitization by skin contact.
Very toxic to aquatic organisms.
May cause long term adverse effects in the aquatic environment.

Irritancy of Product Caution: The substance causes moderate skin irritation and is mildly irritating to the eyes. Vapour or mists may cause irritation to mucous membranes.

Sensitization of Product Risk of sensitisation to the skin.

Teratogenicity Known or suspected teratogen. - Dangerous Properties of Industrial Materials, 7th Ed., by N. Irving Sax and Richard J. Lewis.

Medical Conditions Generally Aggravated by Exposure Persons with pre-existing eye, skin, gastrointestinal, blood or nervous system disorders, or impaired cardiac, kidney or liver function may be at an increased risk upon exposure to this substance.

Environmental Hazards Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. May bioaccumulate.

Carcinogenicity d-Limonene [5989-27-5] is evaluated in the IARC Monographs (Vol. 73; 1999) as Group 3: Not classifiable as to carcinogenicity to humans (NB: Overall evaluation downgraded from 2B to 3 with supporting evidence from other relevant data).

Chronic Effects Prolonged or repeated ingestion may produce nausea, lowered blood sugar and cholesterol, and kidney damage (hematuria, albuminuria, tubular necrosis), and may also affect the liver. Repeated or prolonged skin contact can cause drying, defatting of skin and can cause an allergic skin response (redness, swelling, itching). The allergic response is caused by oxidation products of d-limonene, which are formed upon exposure to air. d-Limonene of very high purity is not expected to produce an allergic response.

Inhalation Vapour or mists may cause irritation of mucous membranes of the respiratory system, coughing, dyspnoea and headache. No nasal or pharyngeal irritation has been reported. Strong odour causes discomfort in some people. May cause dizziness and suffocation. Readily absorbed through inhalation. Aspiration of large doses may produce pulmonary oedema and chemical pneumonitis.

Ingestion Expected to have low acute oral toxicity. Ingestion of 20 grams caused diarrhoea, painful constrictions and a temporary increase in protein in the urine (proteinurea) in volunteers. May produce burning pain in the mouth and throat, irritation in the gastrointestinal tract, abdominal pain, nausea, vomiting, and diarrhoea. The vomitus or breath may have an odour of terpenes. Aspiration may cause lung damage. Ingestion of large amounts may produce behaviour/central nervous system effects (excitememt, somnolence, delirium, ataxia, convulsions, and stupor), peripheral system effects (spastic paralysis), respiratory effects (respiratory depression, choking, coughing, dyspnoea and cyanosis), and cardiovascular effects (tachycardia). Systemic absorption of large doses may produce cyanosis, fever, pulmonary oedema and chemical pneumonitis. The urine may have an odour of violets.

Skin Causes skin irritation. Symptoms can include redness, itching, burning, aching, long-lasting purpuric rash, possible defatting and dermatitis. It can be absorbed through intact skin. However, it is generally regarded to have low toxicity by dermal route. Risk of sensitisation, an allergic reaction, which becomes evident upon re-exposure to this material.

Eye Causes mild eye irritation, based on animal information.

4. FIRST AID MEASURES

Inhalation Remove from exposure, rest and keep warm. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention in severe cases, or if exposure has been great.

Ingestion Rinse mouth thoroughly with water immediately. Give plenty of water to drink. If swallowed, do NOT induce vomiting. Seek medical attention immediately.

Skin Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical attention.

Eye Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical attention.

First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Specific Methods	Caution: Use of water spray when fighting fire may be inefficient. Small fire: Use foam, dry chemical, CO2 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 fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Specific Hazards	HIGHLY FLAMMABLE: These products have a low flash point - Will be easily ignited by heat, sparks or flames at ambient temperatures. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Many liquids are lighter than water. Many vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Vapours from run-off may create an explosion hazard.
Hazardous Combustion Products	Irritating and toxic fumes and gases, carbon monoxide, carbon dioxide (CO, CO2).
Sensitivity to Impact (Shock Sensitivity)	Probably not sensitive. Stable material.
Sensitivity to Static Discharge	May accumulate static charge by flow or agitation. Vapour/air mixtures at concentrations in the flammable range can be ignited by a static spark.
Precautions in connection with Fire	SCBA and structural firefighter's uniform may provide limited protection. Fully-encapsulating, gas-tight suits should be worn for maximum protection.
Flash Point	48 °C (closed cup).
Ignition Temperature	237 °C
Flammable Limits UEL	6.1 %vol at 262 °C
Flammable Limits LEL	0.7 %vol at 150 °C
Flammability	HIGHLY FLAMMABLE. 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.
Explosion Data	Autoxidation facilitated by light and air. Rags or other combustible material wet or soaked in limonene may autoxidise, generating heat and igniting spontaneously. If limonene containing oxidation products is concentrated, e.g. by distillation, explosive levels of peroxide may be formed. Addition of stabilisers (antioxidants) should be considered. Containers may explode in the heat of a fire. Above 48 °C explosive vapour/air mixtures may be formed. Increased risk of fire and explosion with oxidizing agents.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal	ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 50m - All equipment used in handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control 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. Water spray may be used to knock down or divert vapour clouds. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

7. HANDLING AND STORAGE

Corrosiveness	Not considered to be corrosive for metals and glass.
Handling	Avoid ingestion and inhalation of gas/fumes/vapour/spray mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Keep

	container tightly closed and sealed until ready for use. Ensure good ventilation at the workplace. Use only with adequate ventilation. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Flameproof equipment is necessary in areas where this product is used. Fumes can combine with air to form an explosive mixture. Keep away from heat and all sources of ignition. Do NOT smoke. Keep away from incompatibles such as oxidizing agents. Take precautionary measures against static discharges. All electrical equipment must be flameproofed. Ground all equipment containing material. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage Regulations	Refer Australian Standard AS 1940-2004 'The storage and handling of flammable and combustible liquids'.
Storage	Store in a segregated and approved Flammables area. Store small containers in suitable flammable liquid storage cabinets when not in use. Larger drums (200l) must be kept in purpose-built stores. Store in original, labelled, tightly sealed container, in cool, dry, well-ventilated area, away from incompatible substances. Store protected from direct sunlight and moisture. Store away from strong acids, chlorates, perchlorates, chromates and dichromates, nitrates and other oxidising agents. Store away from heat and sources of ignition. Do not weld or cut empty containers. Partially filled containers should be blanketed with nitrogen. Segregate from food, animal feed, or medical supplies. Store in an area without drain or sewer access. Do not store in places where flooding is possible or in places where spillage or leaking into wells, drains, ground water, or surface water is possible. Suggested shelf life is 2 years.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).
Unsuitable Materials	Some plastics (ABS, urethane, Styrofoam, etc.).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Other Exposure Information	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 10 mg/m³ for mists when limits have not otherwise been established.
Respiratory Protection	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.
Eye Protection	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.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Supported Nitrile. Good: Supported Polyvinyl Alcohol (PVA) gloves. Supported Polyvinyl Chloride (PVC) gloves. Fair: Unsupported Viton. Unsupported Butyl. Poor: Supported Neoprene. Unsupported Neoprene. Supported Natural Rubber Latex. Unsupported Natural Rubber Latex. Unsupported Neoprene/Latex.
Body Protection	Flame retardant protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Eng. Controls	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.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or

re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colourless to yellow liquid.
Odour	Strong, pleasant fruit-, citrus- or lemon-like odour.
Melting Point	-74 °C
Boiling Point	176 °C
Solubility in Water	Practically insoluble (13.8 mg/L at 25 °C).
Solubility in Organic Solvents	Soluble in all proportions in alcohol. Easily soluble in diethyl ether. Soluble in carbon tetrachloride. Insoluble in propylene glycol.
Specific Gravity (H2O=1)	0.84
Vapour Pressure	<3 mm Hg (0.40 kPa) at 14 °C
Vapour Density (Air=1)	4.7
Evaporation Rate	<1 (ether=1); < 1 (butyl acetate =1).
Viscosity	1.28 cST at 20 °C
Volatile Component	>95 %vol
Partition co-efficient, n-octanol/water	Log Kow = 4.57; Log P(o/w): 4.23.
Surface Tension	25 mN/m at 22 °C
Flash Point	48 °C (closed cup).
Flammability	HIGHLY FLAMMABLE. 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.
Ignition Temperature	237 °C
Flammable Limits LEL	0.7 %vol at 150 °C
Flammable Limits UEL	6.1 %vol at 262 °C
Explosion Properties	Autoxidation facilitated by light and air. Rags or other combustible material wet or soaked in limonene may autoxidise, generating heat and igniting spontaneously. If limonene containing oxidation products is concentrated, e.g. by distillation, explosive levels of peroxide may be formed. Addition of stabilisers (antioxidants) should be considered. Containers may explode in the heat of a fire. Above 48 °C explosive vapour/air mixtures may be formed. Increased risk of fire and explosion with oxidizing agents.
Molecular Weight	136.26
Saturated Vapour Concentration	<4000 ppm at 14 °C (calculated)
Other Information	Taste: Fresh, citrus taste. Index of refraction: 1.473 at 20 °C/D. Specific Optical Rotation: +123.8° at 20 °C. Conversion Factor: 1 ppm = 5.56 mg/m³; 1 mg/m³ = 0.18 ppm at 25 °C. Aniline point: -15 °C.

10. STABILITY AND REACTIVITY

Stability	Stable under normal temperatures, pressures and conditions of use and storage. Slow autoxidation to form a film facilitated by light and air, oxidation behaviour similar to that of rubber or drying oils. Easily oxidised in moist air to carveol and carvone. Rags or other combustible material wet or soaked in limonene may autoxidise, generating heat and igniting spontaneously. Used oily rags should be collected regularly and either soaked in water or stored in closed metal containers. Addition of stabilisers (antioxidants) should be considered.

Hazardous Polymerization	Polymerization is not hazardous. May polymerize slowly in the presence of air.
Materials to Avoid	Air, acids, and oxidising agents such as chlorates, perchlorates, nitrates, chromates and dichromates, combination of iodine tetrafluoride or iodine pentafluoride and tetrafluoroethylene, dry hydrogen chloride or hydrogen bromide, polymerisation catalysts such as alumimium chloride and acidic clays, sulfur with oxidation.
Hazardous Decomposition Products	Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, acrid smoke and fumes.
Hazardous Reaction	Hazardous reactions with strong acids and polymerisation catalysts such as alumimium chloride and acidic clays. Reacts violently with a mixture of iodine pentafluoride or iodine tetrafluoride and tetrafluoroethylene, causing fire and explosion hazard. Reactive with oxidizing agents with increased risk of fire and explosion. Limonene reacts with dry hydrogen chloride or hydrogen bromide to form monohalides.
Conditions to Avoid	Distillation of limonene that may contain peroxides (if limonene containing oxidation products is concentrated, e.g. by distillation, explosive levels of peroxide may be formed), excess heat, ignition sources (flame, sparks, static discharge), prolonged exposure to air, moist air, soaking or wetting of rags in the substance, and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Inhalation	Vapour or mists may cause irritation of mucous membranes of the respiratory system, coughing, dyspnoea and headache. No nasal or pharyngeal irritation has been reported. Strong odour causes discomfort in some people. May cause dizziness and suffocation. Readily absorbed through inhalation. Aspiration of large doses may produce pulmonary oedema and chemical pneumonitis.
Ingestion	Expected to have low acute oral toxicity. Ingestion of 20 grams caused diarrhoea, painful constrictions and a temporary increase in protein in the urine (proteinurea) in volunteers. May produce burning pain in the mouth and throat, irritation in the gastrointestinal tract, abdominal pain, nausea, vomiting, and diarrhoea. The vomitus or breath may have an odour of terpenes. Aspiration may cause lung damage. Ingestion of large amounts may produce behaviour/central nervous system effects (excitememt, somnolence, delirium, ataxia, convulsions, and stupor), peripheral system effects (spastic paralysis), respiratory effects (respiratory depression, choking, coughing, dyspnoea and cyanosis), and cardiovascular effects (tachycardia). Systemic absorption of large doses may produce cyanosis, fever, pulmonary oedema and chemical pneumonitis. The urine may have an odour of violets.
Skin	Causes skin irritation. Symptoms can include redness, itching, burning, aching, long-lasting purpuric rash, possible defatting and dermatitis. It can be absorbed through intact skin. However, it is generally regarded to have low toxicity by dermal route. Risk of sensitisation, an allergic reaction, which becomes evident upon re-exposure to this material.
Eye	Causes mild eye irritation, based on animal information.
Chronic Effects	Prolonged or repeated ingestion may produce nausea, lowered blood sugar and cholesterol, and kidney damage (hematuria, albuminuria, tubular necrosis), and may also affect the liver. Repeated or prolonged skin contact can cause drying, defatting of skin and can cause an allergic skin response (redness, swelling, itching). The allergic response is caused by oxidation products of d-limonene, which are formed upon exposure to air. d-Limonene of very high purity is not expected to produce an allergic response.
Carcinogenicity	d-Limonene [5989-27-5] is evaluated in the IARC Monographs (Vol. 73; 1999) as Group 3: Not classifiable as to carcinogenicity to humans (NB: Overall evaluation downgraded from 2B to 3 with supporting evidence from other relevant data).
Acute Toxicity - Oral	LD50 (rat): 4400 mg/kg (male); LD50 (rat): 5200 mg/kg (female); LD50 (rabbit): >5000 mg/kg; LD50 (mouse): 5600 mg/kg (male); LD50 (mouse): 6600 mg/kg (female).
Acute Toxicity - Dermal	LD50 (rabbit, New Zealand white) >5000 mg/kg (24 hr application).

Eye Irritation	Draize test, rabbit: Result: Mild eye irritation (scored 8/110).
Skin Irritation	Draize test, rabbit: 10%/24 hr, Result: Mild irritation effect. Irritation data, rabbit: 500 mg/24 hr, Result: Moderate irritation effect.
Skin Sensitisation	No sensitizing effect was observed when 25 volunteers were exposed to d-limonene (8% solution in petrolatum) in a Human Maximization Test. Five of 67 people who had an allergic skin response to turpentine tested positive to 1% d-limonene. (The allergic response is caused by oxidation products of d-limonene, which are formed upon exposure to air. d-Limonene of very high purity is not expected to produce an allergic response.) Patch testing in consecutive dermatitis patients from Sweden and Belgium revealed positive reactions in 1.5-2% of the subjects tested with oxidized d-limonene. In a study in which the sensitivity of four patch testing systems was evaluated in volunteers, d-limonene (perfume-grade) reacted strongly in all types of patches within 10-15 minutes of exposure. Skin irritation was assessed before application, as well as immediately and 1, 24, 48, and 72 hours after removal of the patch, using a scoring system based broadly on that used for rabbit irritation studies, but modified to account for the nature of reactions on human skin. There was evidence of sensory effects and urticarial responses on removal of the patches. Significant irritation persisted for 24 hours, and these reactions persisted for 48 and 72 hours in many volunteers. Dermal exposure to d-limonene (98%) for 2 hours in one subject caused burning, itching, aching, and a long-lasting purpuric rash.

12. ECOLOGICAL INFORMATION

Environ. Protection	Do not allow to enter waters, waste water, or soil!
Mobility	Distribution: log P(o/w): 4.23.
Bioaccumulation	An appreciable bioaccumulation potential is to be expected (log P(o/w) >3).
Acute Toxicity - Fish	After reaction: Leuciscus idus LC50: 34 mg/l.
Ecotoxicity	Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Dispose of according to relevant local, state and federal government regulations.

14. TRANSPORT INFORMATION

Dangerous Goods of Class 3 Flammable Liquids, 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 and Class 7.

U.N. Number	2052
Proper Shipping Name	DIPENTENE
DG Class	3
Hazchem Code	3[Y]
Packaging Method	3.8.3RT1
Packing Group	III
EPG Number	3A1
IERG Number	14

15. REGULATORY INFORMATION

Risk Phrase	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 Phrase	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.

Poisons Schedule Not Scheduled

Hazard Category Irritant,Dangerous for the environment

16. OTHER INFORMATION

Contact Person/Point Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT:
All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula Empirical Formula: C10-H16.
Structural Formula: CH3-C6H8-C(CH3)=CH2.

References

Commonwealth Department of Health and Aged Care, 'Standard for the Uniform Scheduling of Drugs and Poisons No. 22', Commonwealth of Australia, Canberra 2007.
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 'AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids.
Standards Australia, 'SAA/SNZ HB 76:2004 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, August 2004.
Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]', AusInfo, Canberra 2004.
Worksafe Australia, 'Hazardous Substances Information System, 2005'.
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

User Field Title	User Code
Risk Phrases	10-38-43-50-53
Safety phrases	24-37-60-61
CAS No.	5989-27-5

Poisons Schedule Not Scheduled

Hazard Category Irritant,Dangerous for the environment

Molecular Weight 136.26

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