

Material Safety Data Sheet



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

Product name: LANNATE (R) L INSECTICIDE

Synonyms: Crop Care MSDS No. 41913

CAS-No.:

Molecular Formula:

Supplier: Crop Care Australasia Pty Ltd

ACN: 061 362 347

Street Address: 77 Tingira Street

Pinkenba 4008

Australia

Telephone: + 61 7 3867 9100

Facsimile: + 61 7 3867 9110

Emergency telephone number: 1 800 033 111 (ALL HOURS)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Recommended use: Carbamate insecticide.

Appearance: Blue liquid with a sulfur-like odour.

CHEMICAL ENTITY	CAS NO.	PROPORTION
Methanol	67-56-1	52% (472 g/L)
Methomyl	16752-77-5	25% (225 g/L)
Water	7732-18-5	MED
Blue dye	-	VLOW

		100%

PROPORTION (% weight per weight):

VHIGH >60, HIGH 30-60, MED 10-29, LOW 1-9, VLOW <1

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS) or are National Registration Authority (NRA) approved active constituents.

3. HAZARDS IDENTIFICATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

T+ Very toxic
Xi Irritant

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R-phrases(s)

R23 Toxic by inhalation.
R28 Very toxic if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Class: 3 Flammable Liquid
Subsidiary Risk 1: 6.1 Toxic

Poisons Schedule (Aust)/Toxic Substance (NZ): S7

This material is a Scheduled Poison S7 and must be stored, maintained and used in accordance with the relevant regulations.

4. FIRST AID MEASURES

Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons (Phone; Australia 131 126).

Ingestion: Rinse mouth with water. If swallowed, give one atropine tablet every 5 minutes until dryness of the mouth occurs. Seek immediate medical assistance.

Eye contact: Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Seek immediate medical assistance.

Skin contact: Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If poisoned by skin absorption give one atropine tablet every 5 minutes until dryness of the mouth occurs. Seek medical advice.

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If poisoned by absorption through the lungs give one atropine tablet every 5 minutes until dryness of the mouth occurs. Seek medical advice.

Notes to physician: Anti-cholinesterase effects.

Treatment: Give 2 mg of atropine sulphate intramuscularly or, in severe cases, intravenously, repeated at 10-15 min intervals until dryness of the mouth occurs. When this response is achieved it is advisable to maintain a mild degree of atropinisation for 24 hours. If stopped too early pulmonary oedema may develop.

Atropine should not be given to a cyanosed patient.

Oximes such as 2-PAM are contra-indicated.

For METHANOL: Treat symptomatically. Metabolic acidosis may occur up to 12 hours after ingestion.

Administration of ethanol reduces the toxic effects by blocking the metabolic route to formaldehyde/formic acid production in the body.

5. FIRE-FIGHTING MEASURES

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Specific hazards: Flammable liquid. May form flammable vapour mixtures with air. Avoid all ignition sources. Flameproof equipment necessary in area where this chemical is being used. Nearby equipment must be earthed. Vapour may travel a considerable distance to source of ignition and flash back.

Fire fighting further advice: Highly flammable liquid. Heating can cause expansion or decomposition leading to violent rupture of containers. On burning will emit toxic fumes. Fire fighters to wear self-contained breathing apparatus if risk of exposure to vapour or products of combustion.

Suitable extinguishing media: Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal.

LARGE SPILLS: Shut off all possible sources of ignition. Increase ventilation. Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand, or other inert material). Collect and seal in properly labelled drums for disposal. If contamination of sewers or waterways has occurred advise the local emergency services.

7. HANDLING AND STORAGE

Storage: KEEP AWAY FROM HEAT, SPARKS AND OPEN FLAMES. Store in the closed, original container in a cool, well-ventilated area. DO not store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.

This material is a Scheduled Poison S7 and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits

No value assigned for this specific material by the National Occupational Health and Safety Commission (Worksafe Australia).

However, Exposure Standards for constituents:

	TWA		STEL		NOTICES
	ppm	mg/m ³	ppm	mg/m ³	
Methanol	200	262	250	328	Sk
Methomyl	-	2.5	-	-	-

As published by the National Occupational Health and Safety Commission (Worksafe Australia).

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TWA - the Time-Weighted Average airborne concentrations over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour work day. According to current knowledge these concentrations should neither impair the health of, nor cause undue discomfort to, nearly all workers.

'Sk' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Engineering measures: IN THE WORKPLACE: Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Keep containers closed when not in use.

Personal protection equipment: OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES (Short), RESPIRATOR.

Code: H - Orica Personal Protection Guide No.1, 1998

MANUFACTURE, PACKAGING AND TRANSPORT: Avoid skin and eye contact and the inhalation of vapour. Wear overalls, chemical goggles and impervious gloves. Available information suggests that gloves made from PVC (1) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, a final assessment should be made by the user. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-use.

PREPARATION AND USE OF PRODUCT: Avoid contact with eyes and skin and clothing. Do not inhale vapour or spray mist. Protect eyes when using. When opening the container and preparing spray, wear elbow-length PVC gloves and face shield. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves and impervious footwear and half-face respirator with combined dust and gas cartridge. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield and respirator or face piece and contaminated clothing. Obtain an emergency supply of atropine tablets 0.6mg.

RE-ENTRY PERIOD: Do not allow entry into treated areas for at least 24 hours after treatment. When prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat and elbow-length PVC gloves. Clothing must be laundered after each day's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour / Odour: Blue liquid with a sulfur-like odour.

Solubility: Miscible with water.

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Specific Gravity (20 C)	: 0.90	Melting Point (C)	: N App
Rel Vapour Density (air=1)	: N Av	Boiling Point (C)	: 70.4
Vapour Pressure (20 C)	: 10.25 kPa	Decomp. Point (C)	: N Av
Flash Point (C)	: 21	Sublimation Point	: N App
Flammability Limits (%)	: 6.7 (lower)	pH	: N Av
Autoignition Temp (C)	: 385	Viscosity	: N Av
% Volatile by volume	: < 50	Evaporation Rate	: N Av
Solubility in water(g/kg)	: Miscible	(n-Butyl acetate=1)	
LogPow (Methomyl)	: 0.093		

(Typical values only - consult specification sheet)
N Av = Not available N App = Not applicable

10. STABILITY AND REACTIVITY

Stability: Aqueous solutions of methomyl decompose slowly at normal room temperature and more rapidly on aeration, in sunlight, in alkaline media, or at higher temperatures. Methomyl decomposes rapidly in soil. (2)

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Ingestion: The following symptoms, listed in approximate order of appearance, begin within 30-60 minutes and are at a maximum in 2-8 hours:

Mild - Anorexia, headache, dizziness, weakness, anxiety, sub-sternal discomfort, tremors of the tongue and eyelids, contraction of the pupil and impairment of visual acuity.

Moderate - Nausea, salivation, tearing, abdominal cramps, vomiting, sweating, slow pulse and muscular fasciculations.

Severe - Diarrhea, pinpoint and non reactive pupils, respiratory difficulty, pulmonary oedema, cyanosis, loss of sphincter control, convulsions, coma and heart block. Hyperglycemia and possible acute pancreatitis have occurred. Poisoning may result in permanent blindness due to the methanol component. (1,2)

Eye contact: An eye irritant. May cause pupil constriction (2).

Skin contact: Contact with skin will result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis. The components methomyl and methanol may be absorbed through the skin. Effects may include those described for 'INGESTION'.

Inhalation: Vapour is irritant to mucous membranes and respiratory tract. Inhalation of vapour can result in headaches, dizziness, possible nausea, dilated pupils and clouded vision. Inhalation of high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and, if exposure is prolonged unconsciousness.

Long Term Effects

Evidence from animal tests indicate that repeated or prolonged exposure to methomyl produces no significant effects except cholinesterase inhibition. (2)

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Acute toxicity / Chronic toxicity

No LD50 data available for product, however for the active constituent

METHOMYL: (2)

Oral LD50 (rats): 12 - 48 mg/kg.

Dermal LD50 (rabbit): >500 mg/kg.

Inhalation LC50 (rat): 300 mg/m³/4hr - mist.

SKIN (Rabbit): Non-irritant. Not a skin sensitiser.

EYES (Rabbit): Mild irritant.

Symptoms of poisoning are typical of carbamate - induced cholinesterase inhibition (excessive salivation and constriction of pupils). These are likely to develop rapidly after exposure.

Rats were fed methomyl in the diet for 79 days at 0, 200, 400 or 800 ppm. No depression of blood cholinesterase could be detected at 400 ppm and only a slight decrease in blood cholinesterase was detected at 800 ppm. Dogs fed diets containing 0,50, 100 and 400 ppm for 90 days showed no toxic signs or inhibition of cholinesterase.

Chronic studies in animals have shown that repeated doses produce no carcinogenic nor adverse reproductive effects. In 2 year feeding trials NOEL for rats and dogs was 100 mg/kg. (3)

ADI (Acceptable Daily Intake) for humans is 0.01 mg/kg/bw/day. (4)

METHANOL: (1)

Oral LD50 (rat): 5628 mg/kg.

Inhalation LC50 (rat): 64000 ppm/4hr.

SKIN: Moderate irritant (rabbit, 20 mg/24hr).

EYES: Moderate irritant (rabbit, 100 mg/24hr).

Absorption of methanol into the body results in the production of the metabolic toxins, formaldehyde and formic acid, which cause metabolic acidosis and selective injurious effects to the eye tissues. Repeated exposures can lead to the accumulation of toxic levels of methanol as elimination from the body is slow.

Visual disturbances resulting from repeated rubbing of the skin with methanol have been reported however, exposure by inhalation was not ruled out. Methanol is slowly absorbed through the skin and is not likely to cause poisoning symptoms under normal industrial use.

A summary of reports of occupational exposure (atmospheric) to methanol indicate that:

- (1) Exposure to less than 200 ppm - no symptoms reported.
- (2) Exposure between 200 to 800 ppm - mild to severe headaches, nausea, vomiting and CNS depression.
- (3) Exposure to greater than 800 ppm - Symptoms include, headache, conjunctivitis, giddiness, insomnia, gastric disturbances, visual disturbances and blindness.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways. Identified as a marine pollutant by the International Maritime Organisation.

METHOMYL: (5)

AQUATIC TOXICITY:

Very toxic to aquatic organisms.

96hr LC50 (rainbow trout): 3.4 mg/L.

96hr LC50 (bluegill): 0.87 mg/L.

LogPow is 0.093

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Risk of bioaccumulation in an aquatic species is low.

TERRESTRIAL TOXICITY:

Toxic to terrestrial species.

Oral LD50 (mallard duck): 15.9 mg/kg

Oral LD50 (peasants): 15.4 mg/kg.

Toxic to bees. Contact LD50 (bee): 0.1ug/bee, but not hazardous when the spary has dried.

ENVIRONMENTAL FATE, DISTRIBUTION AND PESISTENCE:

Rapidly degraded in soil and water. Half life in groundwater samples of less than 0.2 days.

13. DISPOSAL CONSIDERATIONS

(1000L DRUM): This minibulk container is reusable and remains the property of Crop Care Australasia Pty Ltd. No other liquid, solid or pesticide product should be put into it. When empty, return to Crop Care Australasia Pty Ltd for cleaning, relabelling and refilling.

(BULK L): Empty contents into application equipment. Ensure all valves are closed prior to refilling or returning to point of supply for refill or storage.

(ALL OTHER CONTAINERS): Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture or bury the empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

UN-No:	2758
Class:	3 Flammable Liquid
Hazchem code:	2XE Hazchem Code
EPG:	3A2
Packing group:	Packing Group 2
Subsidiary Risk 1:	6.1 Toxic

Proper Shipping Name: CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC (CONTAINS METHOMYL AND METHANOL)

Segregation Dangerous Goods:

Not to be loaded with explosives (class 1), nitromethane, flammable gases (class 2.1) if both are in bulk, toxic gases (class 2.3), spontaneously combustible substances (class 4.2), oxidising agents (class 5.1), organic peroxides (class 5.2) or radioactive substances (class 7), food and food packaging in any quantity, however exemptions may apply.

Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

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UN-No: 2758
Class: 3 Flammable Liquid
Packing group: Packing Group 3
Subsidiary Risk 1: 6.1 Toxic

Proper Shipping Name: CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC (CONTAINS METHOMYL AND METHANOL)

This material is classified as a Marine Pollutant according to the International Maritime Dangerous Goods Code.
Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN-No: 2758
Class: 3 Flammable Liquid
Packing group: Packing Group 3
Subsidiary Risk 1: 6.1 Toxic

Proper Shipping Name: CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC (CONTAINS METHOMYL AND METHANOL)

15. REGULATORY INFORMATION

Hazardous according to criteria of Worksafe Australia.

Hazard Category

T+ Very toxic
Xi Irritant

R-phrase(s)

R23 Toxic by inhalation.
R28 Very toxic if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.

S-phrase(s)

S 1/2 Keep locked-up and out of the reach of children.
S23 Do not breathe vapour/spray.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Poisons Schedule (Aust)/Toxic Substance (NZ): S7

16. OTHER INFORMATION

Literary reference

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- (1) Material Safety Data Sheet - Methanol (CDS 01118)
Orica Australia Pty. Ltd. 02/98
- (2) In 'Handbook of Pesticide Toxicology". Eds Laws and Hayes.
Academic Press, 1991.
- (3) Material Safety Data Sheet - Methomyl (CDS 31047)
Orica Australia Pty. Ltd. 09/97
- (4) ADI List, Commonwealth Department of Health and Family Service.
01/2000
- (5) In 'The Pesticide Manual'. 11th Ed. Ed. CDS Tomlin. British Crop
Protection Society, 1997, pg815-817.

This Material Safety Data Sheet has been prepared by SHE Pacific Pty Ltd on behalf of Orica Ltd and its subsidiary companies.

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Reason(s) For Issue: Change to Segregation Requirements.

Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Orica Limited and its subsidiaries cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.