

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Le-mat[®] 290 SL Insecticide**

Other names None

Product codes and pack sizes 4953516 (1L), 4953524 (10 L)

Chemical group Organophosphorus

Recommended use Agricultural insecticide

Formulation Soluble concentrate

Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARDOUS SUBSTANCE (see Risk phrases below) - DANGEROUS GOOD
Poisonous. Cholinesterase inhibitor. Flammable liquid. Toxic to aquatic organisms.

Hazard classification Hazardous (National Occupational Health and Safety Commission - NOHSC)

Risk phrases R25 – Toxic if swallowed.
R21 – Harmful in contact with skin.
R36 – Irritating to eyes.
R43 – May cause sensitisation by skin contact.

Safety phrases See Sections 4, 5, 6, 7, 8, 9, 13

ADG classification “Dangerous good” for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail – ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (contains omethoate, 1-methoxy-2-propyl acetate), Class 6.1 Sub Class 3, UN 3017, Packing Group III. Marine Pollutant.

SUSDP classification (Poisons schedule) Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Omethoate	[1113-02-6]	290
1-methoxy-2-propyl acetate	[108-65-6]	760

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to the doctor.

- Inhalation** If inhaled, remove to fresh air and keep at rest. Obtain medical advice. If breathing stops or shows signs of failing, start artificial respiration. If advised by doctor or Poisons Information Centre, atropine tablets may be administered.
- Skin contact** Immediately remove contaminated clothing. Wash affected areas with soap and water. Seek medical aid. If advised by doctor or Poisons Information Centre, atropine tablets may be administered.
- Eye contact** Rinse eyes immediately with clean water for at least 15 minutes and obtain medical aid.
- Ingestion** Wash out mouth with water. Keep patient at rest and seek medical advice immediately, as above. Transport patient to doctor or hospital quickly. If advised by doctor or Poisons Information Centre, atropine tablets may be administered. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person.
- First Aid Facilities** Provide eyewash and safety shower facilities in the workplace. Obtain an emergency supply of atropine tablets 0.6 mg.
- Medical attention** Le-mat contains omethoate, which is an organophosphorus compound, and as such it is a cholinesterase inhibitor.

Symptoms of poisoning

Mild intoxication causes headache, blurred vision, weakness, sweating, mild chest pain, nausea and vomiting. Severe intoxication causes cyanosis (blueness of the skin, as from lack of oxygen), muscular twitching, spasms, miosis (pinpoint pupils) and respiratory paralysis.

Onset of symptoms may be delayed. Cholinesterase inhibition sometimes persists for several weeks.

Treatment

Basic aid, decontamination, symptomatic treatment and if necessary administration of antidote.

Antidote: Atropine sulphate, possibly in conjunction with Toxogonin or obidoxime (PAM).

Monitor respiratory, cardiac and central nervous system function. Monitor red blood cell and plasma cholinesterase levels. Administer oxygen if necessary. Watch for pulmonary oedema and delayed neurological symptoms.

Contraindications:

Adrenergic derivatives.

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

5. FIRE FIGHTING MEASURES

Extinguishing media	Waterspray, foam, dry chemical, carbon dioxide, sand.
Hazards from combustion products	In a fire, hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.
Precautions for fire fighters	The product is a flammable liquid, flash point > 43° C. Above this temperature, explosive vapour/air mixtures may be formed. Firefighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away and move all other personnel to windward side of fire. Use water spray to cool fire-exposed containers. Avoid spraying directly into containers due to danger of boilover. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.
Hazchem Code	3W

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Extinguish or remove all possible sources of ignition. Do not smoke, eat or drink during the cleanup process. Personnel involved in cleanup should wear protective clothing and equipment as described in Section 8 - PERSONAL PROTECTION. Keep people and animals away and upwind. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labeled drums for safe disposal. Clean floor with a damp cloth and place cloth in drum. Cover and label drums for safe disposal. Thoroughly ventilate the area after cleanup. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority. Decontaminate tools and equipment used in the cleanup.

7. HANDLING AND STORAGE

Handling	Keep out of reach of children. Product and spray are poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate the eyes. Repeated exposure may cause allergic disorders. Repeated minor exposure may have a cumulative poisoning effect. Avoid contact with eyes and skin. Do not inhale spray mist. If clothing becomes contaminated with product remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. 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, face shield and contaminated clothing. Keep away from excessive heat, open flames and other sources of ignition. Take precautionary measures against static discharges.
Storage	Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Keep away from excessive heat, open flames and other sources of ignition.
Flammability	Flammable liquid. Flash point > 43° C.

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards	The National Occupational Health and Safety Commission (NOHSC) exposure standards for 1-Methoxy-2-propanol acetate is: TWA: 274 mg/m ³ (50 ppm); STEL 548 mg/m ³ (100 ppm). Skin Notation. <u>Definitions:</u> <i>Exposure standard – time weighted average (TWA)</i> – the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week. <i>Exposure standard - STEL (short term exposure limit)</i> means a 15 minute TWA exposure which should not be exceeded at any time during a working day. <i>Skin notation</i> – Absorption through the skin may be a significant source of exposure.
Biological limit values	Production workers and agricultural workers handling this product should be monitored for cholinesterase levels. A baseline level should be established prior to any potential exposure. See Guidelines for Health Surveillance [NOHSC:7039(1995)]
Engineering controls	Control process conditions to avoid contact. Use local exhaust ventilation during manufacture and spark proof equipment. The vapour of the solvent in this product may travel considerable distances to a source of ignition and flash back. Use this product in a well-ventilated area only.
Personal Protective Equipment	Product is poisonous if absorbed by skin contact, inhaled or swallowed. <ul style="list-style-type: none">• Wear face shield• If inhalation is possible wear an AS/NZS 1715/1716 approved organic vapour respirator.• Wear cotton overalls buttoned to the neck and wrist, a washable hat and impervious footwear.• Wear elbow-length PVC gloves. Keep working clothes separate. Remove soiled or soaked clothing immediately. Clean them separately, taking suitable precautions, or destroy if necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colourless liquid
Odour:	Aromatic, chemical
pH:	3.2 to 4.2 (10% in water)
Vapour pressure:	3.3 x 10 ⁻⁵ hPa at 20° C (omethoate); 0.49 kPa at 20° C (solvent)
Vapour density:	4.6 – solvent (air = 1)
Boiling point:	146° C (solvent)
Freezing/melting point:	Not available
Solubility:	Soluble in water
Specific Gravity:	1.05 at 20° C
Flash Point:	> 43° C
Flammability (explosive) limits:	LEL: 1.5% v/v; UEL: 7.0% v/v
Auto-ignition temperature:	332° C (omethoate); 333° C (solvent)
Partition coefficient (octanol/water):	Omethoate: Log P _{ow} = - 0.74 at 20° C Solvent: Log P _{ow} = 0.43 (calculated)

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Heat, flames, sparks.
Incompatible materials	Avoid strong oxidising agents, alkaline materials and acids.
Hazardous decomposition products	In a fire, hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.
Hazardous reactions	None

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

The active ingredient in Le-mat, omethoate, is an anticholinesterase compound. Symptoms typical of cholinesterase inhibition (for all routes of entry):

Mild cases

Headache, blurred vision, weakness, sweating, mild chest pain, nausea and vomiting.

Severe cases

Cyanosis (blueness of the skin, as from lack of oxygen), muscular twitching, spasms, miosis (pinpoint pupils) and respiratory paralysis. These symptoms commence from one to three hours after excessive exposure.

Inhalation	Poisonous by inhalation.
Skin contact	Poisonous if absorbed by skin contact. May defat the skin.
Eye contact	Irritating to the eyes.
Ingestion	Poisonous if swallowed.

ANIMAL TOXICITY DATA

Acute:

Oral toxicity	LD ₅₀ rat: approximately 100 mg/kg (<i>similar product</i>)
Dermal toxicity	LD ₅₀ rat: approximately 1000 mg/kg (<i>similar product</i>)
Inhalation toxicity	LC ₅₀ (4 h) rat: approximately 0.3 mg/L air (aerosol) (<i>omethoate active ingredient</i>)
Skin irritation	Non irritant (rabbit) (<i>similar product</i>)
Irritation to mucous membranes	Irritating (rabbit) (<i>derived from ingredient data</i>)
Sensitisation	Omethoate is a skin sensitiser (guinea pig)

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

11. TOXICOLOGICAL INFORMATION - continued

Chronic:

Repeated exposure may cause allergic disorders. Repeated minor exposure may have a cumulative poisoning effect. The main health effects from repeated exposure would be toxic symptoms of cholinesterase inhibition as described above. Animal studies with omethoate have shown no evidence of oncogenic effect, no evidence of carcinogenic effects and no teratogenic potential.

The long term effects in animals noted for the solvent, 1-methoxy-2-propyl acetate, were headaches, dizziness and possible nausea. The solvent was not mutagenic in the Ames test, and did not cause teratological or other developmental effects.

12. ECOLOGICAL INFORMATION

Toxic to aquatic invertebrates. Dangerous to bees.

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity

Omethoate:

Fish toxicity:

LC₅₀: 30 mg/L (96 h); golden orfe (*Leuciscus idus*)

LC₅₀: 9.1 mg/L (96 h); trout (*Oncorhynchus mykiss*)

Aquatic invertebrate toxicity:

EC₅₀: 0.022 mg/L (48 h); *Daphnia magna*

Algae toxicity:

IC₅₀: 167.5 mg/L (72 h); green algae (*Scenedesmus subspicatus*)

Bird toxicity:

LD₅₀: 79.7 mg/kg; male Japanese quail

LD₅₀: 83.4 mg/kg; female Japanese quail

Environmental fate, persistence, degradability, mobility

Omethoate has a relatively high mobility in soil but is very rapidly metabolised. DT₅₀ is only a few days. The main metabolite is carbon dioxide. Aged leaching studies revealed that metabolites have only a low leaching potential.

13. DISPOSAL CONSIDERATIONS

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 and bury 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.

Dispose of waste product as hazardous waste via a licensed disposal contractor to an approved landfill. Do not discharge into drains or sewers.

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

14. TRANSPORT INFORMATION

UN number	3017
Proper shipping name	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (contains omethoate, 1-methoxy-2-propyl acetate)
Class and	6.1
Subsidiary Risk	3
Packing Group	III
EPG	Guide 17 – Dangerous Goods - Initial Emergency Response Guide
Hazchem code	3W
Marine Pollutant	Yes

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988
Australian Pesticides and Veterinary Medicines Authority approval number: 45672

See also Section 2.

16. OTHER INFORMATION

Trademark information Le-mat® is a Registered Trademark of Arysta.

Preparation information Replaces October 2, 2003 MSDS.
Reasons for revision: product code/pack size, marine pollutant, added exposure standards for 1-methoxyl-2-propyl acetate, added conditions to avoid, trademark information.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

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

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

END OF MSDS