

MATERIAL SAFETY DATA SHEET



Date of Issue: October 2, 2003

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name Lebaycid® Insecticide Spray
Other names None
Product codes 4953494 (1 L), 4953486 (5 L)
Chemical group Organophosphorus
Recommended use Agricultural insecticide
Formulation Emulsifiable concentrate
Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022
Address 391 - 393 Tooronga Road, East Hawthorn
Victoria 3123, Australia
Telephone (03) 9248 6888
Facsimile (03) 9248 6800
Website www.bayercropscience.com.au
Contact Development Manager (03) 9248 6888
Emergency Telephone Number 1800 033 111 – Orica SH&E Shared Services

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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

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

Risk phrases R 25 – Toxic if swallowed.
R20/21 – Harmful by inhalation and in contact with skin.
R48/25 – Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R68 – Possible risks of irreversible effects.

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 fenthion, xylene), Class 6.1 (3), UN 3017, PG III.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Fenthion	[55-38-9]	550
Xylene	[1330-20-7]	167
Other ingredients, mostly emulsifiers	(non hazardous)	395

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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. Do NOT induce vomiting. Give a glass of 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	Lebaycid contains fenthion which is an organophosphorus compound, and as such it is a cholinesterase inhibitor. It also contains xylene as the solvent. <u>Symptoms of poisoning</u> 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. <u>Treatment</u> Basic aid, decontamination, symptomatic treatment and if necessary administration of antidote. <i>Antidote:</i> Atropine sulphate, possibly in conjunction with Toxogonin or obidoxime (PAM). As this product contains the hydrocarbon liquid, xylene, care should be taken to prevent pulmonary aspiration. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema. 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. <u>Contraindications:</u> Adrenergic derivatives.

5. FIRE FIGHTING MEASURES

Extinguishing media	Waterspray, foam, dry chemical, carbon dioxide, sand.
Hazards from combustion products	In a fire, carbon monoxide, phosphorus pentoxide and sulphur dioxide may be formed.

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5. FIRE FIGHTING MEASURES - continued

Precautions for fire fighters The product is a flammable liquid – flash point 38° C. Liquid and vapour of xylene are flammable and the vapour will form explosive mixtures with air. The vapour is heavier than air and may travel along the ground so that distant ignition is a possibility. 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.

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 labelled 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 is poisonous if absorbed by skin contact, inhaled or swallowed. Avoid contact with eyes, skin and clothing. Do not inhale spray mist. If product on skin, immediately wash area with soap and 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 or goggles and contaminated clothing. Keep away from excessive heat, open flames and other sources of ignition.

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 > 38° C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards *NOHSC Exposure standards:*
TWA for fenthion is 0.2 mg/m³ Skin notation
TWA for xylene is 80 ppm, 350 mg/m³
STEL for xylene is 150 ppm, 655 mg/m³

Definitions:

Exposure standard – time weighted average (TWA) – the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

Exposure standard - STEL (short term exposure limit) means a 15 minute TWA exposure which

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should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.

Skin notation – 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 and spark proof equipment during manufacture. Use in a well-ventilated area only.
Personal Protective Equipment	Product is harmful if absorbed by skin contact, inhaled or swallowed. <ul style="list-style-type: none">• Wear face shield or splash proof goggles• If inhalation is likely wear an AS/NZS 1715/1716 approved respirator.• Wear cotton overalls buttoned to the neck and wrist, a washable hat and impervious footwear.• Wear elbow-length PVC gloves. During post harvest dipping operation wear a full-length waterproof apron as well.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear brown liquid
Odour:	Aromatic, chemical
pH:	4.9 to 5.9 (1% in water)
Vapour pressure:	7.4 x 10 ⁻⁶ hPa (at 20° C) (fenthion) 1 kPa (at 20° C) (xylene)
Vapour density:	3.7 (air = 1) (xylene)
Boiling point:	138 - 142° C (boiling point range of xylene)
Freezing/melting point:	Not available
Solubility:	Emulsifies in water
Specific Gravity:	1.112 at 20° C
Flash Point:	> 38° C
Flammability (explosive) limits:	LEL: 1.1; UEL: 6.6 Vol. % (xylene)
Auto-ignition temperature:	500° C (xylene)
Partition coefficient (octanol/water):	Fenthion: Log P _{ow} = 4.84 at 20° C Xylene: Log P _{ow} = 3.12 – 3.2

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Incompatible materials	Avoid iron and strong oxidising agents. Avoid highly alkaline conditions.

10. STABILITY AND REACTIVITY - continued

Hazardous decomposition products In a fire, carbon monoxide, phosphorus pentoxide and sulphur dioxide may be formed.

Hazardous reactions None

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

The active ingredient in Lebaycid, fenthion, 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.

Lebaycid also contains xylene, a hydrocarbon liquid. Small amounts aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

Inhalation Poisonous by inhalation. High vapour concentrations may be irritating to the respiratory tract and may cause headaches, dizziness, drowsiness, anaesthesia, and other central nervous system effects.

Skin contact Poisonous if absorbed by skin contact. May irritate the skin. Xylene may cause defatting of the skin.

Eye contact Slightly irritating to the eyes.

Ingestion Poisonous if swallowed.

ANIMAL TOXICITY DATA

Acute:

Oral toxicity LD₅₀ rat: 309 - 474 mg/kg (*product*)

Dermal toxicity LD₅₀ rat: > 5000 mg/kg (*product*)

Inhalation toxicity LC₅₀ (4 h) rat: approximately 0.5 mg/L air (aerosol) (*fenthion active ingredient*)

Skin irritation Slightly irritating (rabbit) (*product*)

Irritation to mucous membranes Slightly irritating (rabbit) (*product*)

Sensitisation Fenthion is not a skin sensitiser (guinea pig)

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11. TOXICOLOGICAL INFORMATION - continued

Chronic:

The main health effects from repeated exposure would be toxic symptoms of cholinesterase inhibition as described above. Chronic toxicity studies showed limited evidence of irreversible effects.

Repeated over-exposure to xylene may cause liver and kidney damage. Xylene is not mutagenic, not carcinogenic and does not impair fertility.

12. ECOLOGICAL INFORMATION

Toxic to fish and aquatic invertebrates. Dangerous to birds. Dangerous to bees.
DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity

Fenthion:

Fish toxicity:

LC₅₀: 2.7 mg/L (96 h); golden orfe (*Leuciscus idus melanotus*)

LC₅₀: 0.83 mg/L (96 h); rainbow trout (*Oncorhynchus mykiss*)

Aquatic invertebrate toxicity:

EC₅₀: 0.0057 mg/L (48 h); *Daphnia magna*

Algae toxicity:

IC₅₀: 1.79 mg/L (96 h); green algae (*Desmodesmus subspicatus*)

Bacteria toxicity:

EC₅₀: > 10000 mg/L; activated sludge

Bird toxicity:

LD₅₀: 7.2 mg/kg bobwhite quail

Xylene:

Fish toxicity:

LC₅₀: > 1 - < 10 mg/L

Aquatic invertebrate toxicity:

EC₅₀: > 1 - < 10 mg/L

Algae toxicity:

EC₅₀: > 1 - < 10 mg/L

Bacteria toxicity:

EC₅₀: > 10 - < 100 mg/L

Environmental fate, persistence, degradability, mobility

Fenthion:

Not easily biodegradable. Bioconcentration factor: 396 - 438.

Xylene:

Readily biodegradable. Oxidises rapidly in air by photochemical reactions.

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.

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14. TRANSPORT INFORMATION

UN number	3017
Proper shipping name	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (contains fenthion, xylene)
Class and Subsidiary Risk	6.1 3
Packing Group	III
EPG	Guide 17 – Dangerous Goods - Initial Emergency Response Guide
Hazchem code	3W
Marine Pollutant	Yes (Fenthion is a Class "PP", Severe Marine Pollutant.)

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988
National Registration Authority approval number: 32996

See also Section 2.

16. OTHER INFORMATION

Trademark information Lebaycid® is a Registered Trademark of Bayer.

Preparation information Replaces August 1, 2002 MSDS.
Reasons for revision: 16 heading format, hazard classification, dangerous goods classification.

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