

# MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product name** **Folimat® 800 Insecticide Spray**

**Other names** None

**Product code and pack sizes** 4953275 (5 L), 4953265 (20 L)

**Chemical group** Organophosphorus

**Recommended use** Agricultural insecticide

**Formulation** Soluble 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](http://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**  
**Very dangerous. Cholinesterase inhibitor. Flammable liquid. Very 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, Packing Group II, UN 3017, Marine Pollutant.

**SUSDP classification (Poisons Schedule)** Schedule 7 (Standard for the Uniform Scheduling of Drugs and Poisons)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Omethoate	[1113-02-6]	800
1-methoxy-2-propyl acetate	[108-65-6]	400

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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 **urgent** 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 **urgent** medical aid. Persons assisting the patient should protect themselves from contamination. 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 **urgent** medical aid.
- Ingestion** Wash out mouth with water. Keep patient at rest and seek **urgent** medical advice 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** Folimat 800 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. In severe cases pralidoxime may be administered as well, if given within 24 hours after exposure. Atropine should not be given to a cyanosed patient. 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. Never give patient morphine, theophylline or theophylline-ethylenediamine. Large amounts of intravenous fluids are generally contraindicated because of the threat of pulmonary oedema.

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## 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Waterspray, foam, dry chemical, carbon dioxide, sand.
<b>Hazards from combustion products</b>	In a fire, hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.
<b>Precautions for fire fighters</b>	The product is a flammable liquid, flash point 45° C. Above this temperature explosive vapour/air mixtures may be formed. Fire fighters 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. Isolate hazard area and deny entry. Consider evacuation, taking all relevant factors into account. In case of doubt, evacuate immediate vicinity and request emergency services assistance. 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.
<b>Hazchem Code</b>	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 full body protective clothing and equipment as described in Section 8 - PERSONAL PROTECTION. Keep people and animals away and upwind. Consider evacuation and obtain assistance from emergency services if needed. 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. Seal 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, equipment and clothing used in the cleanup. Dispose of any heavily soiled clothing, placing it in disposal drum.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Keep out of reach of children. Very dangerous. Poisonous if absorbed by skin contact, inhaled or swallowed. Repeated exposure may cause allergic disorders. Repeated minor exposures may have a cumulative poisoning effect. Sensitive workers should use protective clothing. 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, respirator and contaminated clothing. Keep away from excessive heat, open flames and other sources of ignition. Take precautionary measures against static discharges.
<b>Storage</b>	Store in the closed, original container in a cool, dry, well-ventilated area. Do not store for prolonged periods in direct sunlight. Keep away from excessive heat, open flames and other sources of ignition. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.
<b>Flammability</b>	Flammable liquid.

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## 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<sup>3</sup> (50 ppm); STEL 548 mg/m<sup>3</sup> (100 ppm). Skin Notation.

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 should not be exceeded at any time during a working day.

*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 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 very dangerous – poisonous if absorbed by skin contact, inhaled or swallowed.

- Wear face shield
- Wear organic vapour respirator - AS/NZS 1715/1716 approved. In enclosed spaces a respirator with an independent air supply should be worn.
- 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 light brown liquid  
**Odour:** Aromatic  
**pH:** 2.8 – 3.8 (1% in water)  
**Vapour pressure:** 3.3 x 10<sup>-5</sup> 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:** Approx. 1.2 at 20° C  
**Flash Point:** 45° C  
**Flammability (explosive) limits:** LEL: 1.5; UEL: 10 Vol. % in air (solvent)  
**Auto-ignition temperature:** 332° C (omethoate); 333° C (solvent)  
**Partition coefficient (octanol/water):** Omethoate: Log P<sub>ow</sub> = - 0.74

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## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under normal conditions of use.
<b>Conditions to avoid</b>	Heat, flames, sparks.
<b>Incompatible materials</b>	Oxidising agents, alkaline materials, acids
<b>Hazardous decomposition products</b>	In a fire, hydrogen cyanide, carbon monoxide, phosphorus pentoxide, sulphur dioxide and nitrogen oxides may be formed.
<b>Hazardous reactions</b>	Will not polymerise.

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

Omethoate, the active ingredient in Folimat 800, 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.

<b>Inhalation</b>	Poisonous by inhalation.
<b>Skin contact</b>	Poisonous if absorbed by skin contact. Will irritate the skin.
<b>Eye contact</b>	Irritating to the eyes.
<b>Ingestion</b>	Very dangerous. Poisonous if swallowed.

### ANIMAL TOXICITY DATA

#### Acute:

<b>Oral toxicity</b>	LD <sub>50</sub> rat: approx. 40 mg/kg ( <i>derived from data for Folimat SL 500</i> )
<b>Dermal toxicity</b>	LD <sub>50</sub> rat: approx. 500 mg/kg ( <i>derived from data for Folimat SL 500</i> )
<b>Inhalation toxicity</b>	LC <sub>50</sub> (4 h) rat: 0.3 mg/L aerosol ( <i>omethoate</i> )
<b>Skin irritation</b>	Non irritant (rabbit) ( <i>derived from data for Folimat SL 500</i> )
<b>Irritation to mucous membranes</b>	Slightly irritating (rabbit) ( <i>derived from data for Folimat SL 500</i> )
<b>Sensitisation</b>	Omethoate is a skin sensitiser.

## 11. TOXICOLOGICAL INFORMATION - continued

### Chronic:

Repeated exposure to omethoate 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

Very toxic to aquatic invertebrates. Dangerous to bees.  
DO NOT contaminate streams, rivers or waterways with Folimat 800 or the used containers.

### **Ecotoxicity**

#### Omethoate:

##### *Fish toxicity:*

LC<sub>50</sub>: 30 mg/L (96 h); golden orfe (*Leuciscus idus melanotus*)

LC<sub>50</sub>: 9.1 mg/L (96 h); rainbow trout (*Oncorhynchus mykiss*)

##### *Aquatic invertebrate toxicity:*

EC<sub>50</sub>: 0.022 mg/L (48 h); *Daphnia magna*

##### *Algae toxicity:*

IC<sub>50</sub>: 167.5 mg/L (72 h); green algae (*Scenedesmus subspicatus*)

##### *Bird toxicity:*

LD<sub>50</sub>: 79.7 mg/kg; male Japanese quail

LD<sub>50</sub>: 83.4 mg/kg; female Japanese quail

### **Environmental fate, persistence and degradability, mobility**

Omethoate has a relatively high mobility in soil but is very rapidly metabolised.  
DT<sub>50</sub>: only a few days. The main metabolite is CO<sub>2</sub>. 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.

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## 14. TRANSPORT INFORMATION

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

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988  
Australian Pesticides and Veterinary Medicines Authority approval number: 33055

Training in the use of farm chemicals is recommended before handling this product.

See also Section 2.

## 16. OTHER INFORMATION

**Trademark information** Folimat® is a Registered Trademark of Arysta.

**Preparation information** Replaces March 25, 2003 MSDS.  
Reasons for revision: MSDS headings, Product codes, Marine Pollutant, Trademark, Exposure Standards.

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