

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

**Product name** Mesurol® 750 Bird Repellent and Snail and Slug Spray

**Other names** None

**Product code and pack sizes** 4953605 (400 g)

**Chemical group** Carbamate

**Recommended use** Agricultural insecticide and molluscicide

**Formulation** Wettable powder

**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 poisonous. Cholinesterase inhibitor. Very toxic to aquatic organisms.

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

**Risk phrases** R23/25 – Toxic by inhalation and if swallowed.

**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 – CARBAMATE PESTICIDE, SOLID, TOXIC (contains methiocarb), Class 6.1, Packing Group III, UN 2757.

*NOTE: No Dangerous Goods markings are required on the individual 400 g boxes.*

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

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/kg)
Methiocarb (mercaptodimetur)	[2032-65-7]	750
Kaolin	[1332-58-7]	≈ 100
Other ingredients, non hazardous	----	To 100%

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 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 skin with soap and water. Seek medical attention if irritation develops or persists. If signs of poisoning occur get medical attention immediately. 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, preferably from an eye specialist.
- 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** Mesurol 750 contains methiocarb, which is a carbamate insecticide, 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, muscular twitching, spasms, miosis 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. Atropine should not be given to a cyanosed patient. Oximes are contraindicated. Monitor respiratory, cardiac and central nervous system functions. 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.

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 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, methyl isocyanate, sulphur dioxide and nitrogen oxides may be formed.
<b>Precautions for fire fighters</b>	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. 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>	2X

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. 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. Consider evacuation and obtain assistance from emergency services if needed. Prevent spilled material from entering drains or watercourses. Contain spill and sweep up carefully. Avoid creating dust. Collect and store in recovery drums. Clean floor with detergent and water, absorbing wash water with clay granules and transfer this to the drum. Seal and label drums for safe disposal. 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. Product is poisonous if absorbed by skin contact, inhaled or swallowed. Avoid contact with eyes and skin. DO NOT inhale dust or 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, protective clothing and equipment.
<b>Storage</b>	Store in the closed, original container in a dry, cool, well-ventilated, secure area out of direct sunlight.
<b>Flammability</b>	Not readily combustible. However, dust / air mixtures can build up static electrical charges and fine dust may form explosive mixtures in air.

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure standards</b>	There is no NOHSC Exposure standard for methiocarb.  NOHSC Exposure standard for kaolin: TWA: 10 mg/m <sup>3</sup> (as inspirable dust)  <u>Definitions:</u> <i>Exposure standard – Time Weighted Average (TWA)</i> means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
<b>Biological limit values</b>	None allocated. However, monitoring workers for blood cholinesterase levels is recommended.
<b>Engineering controls</b>	Control process conditions to avoid contact. Use local exhaust ventilation during manufacture. Use this product in a well-ventilated area only.
<b>Personal Protective Equipment</b>	Product is very poisonous if absorbed by skin contact, inhaled or swallowed. <ul style="list-style-type: none"><li>• During manufacture a respirator or hood with an independent air supply should be worn. Wear full-face respirator with combined dust and gas cartridge - AS/NZS 1715/1716 approved if handling this product indoors. Otherwise, wear a disposable dust mask.</li><li>• Wear cotton overalls buttoned to the neck and wrist, a washable hat and impervious footwear. Wear a chemical resistant apron in situations where skin exposure is possible.</li><li>• Wear elbow-length PVC gloves.</li><li>• Keep working clothes separate. Remove soiled clothing immediately and wash separately from other laundry.</li></ul>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	White to yellowish powder
<b>Odour:</b>	Weak characteristic
<b>pH:</b>	6.5 to 8.5 (1% in water)
<b>Vapour pressure:</b>	0.015 mPa at 20° C (methiocarb)
<b>Vapour density:</b>	Not available
<b>Boiling point:</b>	Not applicable
<b>Freezing/melting point:</b>	119° C (methiocarb)
<b>Solubility:</b>	Disperses in water (methiocarb is practically insoluble in water)
<b>Bulk Density:</b>	680 (loose) / 560 (packed) mL/100 g
<b>Flash Point:</b>	Not applicable
<b>Flammability (explosive) limits:</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Partition coefficient (octanol/water):</b>	Methiocarb: Log P <sub>ow</sub> = 3.08 at 20° C

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under normal conditions of use. Unstable in highly alkaline media.
<b>Conditions to avoid</b>	Extreme heat, moisture
<b>Incompatible materials</b>	Oxidising agents, alkalis.
<b>Hazardous decomposition products</b>	In a fire, hydrogen cyanide, carbon monoxide, methyl isocyanate, sulphur dioxide and nitrogen oxides may be formed.
<b>Hazardous reactions</b>	None known

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

Methiocarb, the active ingredient in Mesurol 750, is a carbamate pesticide which is a cholinesterase inhibitor. 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.

Prolonged exposure to high dust concentrations may cause irritation to the respiratory tract.

<b>Inhalation</b>	Very poisonous by inhalation.
<b>Skin contact</b>	Poisonous if absorbed by skin contact. May irritate the skin.
<b>Eye contact</b>	May irritate the eyes.
<b>Ingestion</b>	Very poisonous if swallowed.

### ANIMAL TOXICITY DATA

#### Acute:

<b>Oral toxicity</b>	LD <sub>50</sub> rat: 23 to 140 mg/kg ( <i>similar products</i> ) LD <sub>50</sub> rat: ≈ 20 mg/kg ( <i>methiocarb active ingredient</i> )
<b>Dermal toxicity</b>	LD <sub>50</sub> rat: > 5000 mg/kg ( <i>methiocarb active ingredient</i> )
<b>Inhalation toxicity</b>	LC <sub>50</sub> (4 h) rat: 0.433 to 1.208 mg/L ( <i>methiocarb active ingredient</i> )
<b>Skin irritation</b>	Non irritant (rabbit) ( <i>similar products</i> )
<b>Irritation to mucous membranes</b>	Slightly irritating (rabbit) ( <i>similar products</i> )

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 11. TOXICOLOGICAL INFORMATION - continued

**Sensitisation** Methiocarb is not a skin sensitiser.

### **Chronic:**

The main health effects from repeated exposure would be toxic symptoms of cholinesterase inhibition as described above. Methiocarb showed no evidence of oncogenic or carcinogenic potential in animal studies. Methiocarb is not mutagenic, and has shown no teratogenic effects in animal studies. It does not cause delayed neurotoxicity. In the USA methiocarb is considered to be a developmental toxicant.

## 12. ECOLOGICAL INFORMATION

Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Toxic to birds. Methiocarb has a repellent effect on birds. Dangerous to bees. Dangerous to fish. DO NOT contaminate streams, rivers or waterways with Mesurol 750 or the used containers.

### **Ecotoxicity**

#### Methiocarb:

#### *Fish toxicity:*

LC<sub>50</sub>: 0.65 mg/L (96 h); bluegill sunfish (*Lepomis macrochirus*)

LC<sub>50</sub>: 1.1 mg/L (96 h); trout (*Oncorhynchus mykiss*)

#### *Aquatic invertebrate toxicity:*

EC<sub>50</sub>: 7.7 µg/L (48 h); water flea (*Daphnia magna*)

#### *Algae toxicity:*

#### Growth rate:

IC<sub>50</sub>: 2.2 mg/L (72 h); green algae (*Scenedesmus subspicatus*)

#### *Bird toxicity:*

LD<sub>50</sub>: 5 to 10 mg/kg; Japanese quail

LD<sub>50</sub>: 7.1 to 9.4 mg/kg; male mallard ducks

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

Degradation of methiocarb in soil is rapid. Photodegradation contributes to the overall elimination of methiocarb from the environment - DT<sub>50</sub> = 6 to 16 days.

## 13. DISPOSAL CONSIDERATIONS

When disposing, ensure plastic bag is empty. Single rinse before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on-site. Puncture and bury bag in a local authority landfill. If no landfill is available, bury 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 via a reputable disposal contractor to an approved landfill. Do not discharge into drains or sewers.

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 19, 2004

## 14. TRANSPORT INFORMATION

<b>UN number</b>	2757
<b>Proper shipping name</b>	CARBAMATE PESTICIDE, SOLID, TOXIC (contains methiocarb)
<b>Class and Subsidiary Risk</b>	6.1 No subsidiary risk
<b>Packing Group</b>	III
<b>EPG</b>	Guide 34 – Dangerous Goods - Initial Emergency Response Guide
<b>Hazchem code</b>	2X
<b>Marine Pollutant</b>	Yes – Mercaptodimetur is a Class "P" Marine Pollutant

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988  
Australian Pesticides and Veterinary Medicines Authority approval number: 33276

See also Section 2.

## 16. OTHER INFORMATION

**Trademark information** MesuroI® is a Registered Trademark of Bayer.

**Preparation information** Replaces December 8, 2003 MSDS.  
Reasons for revision: Change in Poison Schedule from 6 to 7. Addition of Dangerous Goods *NOTE* on page 1.

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