

# MATERIAL SAFETY DATA SHEET



Date of Issue: March 18<sup>th</sup>, 2009

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Bugmaster<sup>®</sup> Flowable Insecticide**

Other names Sevin<sup>®</sup>

Product code and pack sizes 4207598 (5 L), 4207652 (20 L)

Chemical group Carbamate

Recommended use Agricultural insecticide

Formulation Suspension 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) – NON-DANGEROUS GOOD  
Poisonous. Cholinesterase inhibitor. Very toxic to aquatic organisms.

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

Risk phrases R22 – Harmful if swallowed.  
R40 – Limited evidence of a carcinogenic effect.

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

ADG classification Not classified as a “Dangerous good” for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. For sea transport Bugmaster is an ENVIRONMENTALLY HAZARDOUS SUBSTANCE, Marine Pollutant – See Section 14.

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

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Carbaryl	[63-25-2]	500
Other ingredients (non-hazardous)	-	600

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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.**

<b>Inhalation</b>	If inhaled, remove person to fresh air. If signs of poisoning occur obtain medical advice as above. If there is a breathing problem, give oxygen. If advised by doctor or Poisons Information Centre, atropine tablets may be administered.
<b>Skin contact</b>	Immediately remove contaminated clothing. Wash skin thoroughly 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.
<b>Eye contact</b>	Rinse eyes immediately with clean water for at least 15 minutes and obtain medical advice as above.
<b>Ingestion</b>	Wash out mouth with water. Keep patient at rest and seek urgent medical advice as above. If advised by doctor or Poisons Information Centre, atropine tablets and/or activated charcoal may be administered. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person. Transport patient to doctor or hospital quickly.
<b>First Aid Facilities</b>	Provide eyewash and safety shower facilities in the workplace. Obtain an emergency supply of activated charcoal.
<b>Medical attention</b>	This product contains a carbamate insecticide, carbaryl, which is a rapidly reversible cholinesterase inhibitor. <u>Symptoms of poisoning</u> <i>Local:</i> Skin and eye irritation <i>Systemic:</i> Pinpoint pupils, lacrimation, bradycardia, hypotension, salivation, bronchial secretion, nausea, vomiting, diarrhoea, sweating, muscular twitching, respiratory paralysis, sleepiness, respiratory depression, convulsions. <u>Treatment</u> For <i>local contamination</i> treatment should be symptomatic and supportive after decontamination. Care should be taken to avoid personal contamination. In case of <i>systemic poisoning</i> the following measures should be taken: Monitor respiratory, cardiac and central nervous system. Monitor red blood cell and plasma cholinesterase, and ECG. The medical advice for ingestion of carbaryl, the active ingredient in this product, recommends induction of vomiting under the following circumstances: <ol style="list-style-type: none"><li>1. More than a large mouthful of the product has been ingested.</li><li>2. Patient is fully conscious.</li><li>3. It is less than 30 minutes after ingestion.</li></ol> Carry out gastric lavage followed by administration of activated charcoal and sodium sulphate. Endotracheal intubation and artificial respiration as necessary If necessary anticonvulsant therapy with diazepam i.v. Atropine is an antidote. Administer 2 mg i.v., repeated until fully atropinised. Good oxygenation is essential for the tolerance of atropine. <i>Contraindications:</i> Oxime therapy is strictly contraindicated in carbaryl poisoning. Recovery is expected within 24 hours.

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## 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Water spray, foam, carbon dioxide, dry chemical.
<b>Hazards from combustion products</b>	Thermal decomposition products may include oxides of carbon and nitrogen, and traces of methyl isocyanate.
<b>Precautions for fire fighters</b>	Product will burn under fire conditions. Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715, 1716). Toxic decomposition products may be produced in a fire. Isolate area. Keep unnecessary people away and upwind. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area to prevent contamination of water sources. Dispose of fire control water or other extinguishing agent and spillage later. Persons exposed to contaminated smoke should be examined by a doctor for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.
<b>Hazchem code</b>	Not applicable

## 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 protective clothing and equipment as described in Section 8 – PERSONAL PROTECTION. Keep people and animals away. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in recovery drums. 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.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Keep out of reach of children. Product is poisonous if absorbed by skin contact or swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container, preparing the spray, and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, washable hat, and elbow-length PVC gloves. 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 contaminated clothing.
<b>Storage</b>	Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.
<b>Flammability</b>	Combustible liquid (Class C1)

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure standards</b>	The NOHSC Exposure standard TWA for carbaryl is 5 mg/m <sup>3</sup> .  <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.
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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

<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 poisonous if absorbed by skin contact, inhaled or swallowed. <ul style="list-style-type: none"><li>• Wear goggles if eye exposure is possible.</li><li>• Wear cotton overalls buttoned to the neck and wrist and a washable hat.</li><li>• Wear elbow-length PVC gloves.</li><li>• Use respiratory protection if exposure to aerosols or mists is possible (AS/NZS 1715/1716 approved respirator).</li></ul>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Viscous off white suspension
<b>Odour:</b>	Slight naphtha smell
<b>pH:</b>	3.5 to 5.5
<b>Vapour pressure:</b>	$4.1 \times 10^{-2}$ mPa at 23.5° C (technical carbaryl)
<b>Vapour density:</b>	Not available
<b>Boiling point:</b>	Approx. 100° C
<b>Freezing/melting point:</b>	- 3° C (freezing point)
<b>Solubility:</b>	Forms a suspension in water
<b>Specific gravity:</b>	1.11 at 20° C
<b>Flash Point:</b>	> 93° C
<b>Flammability (explosive) limits:</b>	LEL: 2.6% v/v; UEL: 19% v/v
<b>Auto-ignition temperature:</b>	530° C
<b>Partition coefficient (octanol/water):</b>	<i>Carbaryl</i> : Log $P_{ow}$ = 1.85

## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under normal conditions of use.
<b>Conditions to avoid</b>	Extreme heat. Exothermic decomposition occurs at 175 – 190° C.
<b>Incompatible materials</b>	Strong acids, bases. This product will be hydrolysed by alkalis to 1-naphthol.
<b>Hazardous decomposition products</b>	Thermal decomposition products may include oxides of carbon and nitrogen, and traces of methyl isocyanate.
<b>Hazardous reactions</b>	None

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

This product contains carbaryl, a reversible cholinesterase inhibitor. Exposure may cause toxic signs and symptoms including pinpoint pupils, lacrimation, bradycardia, hypotension, salivation, bronchial secretion, nausea, vomiting, diarrhoea, sweating, muscular twitching, respiratory paralysis, sleepiness, respiratory depression, convulsions.

Repeated overexposure may cause more pronounced signs and symptoms.

<b>Inhalation</b>	Poisonous if inhaled. May produce symptoms as above.
<b>Skin contact</b>	Poisonous if absorbed through the skin. May produce symptoms as above. May irritate the skin.
<b>Eye contact</b>	Will irritate the eyes.
<b>Ingestion</b>	Poisonous if swallowed.

### ANIMAL TOXICITY DATA - *PRODUCT*

#### Acute:

<b>Oral toxicity</b>	LD <sub>50</sub> rat: 590 mg/kg
<b>Dermal toxicity</b>	LD <sub>50</sub> rabbit: > 2000 mg/kg
<b>Inhalation toxicity</b>	LC <sub>50</sub> (4 h) rat: > 1.8 mg/L
<b>Skin irritation</b>	Minimally irritating (rabbit)
<b>Eye irritation</b>	Slightly irritating (rabbit)
<b>Sensitisation</b>	Not sensitising (guinea pig)

#### Chronic:

Carbaryl has been shown to cause tumours in laboratory animals in lifetime feeding studies. Carbaryl, when administered by various routes, at doses toxic to the maternal animals, has been shown to produce developmental toxicity in a number of species. Carbaryl produces no teratogenic effect in the absence of maternal toxicity.

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## 12. ECOLOGICAL INFORMATION

Bugmaster is very toxic to aquatic organisms. It is toxic to bees.  
DO NOT contaminate streams, rivers or waterways with Bugmaster or the used containers.

### Ecotoxicity

#### Carbaryl:

<i>Fish toxicity:</i>	LC <sub>50</sub> (96 h) rainbow trout 1.3 mg/L
	LC <sub>50</sub> (96 h) sheepshead minnow 2.2 mg/L
	LC <sub>50</sub> (96 h) bluegill sunfish 10 mg/L
<i>Daphnia toxicity:</i>	LC <sub>50</sub> (48 h) Daphnia magna 0.006 mg/L
<i>Algae toxicity:</i>	EC <sub>50</sub> (5 d) algae 1.1 mg/L ( <i>Selenastrum capricornutum</i> )
<i>Bird toxicity:</i>	LD <sub>50</sub> young mallard ducks > 2179
	LD <sub>50</sub> young pheasants > 2000 mg/kg
	LD <sub>50</sub> Japanese quail 2230 mg/kg
	LD <sub>50</sub> pigeons 1000 – 3000 mg/kg

### Environmental fate, persistence, degradability, mobility

Under aerobic conditions, carbaryl at 1 ppm degraded with DT<sub>50</sub> 7-14 days in a sandy loam and 14-28 days in a clay loam.

## 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 via a reputable disposal contractor.

## 14. TRANSPORT INFORMATION

UN number	Not applicable
Proper shipping name	Not applicable
Class and Subsidiary Risk	Not applicable
Packing Group	Not applicable
EPG	Not applicable
Hazchem code	Not applicable
Marine Pollutant	Yes. If shipped by sea, Bugmaster is classified as ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains carbaryl), Class 9, UN 3082, Packing Group III, Marine Pollutant, Class "P".

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act, 1994  
Australian Pesticides and Veterinary Medicines Authority approval number: 40146

See also Section 2.

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## 16. OTHER INFORMATION

**Trademark information** Bugmaster® and Sevin® are Registered Trademarks of Bayer.

**Preparation information** Replaces October 27, 2005 MSDS.  
Reasons for revision: Handling and storage

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