

MATERIAL SAFETY DATA SHEET



Date of Issue: September 10, 2007

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name Larvin® 800 WG Insecticide

Other names None

Product code and pack sizes 4208020 (15 kg)

Chemical group Oxime carbamate

Recommended use Agricultural insecticide

Formulation Water dispersible granule

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. 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.
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 – CARBAMATE PESTICIDE, SOLID, TOXIC (contains thiodicarb), Class 6.1, Packing Group II, UN 2757. 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/kg)
Thiodicarb	[59669-26-0]	800
Other ingredients, non hazardous	----	200

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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. Obtain medical advice as above. If breathing stops or shows signs of failing, administer cardio-pulmonary resuscitation (CPR). Give oxygen if available. Get to a doctor or hospital quickly. If advised by doctor or Poisons Information Centre, atropine tablets may be administered.

Skin contact 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.

Eye contact Rinse eyes immediately with clean water for at least 15 minutes and obtain medical advice.

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 This product contains a carbamate insecticide, thiodicarb, which is a rapidly reversible cholinesterase inhibitor.
Symptoms of poisoning
Local: Eye irritation, slight skin irritation
Systemic: Pinpoint pupils, lacrimation, bradycardia, hypotension, salivation, bronchial secretion, nausea, vomiting, diarrhoea, sweating, muscular twitching, respiratory paralysis, sleepiness, respiratory depression, convulsions.
Treatment
For *local contamination* treatment should be symptomatic and supportive after decontamination. Care should be taken to avoid personal contamination.
In case of *systemic poisoning* 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 thiodicarb, the active ingredient in this product, recommends induction of vomiting under the following circumstances:
1. More than a large mouthful of the product has been ingested.
2. Patient is fully conscious.
3. It is less than 30 minutes after ingestion.
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.
Contraindications: Narcotics and other sedatives should not be used.
Recovery is expected within 24 hours.

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5. FIRE FIGHTING MEASURES

Extinguishing media	Foam, carbon dioxide, dry chemical, water spray
Hazards from combustion products	Thermal decomposition products may include oxides of carbon, nitrogen and sulphur, acetonitrile, dimethyl sulfide, methomyl, methyl isocyanate.
Precautions for fire fighters	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. 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.
Hazchem code	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 protective clothing and equipment as described in Section 8 – PERSONAL PROTECTION. Keep people and animals away. Prevent spilled material from entering drains or watercourses. Sweep up or shovel spilled material into recovery drums. Avoid creation of dust. 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

Handling	Keep out of reach of children. Product is poisonous if absorbed by skin contact, inhaled or swallowed. May irritate the eyes and skin. 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. Wash rubber respirator with detergent and warm water.
Storage	Store in the closed, original container in a dry, cool, secure, well-ventilated area. Do not store for prolonged periods in direct sunlight.
Flammability	Non flammable. However, if dust is created, dust/air mixtures can build up static electrical charges and fine dust may form explosive mixtures in air.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards	There are no NOHSC Exposure standards for thiodicarb or other ingredients in this product.
Biological limit values	None allocated. However, monitoring workers for blood cholinesterase levels is recommended.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

- Engineering controls** Control process conditions to avoid contact. Use local exhaust ventilation during manufacture and areas where dust may be formed. Use this product in a well-ventilated area only.
- Personal Protective Equipment** Product is poisonous if absorbed by skin contact, inhaled or swallowed.
- Wear face shield or goggles and a AS/NZS 1715/1716 approved half facepiece respirator with combined dust and gas cartridge.
 - Wear cotton overalls buttoned to the neck and wrist, washable hat and impervious footwear.
 - Wear elbow-length PVC gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Cream coloured granules
- Odour:** Slight sulphurous
- pH:** Approximately 6.0 (10% dilution)
- Vapour pressure:** 5.7 mPa at 20° C (thiodicarb)
- Vapour density:** Not available
- Boiling point:** Not applicable
- Freezing/melting point:** Not available
- Solubility:** Disperses in water (thiodicarb is practically insoluble)
- Bulk density:** 0.64 g/cm³
- Flash Point:** Not flammable
- Flammability (explosive) limits:** Not applicable
- Auto-ignition temperature:** 265° C
- Partition coefficient (octanol/water):** Thiodicarb: Log P_{ow} = 1.62

10. STABILITY AND REACTIVITY

- Chemical stability** Stable under normal conditions of use.
- Conditions to avoid** Extreme heat, dusting conditions
- Incompatible materials** Larvin 800 WG is unstable under highly acidic or highly alkaline conditions. Avoid strong acids, strong bases, brass, iron chlorides, rust, metal salts, cupric chloride.
- Hazardous decomposition products** Thermal decomposition products may include oxides of carbon, nitrogen and sulphur, acetonitrile, dimethyl sulfide, methomyl, methyl isocyanate.
- Hazardous reactions** Exothermic decomposition at 175 to 190° C.

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11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

This product contains thiodicarb, a reversible cholinesterase inhibitor. Exposure may cause toxic signs and symptoms due to the stimulation of the parasympathetic nervous system. Symptoms include 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.

Inhalation	Poisonous if inhaled. May produce symptoms as above.
Skin contact	Poisonous if absorbed through the skin. May produce symptoms as above. May irritate the skin. May cause sensitisation by skin contact.
Eye contact	Will irritate the eyes.
Ingestion	Poisonous if swallowed.

ANIMAL TOXICITY DATA - PRODUCT

Acute:

Oral toxicity	LD ₅₀ rat: 129 mg/kg
Dermal toxicity	LD ₅₀ rabbit: > 2000 mg/kg
Inhalation toxicity	LC ₅₀ (4 h) rat: 0.52 mg/L (dust)
Skin irritation	Slightly irritating (rabbit)
Eye irritation	Irritating (rabbit)
Sensitisation	Sensitising (guinea pig)

Chronic:

Thiodicarb is not listed as a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or the American Conference of Industrial Hygienists (ACGIH). Thiodicarb was not a reproductive toxicant and was not teratogenic in animal studies. The overall weight of evidence indicates thiodicarb is non-genotoxic or non-mutagenic based on a battery of *in vitro* and *in vivo* mutagenicity studies.

12. ECOLOGICAL INFORMATION

Larvin 800 WG is toxic to fish, aquatic invertebrates and mammals. It is toxic to bees exposed by direct treatment.

DO NOT contaminate streams, rivers or waterways with Larvin 800 WG or the used containers.

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12. ECOLOGICAL INFORMATION - continued

Ecotoxicity

Thiodicarb:

Fish toxicity:

LC₅₀ (96 h) for rainbow trout > 3.3 mg/L (flow through)

LC₅₀ (96 h) for bluegill sunfish 1.4 mg/L (flow through)

Aquatic invertebrate toxicity:

EC₅₀ (48 h) for *Daphnia magna* 0.027 mg/L (flow through)

Algae toxicity:

IC₅₀ (72 h) for algae > 18 mg/L (*Selenastrum capricornutum*)

Bird toxicity:

Dietary LC₅₀ (8 days) for mallard duck > 5620 mg/kg

Dietary LC₅₀ (8 days) for bobwhite quail > 5620 mg/kg

Environmental fate, persistence, degradability, mobility

Thiodicarb is rapidly degraded in soils of various types, under both aerobic and anaerobic conditions, by hydrolysis and photolysis. DT₅₀ of thiodicarb in soil is 3-8 days depending on soil type.

Readily biodegradable. Bioconcentration factor (BCF): 6.3

13. DISPOSAL CONSIDERATIONS

Single rinse plastic liner in carton before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. 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	2757
Proper shipping name	CARBAMATE PESTICIDE, SOLID, TOXIC (contains thiodicarb)
Class and	6.1
Subsidiary Risk	No subsidiary risk
Packing Group	II
EPG	Guide 34 – Dangerous Goods - Initial Emergency Response Guide
Hazchem code	2X
Marine Pollutant	Yes.

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988
Australian Pesticides and Veterinary Medicines Authority approval number: 48522

See also Section 2.

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16. OTHER INFORMATION

Trademark information Larvin® is a Registered Trademark of Bayer.

Preparation information Replaces February 2, 2005 MSDS.
Reasons for revision: Marine pollutant.

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