

**Section 1 - Identification of the Material and Supplier**

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Level 2, 32 Lexington Drive	
Bella Vista NSW 2153 AUSTRALIA	Emergency (24 hr): 1800 033 111

Chemical nature: Pellets containing metaldehyde

Trade Name: **Defender Snail & Slug Pellets**

APVMA Code: 48916

Product Use: Molluscicide for use as described on the product label.

Creation Date: **May, 2017**

This version issued: **May, 2017** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification**Statement of Hazardous Nature**

This product is classified as: Not classified as hazardous according to the criteria of SWA.

Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

SUSMP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated

GHS Signal word: NONE. Not hazardous.

PREVENTION

- P261: Avoid breathing dusts.
- P262: Do not get in eyes, on skin, or on clothing.
- P264: Wash contacted areas thoroughly after handling.
- P281: Use personal protective equipment as required.

RESPONSE

- P335: Brush off loose particles from skin.
- P362: Take off contaminated clothing and wash before reuse.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P370+P378: In case of fire, use carbon dioxide, dry chemical, foam.

STORAGE

- P410: Protect from sunlight.
- P402+P404: Store in a dry place. Store in a closed container.

DISPOSAL

- P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: Green pellets

Odour: Faint sweet odour

Major Health Hazards: Within a few hours of accidental or intentional ingestion, the following symptoms appeared in humans: severe abdominal pain, nausea, vomiting, diarrhoea, fever, convulsions, coma, and persistent memory loss. Other symptoms of high acute exposure include increased heart rate, panting, asthma attack, depression, drowsiness, high blood pressure, inability to control the release of urine and faeces, incoordination, muscle tremors, sweating, excessive salivation, tearing, cyanosis, acidosis, stupor, and unconsciousness and eventual death in extreme cases.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, g/kg	TWA (mg/m ³)	STEL (mg/m ³)
Metaldehyde	108-62-3	15	not set	not set
Other non hazardous ingredients	secret	to 1 kg	not set	not set

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This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Skin Contact: Gently brush away excess particles. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

Eye Contact: Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the particles are removed, while holding the eyelid(s) open. Obtain medical attention if irritation persists, or if particles are lodged in surface of the eye(s). Take special care if exposed person is wearing contact lenses.

Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: Combustible solid.

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: Combustible solid.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include PVC and Nitrile. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable dust mask. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to

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persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**. Exposure limits have not been established by SWA for any of the significant ingredients in this product.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: PVC, nitrile.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask. Otherwise, not normally necessary.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Green pellets
Odour:	Faint sweet odour
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Solid at normal temperatures.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	Not applicable.
Specific Gravity:	No data.
Water Solubility:	Some, but not all ingredients are soluble. Pellets disintegrate in water.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water Distribution:	No data
Viscosity:	Not applicable.
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong oxidising agents.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: Polymerisation reactions are unlikely; they are not expected to occur.

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Section 11 - Toxicological Information

Toxicity: Acute toxicity: Metaldehyde is slightly to harmful to toxic by ingestion, with reported oral LD₅₀ values of 227 to 690 mg/kg in rats, 207 mg/kg in cats, 100 to 1000 mg/kg in dogs, 200 mg/kg in mice, 175 to 700 mg/kg in guinea pigs, and 290 to 1250 mg/kg in rabbits. A child died after ingesting 3000 mg (approximately 75 to 100 mg/kg for a 30 to 40 kg child) of metaldehyde. Via the dermal route, it is also moderately toxic. The dermal LD₅₀ for this molluscicide in rats is from 2275 mg/kg to greater than 5000 mg/kg. Metaldehyde is harmful by inhalation; the 4-hour inhalation LC₅₀ in rats is 0.2 mg/L, and the 2-hour inhalation LC₅₀ in mice is 0.35 mg/L. Irritation of the skin, eye, and mucous membranes of the upper airways and gastrointestinal tract may result from contact with metaldehyde. Within a few hours of accidental or intentional ingestion, the following symptoms appeared in humans: severe abdominal pain, nausea, vomiting, diarrhoea, fever, convulsions, coma, and persistent memory loss. Other symptoms of high acute exposure include increased heart rate, panting, asthma attack, depression, drowsiness, high blood pressure, inability to control the release of urine and faeces, incoordination, muscle tremors, sweating, excessive salivation, tearing, cyanosis, acidosis, stupor, and unconsciousness and eventual death in extreme cases. Kidney injury and liver cell death ('necrosis') may also occur. Mental deficiencies and memory loss from ingestion poisoning may persist for 1 year or more. It is thought that the formation of acetaldehyde in the gastrointestinal tract is responsible for the narcotic effects observed with metaldehyde exposure.

Chronic toxicity: Dosages which are not toxic when given singly do not cause illness when repeated. Long-term, repeated skin exposure to metaldehyde may result in dermatitis (skin inflammation) in humans. Prolonged eye exposure can cause conjunctivitis. In 2-year toxicity studies and three-generation reproductive studies in rats, changes in liver enzyme activity and increased liver and ovary weight at dietary doses of about 12.5 mg/kg/day were found; 50% of female rats given this dose showed paralysis. Effects on the brain (e.g., impairment of memory) may also be possible with chronic exposure at very high levels.

Reproductive effects: During a three-generation study of rats exposed to chronic ingestion of metaldehyde, adverse effects were seen on reproduction and on the survival rate of offspring. Doses of 50 and 250 mg/kg/day interfered with the reproduction of female rats in another three-generation test. These data suggest that metaldehyde is likely to cause reproductive effects only at high levels.

Teratogenic effects: Dietary doses of 10, 50, and 250 mg/kg of metaldehyde were not teratogenic in three generations of experimental female rats. There were some increases in relative liver weights in some offspring. This evidence suggests that metaldehyde is unlikely to cause teratogenic effects.

Mutagenic effects: Metaldehyde has been reported to be a suspected mutagen. However, there was no evidence of mutagenicity when metaldehyde was tested on five strains of bacteria. The evidence regarding mutagenicity of metaldehyde is inconclusive.

Carcinogenic effects: Dietary doses as high as 250 mg/kg/day over a 2-year period did not increase the incidence of tumours in male and female rats. The study suggests that metaldehyde is not carcinogenic.

Organ toxicity: Metaldehyde or its breakdown by-products, 'metabolites,' may cause problems in the central nervous system by an unknown mechanism. It may also cause lesions in kidneys and the liver following systemic distribution, as well as inflammation of the skin, eye, and mucous membranes of the airways and gastrointestinal tract with direct contact.

Fate in humans and animals: Metaldehyde is readily absorbed into the bloodstream from the gastrointestinal tract. Metaldehyde's primary decomposition product in the body is acetaldehyde. Its metabolites can cross the blood-brain barrier, as evidenced by their effect on the level of consciousness of animals.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Metaldehyde	No risk phrases at concentrations found in this product
<ul style="list-style-type: none">Flammable solid - category 2Acute toxicity - category 4	

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

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Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product is likely to be mechanically irritating. If exposure is minor or brief, no long term effects should result. However, if material is not removed promptly, scratches to surface of the eye may result with long term consequences.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. This product contains denatonium benzoate, which gives the product a strongly bitter taste and discourages humans and some non-target animals from it. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Effects on birds: Death of birds feeding in metaldehyde-treated areas has been reported, although the precise acute oral LD₅₀ values or subchronic dietary LC₅₀ values were unavailable. Excitability, tremors, muscle spasms, diarrhoea, and difficult or rapid breathing was observed in poultry that were exposed to metaldehyde.

Effects on aquatic organisms: Metaldehyde is reported to be practically nontoxic to aquatic organisms.

Effects on other organisms: The 4% pelleted bait is reported to be toxic to wildlife. When used as directed, bait agents with 6% active ingredient are not toxic to bees (30). Bait pellets containing metaldehyde are attractive to dogs. Pets should be confined during application, and kept away from application and storage sites.

Environmental Fate:

Breakdown in soil and groundwater: Metaldehyde is of low persistence in the soil environment, with a half-life on the order of several days. It is weakly sorbed by soil organic matter and clay particles, and is soluble in water. Due to its low persistence, it is not a significant risk to groundwater.

Breakdown in water: Metaldehyde undergoes rapid hydrolysis to acetaldehyde, and should be of low persistence in the aquatic environment.

Breakdown in vegetation: Many types of flowers lose their colour when they come in contact with metaldehyde dust or spray.

Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC

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CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS 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 MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. 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.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)

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