## Section 1 - Identification of The Material and Supplier

**FARMALINX Pty Ltd**
**Level 25, Suite 2506 (Tower 2)**
**101 Grafton Street**
**Bondi Junction, NSW 2022**

**Phone: 02 9389 2455**
**Fax: 02 9389 2844**
**www.farmalinx.com**

| | |
|---|---|
| **Chemical nature:** | Metaldehyde is a polymer of acetaldehyde. |
| **Trade Name:** | **FarmaLinx Snail Trail Snail and Slug Pellets** |
| **APVMA number:** | 65053 |
| **Product Use:** | Molluscicide. |
| **Creation Date:** | **June, 2010** |
| **This version issued:** | **July, 2020** and is valid for 5 years from this date. |

## Section 2 - Hazards Identification

**Statement of Hazardous Nature**

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

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** Not Hazardous - No criteria found.
**Safety Phrases:** S22, S25. Do not breathe dust. Avoid contact with eyes.
**SUSMP Classification:** S5
**ADG Classification:** None allocated. Not a Dangerous Good.
**UN Number:** None allocated

### GHS Signal word: NONE. Not hazardous.

**PREVENTION**

P102: Keep out of reach of children.
P281: Use personal protective equipment as required.

**RESPONSE**

P353: Rinse skin or shower with water.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P332+P313: If skin irritation occurs: Get medical advice.
P337+P313: If eye irritation persists: Get medical advice.
P391: Collect spillage.
P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

**STORAGE**

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:** No specific odour.
**Major Health Hazards:** Within a few hours of accidental or intentional ingestion, the following symptoms appeared in humans: severe abdominal pain, nausea, vomiting, diarrhea, 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. However, the concentration of metaldehyde in this product is so low that very large quantities would need to be ingested for poisoning to occur.

## Potential Health Effects

See section 11 for Chronic exposure studies.

### Inhalation
**Short term exposure:** Available data indicates that this product is not harmful. However, this product is unlikely to cause any discomfort or irritation.

### Skin Contact:
**Short term exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition, this product is unlikely to cause any discomfort in normal use.

### Eye Contact:
**Short term exposure:** Available data shows that this product is not harmful.

### Ingestion:
**Short term exposure:** Available data shows that this product is not harmful. This product is unlikely to cause any irritation problems in the short or long term.

### 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 3 - Composition/Information on Ingredients

| Ingredients | CAS No | Conc,% | TWA (mg/m$^3$) | STEL (mg/m$^3$) |
|---|---|---|---|---|
| Metaldehyde | 108-62-3 | 15g/kg | not set | not set |
| Other non hazardous ingredients | secret | to 100 | not set | not set |

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

The 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 should not be exceeded for more than 15 minutes and should not be repeated for 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 and is available at all times. Have this SDS with you when you call.

**Contact or Poisoning:** From the available evidence, this product would appear to offer no significant health hazard by any exposure route. Consequently, First Aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

## Section 5 – Fire Fighting Measures

**Fire and Explosion Hazards**: 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:** Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.
**Fire Fighting:** When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

**Flash point:** No data
**Upper Flammability Limit:** No data.
**Lower Flammability Limit:** No data.
**Autoignition temperature:** No data.
**Flammability Class:** No data.

## 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 cotton, rubber, PVC. 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. 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 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 class of poison. Store packages of this product in a cool place. Make sure that the product does not come into contact with substances listed under "Materials to avoid" 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**.

**SWA Exposure Limits** **TWA (mg/m$^3$)** **STEL (mg/m$^3$)**
Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Metaldehyde is set at 0.005mg/kg/day. The corresponding NOEL is set at 5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, June 2014.

**Ventilation:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.
**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:** The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when handling this product.
**Protective Material Types:** We suggest that protective clothing be made from the following materials: cotton, rubber, PVC.
**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.

## Section 9 - Physical and Chemical Properties:

| | |
|---|---|
| **Physical Description & colour**: | Green pellets. |
| **Odour:** | No specific odour. |
| **Boiling Point:** | Not applicable. |
| **Freezing/Melting Point:** | Decomposes before melting. |
| **Volatiles:** | No specific data. Expected to be low at 100°C. |
| **Vapour Pressure:** | No data. Expected to be low at usual room temperatures. |
| **Vapour Density:** | No data. |
| **Specific Gravity:** | No data. |
| **Water Solubility:** | Slowly dissolves in water. |
| **pH:** | No data. |
| **Volatility:** | No data. |
| **Odour Threshold:** | No data. |

**Evaporation Rate:** No data.
**Coeff Oil/water distribution**: No data
**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:** None known.
**Incompatibilities:** strong oxidising agents.
**Fire Decomposition:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
**Polymerisation:** This product is unlikely to undergo polymerisation processes.

## Section 11 – Toxicological Information

**Toxicity:** **Acute toxicity:** Metaldehyde is slightly to moderately toxic by ingestion, with reported oral $LD_{50}$ 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 $LD_{50}$ for this Molluscicide in rats is from 2275 mg/kg to greater than 5000 mg/kg. Metaldehyde is moderately toxic by inhalation; the 4-hour inhalation $LC_{50}$ in rats is 0.2 mg/L, and the 2-hour inhalation $LC_{50}$ 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, diarrhea, 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 tumors in male and female rats. The study suggests that metaldehyde is not carcinogenic.
**Organ toxicity:** Metaldehyde or its breakdown byproducts, '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.

## Section 12 – Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

**Effects on birds:** Death of birds feeding in metaldehyde-treated areas has been reported, although the precise acute oral $LD_{50}$ values or subchronic dietary $LC_{50}$ values were unavailable. Excitability, tremors, muscle spasms, diarrhea, 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:** A 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. 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 perstistence in the aquatic environment.
**Breakdown in vegetation:** Many types of flowers lose their color 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

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

## Section 15 – Regulatory Information

**AICS:** All of the significant ingredients in this product 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 (7th edition) |
| **AICS** | Australian Inventory of Chemical Substances |
| **SWA** | Safe Work Australia, formerly ASCC and NOHSC |
| **CAS number** | Chemical Abstracts Service Registry Number |
| **IARC** | International Agency for Research on Cancer |
| **NOS** | Not otherwise specified |
| **NTP** | National Toxicology Program (USA) |
| **R-Phrase** | Risk Phrase |
| **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” (December 2011)

http://www.kilford.com.au/ Phone (02)9251 4532