



# KOMBAT SNAIL BAIT

Version 1.2

Revision Date December 2016

## 1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND COMPANY UNDERTAKING:

### PRODUCT INFORMATION

**Product Name** : KOMBAT SNAIL BAIT  
**Design Code** :  
**Registration No.** : L2848, Act No. 36 of 1947  
**Use** : Insecticide  
**Company** : Kombat (Pty) Ltd  
39 Dr. Gordon Road  
Greytown  
3250  
**Telephone** : +27-33-417-1906/7



Harmful



Dangerous for the environment

### EMERGENCY TELEPHONE NUMBERS

#### SPILLAGES:

Emergency telephone: +27-82-446-8946 (all hours)

#### POISONING INCIDENTS:

Poison Information Centre of the Western Cape: +27-861-555-777 (all hours)  
Griffon Poison Information Centre +27-82-446-8946 (all hours)  
UFS Pharmacology/Toxicology information centre: +27-82-491-0160

## 2. HAZARD IDENTIFICATION

### Metaldehyde

**Toxicity class:** WHO III, EPA III, II

**ADI:** 0.025 mg/kg b.w

### Carbaryl

**Toxicity class:** WHO II, EPA I (Technical)

**ADI:** 0.01 mg/kg b.w

**NOEL:** 200 mg/kg (rats) - 2 year

**ACGIH:** 5 mg/m<sup>3</sup> Carbaryl

10 mg/m<sup>3</sup> Nuisance dust

**STEL:** 15 mins 10 mg/m<sup>3</sup>

**TWA:** 8 hours 5 mg/m<sup>3</sup>



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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1 Common name: Metaldehyde

**Chemical Name:** 2,4,6,8-tetramethyl-1,3,5,7-tetraoxacyclooctane  
(IUPAC)

**CAS No.:** 37273-91-9

**Chemical Family:** Metaldehyde

**Chemical Formula:** C<sub>8</sub>H<sub>16</sub>O<sub>4</sub> (tetramer)

**Molecular weight:** 176.2

### 3.2 Common name: Carbaryl

**Chemical Name:** 1-naphthyl methylcarbamate  
(IUPAC)

**CAS No.:** 63-25-2

**Chemical Family:** Carbamate 50 g/kg

**Chemical Formula:** C<sub>12</sub>H<sub>11</sub>NO<sub>2</sub>

**Molecular weight:** 201.2

**Use:** A Ready-to-use molluscicide for agricultural, and home & garden uses.

**Formulation:** Ready-to-use bait

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## 4. FIRST- AID MEASURES

Remove the affected person from the work area. Take him to a well-ventilated place and protect him from hypothermia.

**Do not administer anything orally and never make a drowsy, comatose or convulsive person vomit.** Contact the poison information centre or a physician. Consult a physician and show him the packing or label.

### Inhalation:

The preparation is a non-dusty pellet. Inhalation is not applicable as a route of exposure in normal condition of use.

Chronic exposure:

Prolonged or repeated exposure may cause effects such as nervous and digestive disorder.

First aid:

Remove from exposure area to fresh air immediately. If breathing has stopped, give mechanical artificial respiration (not direct mouth-to-mouth). Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Treat symptomatically and supportively. Qualified personnel should perform administration of oxygen. Get medical attention immediately.

### Skin contact :

First aid:

Some compounds may cause irritation. Remove contaminated clothing. Wash before re-use. Rinse skin immediately with soap and water.

Treat respiratory difficulty with mechanical artificial respiration. Get medical attention immediately.

### Eye contact :

Acute exposure:

Direct contact may cause pain and irritation

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**First aid:**

Irrigate eyes with water or saline solution for 15-20 minutes. Remove contact lenses if present. If symptoms of poisoning occur, treat respiratory difficulty with mechanical artificial respiration and oxygen. Observe patient for at least 24-36 hours. Get medical attention immediately. Qualified medical personnel should administer oxygen.

**Ingestion:**

Rinse mouth with water. If swallowed, do not induce vomiting since it is important that no amount of the material should enter the lungs (aspiration). Contact physician, Poison Center or emergency clinic before inducing vomiting. Keep at rest. Do not induce vomiting or give anything by mouth to an unconscious person.

**First aid:****Metaldehyde**

Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Treat symptomatically and supportively. Qualified medical personnel must perform administration of oxygen and gastric lavage. Get medical attention immediately.

**Carbaryl**

**Do not give morphine, aminophylline, phenol-thiazines, reserpine, furosemide, or ethacrynic acid. Drugs like 2 PAM are not effective in poisoning with Carbaryl AND SHOULD NOT BE USED.**

Treat symptomatically and supportively. Qualified medical personnel must perform administration of oxygen and gastric lavage. Get medical attention immediately.

**Advice to physician:****Metaldehyde** -No Antidote.

Treat symptomatically. For the active constituent metaldehyde: Effects may be delayed. Remove metaldehyde by gastric lavage with a 2-5% sodium bicarbonate solution and activated charcoal, effective up to 12-24 hours after swallowing. The ingestion of large quantities may present anticholinesterase effects.

**Carbaryl**

## Antidote:

The following antidote has been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.

*For cholinesterase inhibitors:* Establish clear airway and tissue oxygenation by aspiration of secretions, and if necessary, by assisted pulmonary ventilation with oxygen. Improve tissue oxygenation as much as possible before administering atropine to minimise the risk of ventricular fibrillation. Administer atropine sulphate intravenously, or intramuscularly if iv injection is not possible. In moderately severe poisoning administer atropine sulphate, 0.4-2.0 mg repeated every 15 minutes, until atropinization is achieved (tachycardia, flushing, dry mouth, mydriasis). Maintain atropinization by repeated doses for 2-12 hours, or longer, depending on the severity of poisoning. The appearance of rales in the lung bases, miosis, salivation, nausea, bradycardia, are all indications of inadequate atropinization. Severely poisoned individuals may exhibit remarkable tolerance to atropine. Two or more times the dosages suggested above may be needed. Persons not poisoned or only slightly poisoned, however, may develop signs of atropine toxicity from such large dosages: fever, muscle fibrillations, and delirium are main signs of atropine toxicity. If these signs appear while the patient is fully atropinized, atropine administration should be discontinued, at least temporarily. Observe treated patients closely at least 24 hours to ensure that symptoms (possibly pulmonary oedema) do not recur as atropinization wears off. In very severe poisonings, metabolic disposition of toxicant may require several hours or days during which atropinization must be maintained. Markedly lower levels of urinary metabolites indicate that atropine dosage can be tapered off. As dosage is reduced, check the lung bases frequently for rales. If rales are heard or other symptoms return, re-establish atropinization promptly.



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### **5. FIRE-FIGHTING MEASURES**

**Fire and explosion hazard:**

Slight fire hazard when exposed to heat or flame. Dust-air mixtures may ignite or explode.

**Extinguishing agents:**

Extinguish small fires with carbon dioxide, dry powder, Halon, water spray, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for firefighting for later disposal

**Firefighting:**

Move containers from fire area if possible. Fight fire from maximum distance. Stay away from storage tank ends. Contain fire control water for later disposal. Do not scatter material, extinguish only if flow can be stopped. Use flooding amounts of water as a fog as solid streams may be ineffective. Cool containers with flooding amounts of water as far a distance as possible. Use water spray to absorb toxic vapours. Avoid breathing toxic vapours. Keep upwind. Consider evacuation of downwind area if material is leaking.

**Special Hazards:**

Fire may produce irritating or poisonous vapours, mists or other products of combustion.

**Personal protective equipment:**

Carbaryl dust may be transported in the smoke from a fire. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

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### **6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions:**

Avoid contact with skin and eyes. Do not breathe in dust or fumes. For personal protection see Section 8.

**Environmental precautions:**

Do not allow entering drains or watercourses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

**Occupational spill:**

Do not touch spilled material. Stop leak if you can do so without risk. Use water spray to reduce vapours (contain any water used). For **small spills**, sweep up with sand or other suitable absorbent material, such as sawdust, and place into containers for later disposal. Move containers from spill area. For **larger spills**, contain material far ahead of spill for later disposal. Keep spectators away. Isolate hazard area and deny entry. Ventilate closed spaces before entering.

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## 7. HANDLING AND STORAGE

### Handling:

Slight toxic by inhalation and toxic if swallowed. Avoid contact with eyes, prolonged contact with skin, and inhalation of dust and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if this product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to inter-tidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

### Storage:

The product must be kept under lock and key. Keep out of reach of unauthorized persons, children and animals. Store in its original labeled container in shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

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## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

### Occupational exposure limits:

No occupational limits established by OSHA, ACGIH or NIOSH

### Engineering control measures:

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

### PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

### Respirator:

An approved respirator suitable for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

### Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with the substance.

### Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

### Eye protection:

The use of full-face protection is recommended.

*Emergency eyewash:* Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.



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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

Blue – greenish granules

**Odour:**

Formaldehyde and Grainy

**Flammability:**

Not flammable.

**Explosive properties:**

Unlikely

**Flash point:**

Not available

**Oxidising properties:**

Not oxidative.

**pH:**

No data available.

**Stability:**

Stable under normal, dry storage conditions. Excessive heat > 60 °C could lead to the breakdown of metaldehyde.

**Persistent foaming:**

Not available.

**Solubility in water:**

The product is not soluble in water.

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## 10. STABILITY AND REACTIVITY

**Stability:**

Stable up to 2 years under normal storage conditions. The rate of decomposition increases at higher temperatures. Metaldehyde is stable to light but unstable to soil organisms.

**Incompatibility:**

Unknown

**Hazardous decomposition:**

Toxic oxides of nitrogen are released when the product decomposes on heating.

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## 11. TOXICOLOGICAL INFORMATION

**Formulated product**

**Acute oral LD<sub>50</sub>:**

6849 mg/kg in male rats.

**Acute dermal LD<sub>50</sub>:**

> 90,909 mg/kg in rats.

**Acute inhalation LC<sub>50</sub>:**

> 433.86 mg/l of air over 4 hours (rats).

**Metaldehyde TC**

**Acute oral LD<sub>50</sub>:**

283 mg/kg in male rats.



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425 mg/kg in mice.

710 mg/kg in rabbits

**Acute dermal LD<sub>50</sub>:**

> 5000 mg/kg in rats.

Not a skin sensitizer to rabbits and guinea pigs.

Although tests indicate high LD<sub>50</sub> values, caution should be practiced when handling the product.

**Acute inhalation LC<sub>50</sub>:**

> 15 mg/l of air over 4 hours (rats).

**Acute skin irritation:**

The product was found to be non-irritating to skin of rabbits and guinea pigs.

**Acute eye irritation:**

No data available

**Dermal sensitization:**

No data available.

**Carcinogenicity:**

Not carcinogenic.

**Teratogenicity:**

Not teratogenic.

**Mutagenicity:**

Not mutagenic.

**Carbaryl TC**

**Acute oral LD<sub>50</sub>:**

500 mg/kg in female rats.

**Acute dermal LD<sub>50</sub>:**

> 4,000 mg/kg in rats

**Acute inhalation LC<sub>50</sub>:**

> 65.6 mg/l of air over 4 hours (rats). (Formulation)

**Acute skin irritation:**

The product was found to be non-irritating to skin (rabbit).

**Acute eye irritation:**

The product was found to be non-irritating to eyes (rabbit).

**Dermal sensitization:**

No data available.

**Carcinogenicity:**

Evidence indicates that carbaryl is unlikely to be carcinogenic in humans.

**Teratogenicity:**

Evidence for teratogenic effects due to chronic exposure is minimal in test animals.

**Mutagenicity:**

Carbaryl has been shown to affect cell division and chromosomes in rates. However, evidence suggests that carbaryl is unlikely to be mutagenic to humans.

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## 12. ECOLOGICAL INFORMATION

**Metaldehyde**

**Degradability:**

The environmental toxicity is classed as low, and no impairment of either aerobic or anaerobic microorganisms has been observed. In soil, metaldehyde is broken down biologically into CO<sub>2</sub> and water. Metaldehyde is stable in sunlight. Kombat Snails should remain effective for 2–3 weeks outdoors. Earthworm are unlikely to be disturbed the bait.

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**Mobility:**

The product is unlikely to leach into water sources.

**Accumulation:**

The product has no tendency to bio-accumulate.

**Carbaryl****Degradability:**

In soil, the active ingredient is metabolized to form 1-naphthol. The half-life of the product is 7-14 days in sandy loam soils and 14-28 days in clay loam. Soils with high organic matter content retain residues for longer periods than do mineral soils.

**Mobility:**

The product is adsorbed on soil and is unlikely to leach into water sources.

**Accumulation:**

The product adsorbs to soil but shows little or no tendency to bio-accumulate. Carbaryl has very limited persistence in the environment

**ECOTOXICOLOGY: (Technical)****Metoldehyde****Birds:** Minimally toxic to birds.Acute oral LD<sub>50</sub>: 170 mg/kg (Quail).LC<sub>50</sub> 3460 ppm 8d dietary (Quail).**Fish:** Toxic to fish.LC<sub>50</sub> (96 hr): 75 mg/l (rainbow trout).**Bees:** Toxic to bees.LD<sub>50</sub> (topical): 113 µg/bee.**Daphnia:** Very toxic to Daphnia.*Daphnia magna*: EC<sub>50</sub> (48 hours): >90 mg/l.**Earthworms:**LC<sub>50</sub>> 1000ppm.**Beneficial insects:**

Low toxicity to beneficial insects.

**Soil micro-organisms:**

Not available

**Carbaryl****Birds:** Minimally toxic to birds.Acute oral LD<sub>50</sub>: > 2179 mg/kg (young mallard ducks).

&gt; 2230 mg/kg (Japanese quail).

&gt; 2000 mg/kg (young pheasants).

1000 - 3000 mg/kg (pigeons).

**Fish:** Toxic to fish.LC<sub>50</sub> (96 hr): 1.3 mg/l (rainbow trout).

10 mg/l (bluegill sunfish).

2.2 mg/l (sheepshead minnow).

**Bees:** Toxic to bees.LD<sub>50</sub> (topical): 1 µg/bee.**Daphnia:** Very toxic to Daphnia.*Daphnia magna*: EC<sub>50</sub> (48 hours): 0,006 mg/l.





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**Earthworms:**

Toxic for earthworms.

**Beneficial insects:**

Toxic to beneficial insects.

**Soil micro-organisms:**

Various soil fungi are able to metabolize carbaryl and in soils previously treated with carbamates and cloethocarb, 80% of carbaryl was completely mineralized to carbon dioxide during a four-week incubation period.

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## 13. DISPOSAL CONSIDERATIONS

**Pesticide disposal:**

Contaminated absorbents, surplus product, etc., should be burned at 1000°C in a high-temperature incinerator with effluent gas scrubbing. Where no incinerator is available, hydrolysis under alkaline conditions (pH 12 or above) is a suitable method to dispose of small quantities of the product. Before disposal of the resultant waste, the material must be analyzed to ensure that the active ingredient has been degraded to a safe level. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

**Package product wastes:**

If container is broken, handle with rubber gloves. Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. Combustible containers should be disposed of in pesticide incinerators.

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## 14. TRANSPORT INFORMATION

**UN NUMBER 2757****ADR/IRD**

Substance name: Metaldehyde, Carbaryl pesticide, solid, toxic  
(Metaldehyde 30 g/kg, Carbaryl 20g/kg)

Label: 6.1

**IMDG/IMO**

Packaging group: III

Label of class: 6.1 **Marine pollutant**

Shipping name: Metaldehyde, Carbaryl pesticide, solid, toxic

**AIR/IATA**

Shipping name: Metaldehyde pesticide, solid, toxic

Class: 6.1

Hazard Label: Toxic

Packaging Group: III

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## 15. REGULATORY INFORMATION



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**Symbol:** Xn, N

**Indication of danger:** Harmful, Environmentally Hazardous Substance

**Risk phrases:**

**R10, R 22** Harmful if swallowed

**Safety phrases:**

**S 2** - Keep out of reach of children

**S 13** - Keep away from food, drink and animal feeding stuffs.

**S 20/21** - When using, do not eat, drink or smoke.

**S36/37** - Wear suitable protective clothing and gloves.

**S 46** - If swallowed, seek medical advice immediately and show this container or label.

**S 49** - Keep only in the original container.

Refer to special instructions on the label and MSDS.

**National legislation:**

In accordance with the South African National Road Traffic Act, 1996 (Act 93 of 1996), the Fire Brigade Act, 1987 (Act 99 of 1987) and the Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993)

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## 16. OTHER INFORMATION

### Packing and Labeling

Packed in ): 50gr, 75gr, 100gr, 200gr, 250gr, 500gr, 1kg, 2kg, 5kg, 10kg, 20kg, 25kg, 50kg 3-ply paper bags or polypropylene woven bags HDDPE containers. Labelled according to South African regulations and guidelines.

### Declaration:

All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and is presented in good faith believed to be correct. This information applies to the PRODUCT AS SUCH. In case of formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this SDS to their own SDS.