# MATERIAL SAFETY DATA SHEET

**DATE OF ISSUE:** 09.11.2011  
**PREPARED BY:** LL

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

<table>
<thead>
<tr>
<th>PRODUCT NAME:</th>
<th>INSECTICIDAL GROUP:</th>
<th>APVMA REGISTRATION NUMBER:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counter 150G Granular Soil Insecticide/Nematicide</td>
<td>An organophosphorus- dithiophospha pesticide, Group 1B Insecticide: Acetylcholinesterase inhibitors</td>
<td>33300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USE:</th>
<th>AUSTRALIAN DISTRIBUTOR:</th>
</tr>
</thead>
</table>
| Mixed Function Pesticide | Barmac, a division of Amgrow Pty Ltd.  
17 Machinery Street,  
Darra, QLD 4076  
Phone: (07) 3727 3000  
Fax: (07) 3727 3030 |

<table>
<thead>
<tr>
<th>FORM:</th>
<th>EMERGENCY PHONE NUMBERS:</th>
</tr>
</thead>
</table>
| Granular | Australia:  
Fire Brigade, Ambulance and Police Services: 000  
Poisonings: 131 126 POISON INFORMATION CENTRE |

## 2. HAZARD IDENTIFICATION

- Classified as hazardous according to the criteria of SWA. Dangerous according to the ADG Code.
- **HAZARD CATEGORY:** T (Toxic)
- **POISON SCHEDULE:** S7 according to the SUSMP
- **ADG Classification:** Class 6.1.
- **Package Group:** I

- **RISK PHRASES:** R26/27/28, R50/53.
- **SAFETY PHRASES:** S1/2, S13, S20-21, S28, S36/37, S45, S60, S61.
- **UN NUMBER:** 2783
- **HAZCHEM CODE:** 2X
- **ORGANOPHOSPHATE PESTICIDE, SOLID, TOXIC (CONTAINS TERBUFOS).**

## 3. COMPOSITION INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>MIXTURE: CHEMICAL IDENTITY:</th>
<th>PROPORTION:</th>
<th>CAS NO:</th>
</tr>
</thead>
</table>
| Terbufos  
Other Non-Hazardous Ingredients | 150 g/kg  
Balance | 13071-79-9  
Not Applicable |

## 4. FIRST AID MEASURES

**SWALLOWED:** If swallowed induce vomiting, preferably using Ipecac Syrup APF, and give one Atropine tablet every 15 minutes until dryness of the mouth occurs. Contact a doctor or Poisons Information Centre.

**SKIN:** If poisoned by skin absorption remove any contaminated clothing from patient. Wash skin thoroughly with soap and water and give Atropine tablets as above. Get to a doctor or hospital quickly.

**EYES:** Immediately flush the contaminated eye(s) with flowing water for at least 20 minutes Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**INHALED:** Remove patient from contaminated area. Contact a doctor if symptoms persist.

**FIRST AID FACILITIES:** Provide eye wash and shower facilities in workplace.
5. HEALTH EFFECTS

**INGESTION:** Product is moderately toxic.  
**EYES:** Moderate eye irritant.  
**SKIN:** Short single exposure should not result in any significant skin irritant.  
**INHALED:** Inhalation of product for prolonged periods could cause significant irritation from both the active ingredient and the solvent.

6. FIRE-FIGHTING MEASURES

**SPECIAL FIRE FIGHTING PROCEDURES:** Breathable air apparatus should be worn when fighting fire in which this product is involved in  
**UNUSUAL FIRE & EXPLOSION HAZARDS:** If involved in a fire, the product will not explode or burn. Product could evolve oxides of sulphur or phosphorus.  
**FLAMMABILITY:** Not Flammable.  
**HAZCHEM CODE:** 2X  
**EXPOSURE LIMITS:** SWA has set a limit for dust as TWA 5.0mg/m³.  
**EXTINGUISHING MEDIA:** Choose media appropriate to surrounding burning material.

7. ACCIDENTAL RELEASE MEASURES

**PERSONAL PROTECTION:** Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow length PVC gloves, impervious footwear and half face respirator with dust cartridge or canister.  
**ENVIRONMENTAL PROTECTION:** Take precautions to prevent wildlife and birds from recovering granules from the ground. DO NOT contaminate ponds, streams, ditches etc. as contaminated water is dangerous to humans, stock, fish, crustacean and wildlife.  
**CLEAN UP AND DISPOSAL:** Cover spill with clean sand or absorbent material. Large spills should be bunded first. Scoop or sweep up absorbed material and place in a drum that is sealed upon completion. Dispose of at an approved landfill. Wash spill surface with detergent solution and rinse with water.

8. HANDLING AND STORAGE

**HANDLING:** Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow length PVC gloves, impervious footwear and half face respirator with dust cartridge or canister. Avoid re-entry for 48 hours after use in glasshouse or other confined areas. If re-entering within this period wear all protective clothing including respirator. 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, respirator (if rubber wash with detergent and warm water) and contaminated clothing.  
**STORAGE:** This product is a hazardous and dangerous good. Store in closed, original container in a dry, cool, well-ventilated locked room or place, out of direct sunlight, away from children, food, feedstuffs, seed and fertilizers.  
**TRANSPORT:** Check containers periodically for leaks. Store or transport material in a dry place. Product is packaged in containers recommended for the transport of dangerous goods.

9. EXPOSURE CONTROL/PERSONAL PROTECTION

**SKIN PROTECTION:** Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow length PVC gloves, impervious footwear.  
**RESPIRATOR TYPE:** Half face respirator with dust cartridge or canister.  
**HYGIENE RECOMMENDATIONS:** 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, goggles, contaminated clothing.  
**EYE PROTECTION:** Protective glasses or goggles should be worn when this product is being used.  
**EXPOSURE LIMITS:** SWA has set a limit for dust as TWA 5.0mg/m³.  
**VENTILATION:** Must be available when using this product, particularly without a respirator.
# 10. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPEARANCE:</strong></td>
<td>Grey coloured granules.</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY (20°C):</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>AUTOIGNITION TEMPERATURE:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>FLASH POINT:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>VAPOUR DENSITY:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>VAPOR PRESSURE (38°C):</strong></td>
<td>34.6 mPa @ 25°C for terbufos.</td>
</tr>
<tr>
<td><strong>SOLUBILITY:</strong></td>
<td>Solubility for terbufos is 4.5 mg/L at 25°C.</td>
</tr>
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</table>

## 11. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Stability and Reactivity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STABILITY:</strong></td>
<td>Stable if stored in original container under normal ambient conditions.</td>
</tr>
<tr>
<td><strong>INCOMPATIBILITY/ CONDITIONS TO AVOID:</strong></td>
<td>Strong Acids, Strong Bases, Strong Oxidising Agents.</td>
</tr>
</tbody>
</table>

**HAZARDOUS DECOMPOSITION PRODUCTS:** If involved in a fire, the product will not explode or burn. Product could evolve oxides of sulphur or phosphorus.

## 12. TOXICOLOGICAL INFORMATION

The following relates to the active ingredient, terbufos.

- **Acute oral LD50:** The oral LD50 for rats is 13 mg/kg
- **Acute dermal LD50:** The dermal LD50 for rabbits is 10 mg/kg
- **Acute inhalation LC50:** The inhalation LD50 (4 h) for male rats is 0.0061 mg a.i./l air and for females is 0.0012 mg/l air.
- **Acute skin irritation:** The product causes skin irritation.
- **Acute eye irritation:** The product causes eye irritation. It may be absorbed through the conjunctiva to produce cholinesterase inhibition.
- **Dermal sensitisation:** The product causes skin sensitisation.

**Carcinogenicity:** Studies did not detect carcinogenic activity. No human information available.

**Teratogenicity:** Studies did not detect any teratogenic effects. No human information available.

**Studies did not detect any mutagenic effects. No human information available.**

## 13. ECOLOGICAL INFORMATION

The following relates to the active ingredient, terbufos.

**ECOTOXICITY:**
- **Birds:** Extremely toxic to birds. Bobwhite quail: LC50 is 28.6 mg/kg. Bobwhites: Dietary LC50 is 143- 157ppm.
- **Fish:** Extremely toxic to fish. Freshwater fish species: LD50 is 0.77 to 20 ppb Daphnia magna: LC50 is 0.31 ppb.
- **Bees:** Not toxic to bees when used as directed.
- **Earthworms:** No data available.
- **Other non-target species:** Extremely toxic to mammals, reptiles and wildlife.

**ENVIRONMENTAL FATE:**
- ** Fate and behaviour in soil:** Rate of degradation: Oxidative and hydrolytic degradation occurs in soil with the half-life of 9 to 27 days.
- **Mobility:** Terbufos is generally immobile and is therefore unlikely to leach or contaminate groundwater. Much of chemical can be recovered near the site of application.
- **Accumulation:** The product does not accumulate.

**Fate and behaviour in water:** Rate and route of degradation: Terbufos hydrolyses rapidly. At a concentration of 4.6ppm, its hydrolysis half-lives were 4.5, 5.5 and 8.5 days at pH 5, 7 and 9 respectively. Formaldehyde was the major degraded detected.

**Fate and behaviour in vegetation:** Terbufos moves from the soil into plants, where it is broken down rapidly. Little of the parent compound is found in plants. Fifty-seven days after seeding and application, the total residues in broccoli were very low, while the marketable heads of broccoli harvested 90 days after seeding held only traces (less than 0.01 ppm, fresh weight) of residues.
### 14. DISPOSAL

**WASTE DISPOSAL METHOD:** Empty container completely into application equipment. Replace Lock’n Load container lid and return to point of purchase. DO NOT damage any containers. Empty containers and product should not be burnt.

### 15. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>UN NO:</th>
<th>2783</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECIAL PROVISIONS:</strong></td>
<td>None Allocated.</td>
</tr>
<tr>
<td><strong>SHIPPING NAME:</strong></td>
<td>ORGANOPHOSPHATE PESTICIDE, SOLID, TOXIC (CONTAINS TERBUFOS) N.O.S.</td>
</tr>
</tbody>
</table>

### 16. REGULATORY INFORMATION

| **POISONS SCHEDULE:** | Schedule 7 according to SUSMP. |
| **HAZARD CATEGORY:** | T (Toxic) |
| **PACKAGING AND LABELLING:** | I |
| **CLASSIFICATION:** | 6.1 Toxic substance. |

### 16. OTHER INFORMATIONS

This MSDS 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
- **SWA:** Safe Work Australia, formerly ASCC and NOHSC
- **CAS Number:** Chemical Abstracts Service Registry Number
- **SUSMP:** Standard for the Uniform Scheduling of Medicine & Poisons
- **UN:** United Nations Number
- **TWA:** Time weight average.

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