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| | MATERIAL SAFETY DATA SHEET | Page : 1 |
| | | Revised edition no : 2 |
| | | Date : 20 / 5 / 2014 |
| | | Supersedes : 21 / 2 / 2007 |
| CARBODAN 10G | | R-21529 |

SECTION 1. Identification of the substance/mixture and of the company/undertaking

Trade name : CARBODAN 10G
Product code : R-21529
Common name of active ingredients : Carbofuran
Chemical formula : Carbofuran : C₁₂H₁₅NO₃
Carbofuran : 2,3-Dihydro-2,2-dimethylbenzofuran-7-yl methylcarbamate
Type of product : Insecticide
Relevant identified uses : Industrial.
Company identification : ADAMA SOUTH AFRICA (PTY) LTD
21 Viben Street
Brackenfell 7560
Phone nr : +27 82 331 6463
+27 21 982 1460

SECTION 2. Hazards identification

Classification (Directive 67/548/EEC - 1999/45/EC) : THIS COMPOUND INHIBITS CHOLINESTERASE.
Physical/Chemical Hazards : Prevent heating of material
Dust explosion hazards
Human health hazards : Very toxic by inhalation and if swallowed.
Environmental hazard : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 3. Composition/information on ingredients

Components : This product is considered to be hazardous and contains hazardous components.

| Substance name | Concentration % w/w | CAS No | EC No | Index No | REACH Reg. | Classification |
|------------------|---------------------|-----------|-----------|--------------|------------|-------------------------|
| Carbofuran (ISO) | 10.2 % | 1563-66-2 | 216-353-0 | 006-026-00-9 | ---- | T+; R26/28 N; R50-53 |

SECTION 4. First aid measures

First aid measures
Inhalation : Remove victim to fresh air. Keep victim warm and at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately get medical attention.
Skin contact : After contact with skin first remove with a dry cloth and then wash the skin with plenty of water. Obtain medical attention.
Eye contact : Immediately wash out with plenty of water with the eyelid held wide open . Consult an eye specialist.
Ingestion : Do not induce vomiting. Wash out mouth with plenty of water. Never give anything by mouth to an unconscious person. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately get medical attention.
Ingestion : May result in systemic poisoning.
Eye contact : May result in systemic poisoning.
Note to physician : Carbodan is a potent, rapidly reversible cholinesterase inhibiting pesticide. Antidote for carbamate poisoning: repeated doses of Atropine sulfate. Symptoms of lung oedema may not appear for several hours.

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SECTION 5. Fire-fighting measures

- Suitable extinguishing media** : For small fire : dry chemical , carbon dioxide .
For large fire: water spray , alcohol resistant foam .
- Specific hazards** : Thermal decomposition may generate : toxic fumes , carbon dioxide , carbon monoxide , methylamine , methyl isocyanate , NO x .
- Protection against fire** : Wear self-contained breathing apparatus, rubber boots and thick rubber gloves.
- Special procedures** : Fight fires from a protected location . Dike fire control water for later disposal. Keep container cool by spraying with water.

SECTION 6. Accidental release measures

- For emergency responders** : Use appropriate protection (see section 8).
- Environmental precautions** : Dispose of this material and its container at hazardous or special waste collection point In accordance with national and regional regulations . Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.
- Clean up methods** : Vacuum with an equipment that avoids ignition risk. Avoid dust production. Wash away remainder with plenty of water.

SECTION 7. Handling and storage

- Handling** : Avoid dust production. Do not breathe dust. Avoid contact with skin and eyes.
Dust explosion hazards: During the routine handling of this material there should be little risk of a dust explosion. There are indications that an explosive dust mixture can develop. Therefore, appropriate prevention measures should be taken. If a large dust cloud develops, turn off any device that may cause spark and leave the area until the cloud dissipates.
- Storage** : Keep away from food, drink and animal feedingstuffs. Keep in a cool, dry place .
Keep away from sources of ignition - No smoking.

SECTION 8. Exposure controls/personal protection

- TLV© -TWA [mg/m³]** : (USA): 0.1, A4 (1996)
- : Ventilation required. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower. Wash hands thoroughly after handling. Wash clothing separately before re-use.
- **Respiratory protection** : Approved dust or mist respirator should be used if airborne particles are generated when handling this material.
- **Hand protection** : Wear suitable gloves.
- **Skin protection** : Wear suitable protective clothing
- **Eye protection** : Chemical goggles or face shield.

SECTION 9. Physical and chemical properties

- Physical state at 20 °C** : Granular solid.
- Colour** : Purple - blue .
- Odour** : Odourless
- Melting point [°C]** : Carbofuran: 153-154
- Flash point [°C]** : Not applicable
- Flammability** : Not flammable
- Density [g/cm3]** : 1.8 - 2.2 (20°C)
- Explosion limits** : Not explosive

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SECTION 10. Stability and reactivity

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| Chemical stability | : Stable under normal conditions. Decomposes at elevated temperatures . |
| Hazardous decomposition products | : Thermal decomposition generates : carbon dioxide , carbon monoxide , nitrogen oxides , methylamine , methyl isocyanate . |
| Hazardous polymerization | : Will not occur. |
| Conditions to avoid | : Heat , moisture . |

SECTION 11. Toxicological information

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| Toxicity information | : The data below are for Carbodan Tech.: |
| - Rat oral LD50 [mg/kg] | : 5.2 |
| - LD50 Rabbit dermal [mg/kg] | : > 2000 |
| Dermal irritation (rabbit) | : Not irritant |
| Eyes irritation (rabbit) | : Not irritant |
| Sensitization | : Guinea pig maximization test: Non sensitizer |
| Mutagenicity | : Not mutagenic |
| Carcinogenicity | : Not carcinogenic |
| - Rat inhalation LC50 [ppm] | : 4.2 |
| Toxic for reproduction : Fertility | : Not teratogenic in animal experiments . |

SECTION 12. Ecological information

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| Ecological effects information | : The data below are for Carbofuran: |
| 96 H-LC50 - Rainbow trout [mg/l] | : 0.28 |
| EC50 - Daphnia [mg/l] | : 0.020 |
| IC50 96h Algae [mg/l] | : T : Toxic to algae |
| LD50 Birds [mg/kg] | : 2.5-5 |
| Persistence - degradability | : Half-life time (t1/2) 30-60 days (soil) |
| Mobility | : May be mobile in soil |
| Bioaccumulative potential | : Carbofuran Does not bioaccumulate in aquatic organisms |

SECTION 13. Disposal considerations



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| General | : Dispose in a safe manner in accordance with local/national regulations. Dispose of this material and its container at hazardous or special waste collection point. |
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SECTION 14. Transport information

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| UN N° | : 2757 |
| Proper shipping name | : CARBAMATE PESTICIDE, SOLID, TOXIC (10.2% Carbofuran) |
| - H.I. no | : 60 |
| - IMO-IMDG - class or division | : 6.1 |
| - Packing group | : I |
| - IMDG-Marine pollution | : Marine pollutant - Polluant marin |

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SECTION 15. Regulatory information

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|--------------------------|---|
| EU Classification | : This product is provisionally labelled by the supplier in accordance to the EU regulations: |
| Symbol(s) |   |
| R Phrase(s) | : T+ : Very toxic N : Dangerous for the environment. : R26/28 - Very toxic by inhalation and if swallowed. R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| S Phrase(s) | : S02 - Keep out of the reach of children. S13 - Keep away from food, drink and animal feedingstuffs. S36/37 - Wear suitable protective clothing and gloves. S20/21 - When using, do not eat, drink or smoke. S22 - Do not breathe dust. S36/37 - Wear suitable protective clothing and gloves. S38 - In case of insufficient ventilation, wear suitable respiratory equipment. S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible). S60 - This material and its container must be disposed of as hazardous waste. S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets. |

SECTION 16. Other information

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| <i>List of relevant R phrases (heading 3)</i> | : R26/28 - Very toxic by inhalation and if swallowed. R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| Print date | : 21 / 5 / 2014 |
| Recommended uses and restrictions | : Dust explosion hazards Prevent heating of material |
| Further information | : None. |

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