


Safety Data Sheet

ZIMBO - Reg. No: L 9429 (Act No 36 of 1947)

| 1) PRODUCT AND COMPANY IDENTIFICATION | |
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| Product name: | Zimbo |
| Other means of identification: | Carbendazim 500 SC |
| Chemical Name: | Carbendazim: methyl benzimidazol-2-ylcarbamate |
| Recommended use: | Fungicide |
| Restrictions on use: | Agriculture |
| UN No: | 3082 |
| Distributed by: | MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 011 8223494 MOBILE: 0834006056 www.agritech.co.za |
| Emergency Number: | POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG:021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946 |
| 2) HAZARDS IDENTIFICATION: | |
| Classification of the substance/mixture: | Acute Toxicity (Oral) Category 4 Acute Toxicity (Dermal) Category 3 Acute Toxicity (Inhalation) Category 3 Skin Irritation Category 3 Skin Sensitization Category 1 Mutagenicity Category 1B Carcinogenicity Category 1B Reproductive Category 1B Aquatic Acute Category 1 Aquatic Chronic Category 1 |
| Label Elements: Globally Harmonized System, EU (GHS): | Pictograms:  Signal word: Danger Hazard Statements: H301: Toxic if swallowed. H302: Harmful if swallowed. H311: Toxic in contact with skin. H314: Causes severe skin burns and eye damage. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H331: Toxic if inhaled. H340: May cause genetic defects. H341: Suspected of causing genetic defects. |

According to Directive 67/548/EEC No. 1272/2008 [CLP]

H350: May cause cancer.
H360FD: May damage fertility or the unborn child.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long-lasting effects.

Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe mist/fumes/vapours/spray.
P262: Do not get in eyes, on skin, or on clothing.
P263: Avoid contact during pregnancy or while nursing.
P270: Do not eat, drink or smoke when using the product.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing, eye protection.
P321: Specific treatment (See First aid measures on this label)
P362+P364: Take off contaminated clothing and wash it before reuse.
P405: Store locked up.

Hazard Symbols:

Xn: Harmful
Xi: Irritant
N: Dangerous for the environment.

R-phrase(s):

R21: Harmful in contact with skin.
R22: Harmful if swallowed.
R23: Toxic by inhalation.
R45: May cause cancer.
R46: May cause heritable genetic damage.
R60: May impair fertility.
R61: May cause harm to the unborn child.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s):

S2: Keep out of reach of children.
S13: Keep away from food, drink and animal feeding stuffs.
S20/21: When using, do not eat, drink or smoke.
S23: Do not breathe fumes/vapour/spray.
S24/25: Avoid contact with skin and eyes.
S36/37: Wear suitable protective clothing and gloves.
S38: In case of insufficient ventilation, wear suitable respiratory equipment.
S46: If swallowed, contact a doctor or Poisons Information Centre immediately and show this container or label.
S51: Use only in well-ventilated areas.
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.

3) COMPOSITION / INFORMATION ON INGREDIENTS:

3.1 Substances:

Not applicable

3.2 Mixtures:

| Chemical name | Concentration | CAS No. | EC No. | Classification according to Regulation EC 1272/2008 (CLP) |
|--|---------------|-------------|-----------|--|
| Carbendazim | 500 g/L | 10605-21-7 | 234-232-0 | Muta. Cat. 1B (H340) Aquatic Acute Cat. 1 (H400) Aquatic Chronic Cat. 1 (H410) Repr. Cat. 1B (H360FD) |
| Denatonium benzoate in Monoethylene glycol | 3.7% | | 906-307-4 | Acute Tox. Cat. 4 (H302) |
| Morwet EFW | 1.8% | 105864-15-1 | 600-693-5 | Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319) |

| | | | | |
|--------------|------|---------|-----------|--|
| Formaldehyde | 0.4% | 50-00-0 | 200-001-8 | Acute Tox. Cat. 3 (H301) Acute Tox. Cat. 3 (H311) Skin Corr. Cat. 1B (H314) Skin Sens. Cat. 1 (H317) Acute Tox. Cat. 3 (H331) Muta. Cat. 2 (H341) Carc. Cat. 1B (H350) |
|--------------|------|---------|-----------|--|

4) FIRST AID MEASURES:

Description of First-Aid Measures:

Inhalation:

Remove victim to fresh air. Keep patient calm. If the patient is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. **See medical assistance.**

Skin contact:

Immediately remove contaminated clothing and shoes and flush body and clothes with large amounts of water. Wash thoroughly with water (including hair, skin and fingernails). Cold water may be used. Wash contaminated clothing before re-use. **Seek medical assistance.** Persons providing first aid must wear gloves to avoid self-contamination.

Eye contact:

Flush eyes immediately with plenty of clean, running water for at least 15 minutes holding eyelids open. Remove contact lenses. Cold water may be used. **Seek medical assistance.**

Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions. Loosed any tight clothing such as a collar, tie, belt or waistband. **Seek medical assistance.**

Most important symptoms and effects, both acute and delayed:

None known.

Indication of any immediate medical attention and special treatment needed:

There is no known specific antidote. Treat symptomatically and supportively.

5) FIRE-FIGHTING MEASURES:

Extinguishing Media:

Use foam, carbon dioxide, dry extinguishing media, water mist or fog (avoid water jet).

Unsuitable Extinguishing Media:

Do not use high volume water jet, due to contamination risk.

Specific Hazards arising from the substance/mixture:

Product may generate carbon monoxide, ammonia and nitrogen oxides during a fire.

Fire Fighting:

Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Generating poisonous and corrosive fumes. Keep upwind.

Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated.

Do not scatter the material. Water can be used to cool containers. Dispose of extinguishing agent and spillage in a safe way at a later stage.

Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

Protective clothing:

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| | Full protective clothing and positive-pressure self-contained breathing apparatus and full turnout gear. |
| 6) ACCIDENTAL RELEASE MEASURES: | |
| Personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and material for containment and cleaning up: | <p>Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.</p> <p>Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow to enter drains or watercourses. If contamination of water courses is unavoidable, report to the Police and the Department of Water/Environmental Affairs immediately.</p> <p>Do not eat, drink or smoke during the clean-up process. Clear area of unprotected personnel. Wear protective gear: goggles.</p> <p>Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8.</p> <p>For small spillages: Pick up with a suitable absorbent material (sand, sawdust, kieselguhr, general-purpose binder).</p> <p>For large spillages: Dike the spillage and pump off the product</p> <p>Dispose of absorbed materials according to local regulations. Collect waste into suitable containers, which can be labelled and sealed. Clean contaminated floors and objects thoroughly with water and a detergent, while observing environmental regulations.</p> |
| 7) HANDLING & STORAGE: | |
| Precautions for Safe Handling: Conditions for Safe Storage, including any incompatibilities: | <p>KEEP OUT OF REACH OF CHILDREN and animals. Keep away from food, drink and animal feeding stuffs.</p> <p>Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Take off contaminated clothing immediately. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Store work clothing separately.</p> <p>Do not ingest or breathe gas/fumes/vapour/spray.</p> <p>Keep away from sparks, open flames and direct sunlight. Avoid contact with skin, eye and clothing. Closed working clothes are recommended.</p> <p>Store in original container only in a well-ventilated, cool, dry, secure area away from children, foods and animal feeds. Keep away from heat and protect from sunlight. Protect against freezing.</p> |
| 8) EXPOSURE CONTROL / PERSONAL PROTECTION: | |

| <p>Appropriate Engineering Controls:</p> <p>Control Parameters: Occupational exposure limits:</p> <p>PERSONAL PROTECTIVE EQUIPMENT:</p> <p>Clothing:</p> <p>Respiratory protection:</p> <p>Gloves:</p> <p>Eye protection:</p> <p>Emergency eye wash:</p> | <p>It is essential to provide adequate ventilation. The measures appropriate for a particular work site 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.</p> <table border="1" data-bbox="810 315 1450 456"> <thead> <tr> <th>Ingredient</th> <th>CAS#</th> <th>Limit</th> <th>Basis</th> </tr> </thead> <tbody> <tr> <td>Formaldehyde gas</td> <td>50-00-0</td> <td>STEL: 0.3 ppm</td> <td>ACGIH (TLV) [United States]</td> </tr> </tbody> </table> <p>Employee must wear appropriate protective (impervious) clothing. Body protection (chemical protection suit, boots) must be chosen depending on the activity and possibility of exposure.</p> <p>Not normally required. If ventilation is inadequate and inhalation is likely, an approved respirator should be worn. Particle filter with medium efficiency for solid and liquid particles.</p> <p>Suitable chemically resistant gloves (e.g. nitrile rubber)</p> <p>Safety goggles with side shields, or face shield.</p> <p>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.</p> | Ingredient | CAS# | Limit | Basis | Formaldehyde gas | 50-00-0 | STEL: 0.3 ppm | ACGIH (TLV) [United States] |
|--|--|---------------|-----------------------------|-------|-------|------------------|---------|---------------|-----------------------------|
| Ingredient | CAS# | Limit | Basis | | | | | | |
| Formaldehyde gas | 50-00-0 | STEL: 0.3 ppm | ACGIH (TLV) [United States] | | | | | | |
| <p>9) PHYSICAL & CHEMICAL PROPERTIES:</p> | | | | | | | | | |
| <p>Appearance:</p> | <p>White Liquid</p> | | | | | | | | |
| <p>Odour:</p> | <p>Characteristic odour</p> | | | | | | | | |
| <p>Solubility:</p> | <p>Very soluble in cold water, hot water, methanol, diethyl ether, acetone. Slightly soluble in n-octanol</p> | | | | | | | | |
| <p>pH:</p> | <p>7.8</p> | | | | | | | | |
| <p>Odour threshold:</p> | <p>Not available</p> | | | | | | | | |
| <p>Melting point / Freezing point</p> | <p>Not available</p> | | | | | | | | |
| <p>Initial boiling point and boiling range</p> | <p>Not available</p> | | | | | | | | |
| <p>Flash point:</p> | <p>Not applicable</p> | | | | | | | | |
| <p>Evaporation rate:</p> | <p>Not available</p> | | | | | | | | |
| <p>Flammability (solid, gas)</p> | <p>Not available</p> | | | | | | | | |
| <p>Upper/ lower flammability or explosive limits:</p> | <p>Not available</p> | | | | | | | | |
| <p>Vapour pressure:</p> | <p>Not available</p> | | | | | | | | |
| <p>Vapour density:</p> | <p>Not available</p> | | | | | | | | |
| <p>Relative density:</p> | <p>1.12</p> | | | | | | | | |
| <p>Partition coefficient: n-octanol/water</p> | <p>Not available</p> | | | | | | | | |
| <p>Auto-ignition temperature:</p> | <p>Not available</p> | | | | | | | | |
| <p>Decomposition Temperature:</p> | <p>Not available</p> | | | | | | | | |
| <p>Viscosity:</p> | <p>Not available</p> | | | | | | | | |
| <p>10) STABILITY & REACTIVITY:</p> | | | | | | | | | |
| <p>Reactivity:</p> <p>Chemical Stability:</p> <p>Possibility of hazardous reactions:</p> <p>Conditions to avoid:</p> <p>Incompatible materials:</p> <p>Hazardous decomposition product(s):</p> | <p>Stable under normal conditions.</p> <p>Stable under normal use and standard conditions. Stable for 24 months</p> <p>None known.</p> <p>Keep away from heat and protect from sunlight. Protect against freezing.</p> <p>Oxidizing agents</p> <p>None known. Product may generate carbon monoxide, ammonia and nitrogen oxides during a fire.</p> | | | | | | | | |
| <p>11) TOXICOLOGICAL INFORMATION:</p> | | | | | | | | | |
| <p>Acute Toxicity:</p> <p>Oral:</p> <p>Dermal:</p> | <p>LD50 (Rat): > 1,500 mg/kg.</p> <p>LD50 (Rat): > 2,000 mg/kg</p> | | | | | | | | |

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| Inhalation: | LC50 (Rat, 4 hours): 10.0 g/L air. |
| Skin Corrosion/Irritation: | May cause slight irritation |
| Serious Eye Damage/Irritation: | Not Irritating (Rabbit). |
| Respiratory or Skin Sensitization: | May cause sensitization. |
| Germ Cell Mutagenicity: | May cause genetic defects. |
| Carcinogenicity: | May cause cancer. |
| Reproductive Toxicity: | May damage fertility or the unborn child. |
| STOT-SE: | No data available. |
| STOT-RE: | No data available. |
| Aspiration Hazard: | No data available. |
| 12) ECOLOGICAL INFORMATION: | |
| Ecotoxicity: | |
| Birds: | Acute oral LD ₅₀ for quail 5826–15 595 mg/kg. LC50 (96 h) for carp 0.61, rainbow trout 0.83, bluegill sunfish >17.25, guppies >8 mg/l. LC50 (48 h) 0.13–0.22 mg/l. EC50 (72 h) for Scenedesmus subspicatus 419, Selenastrum capricornutum 1.3 mg/l. LC50 (4 w) for Eisenia foetida 6 mg/kg soil. LD50 (contact) >50 µg/bee. |
| Fish: | |
| Daphnia: | |
| Algae: | |
| Worms: | |
| Bees: | |
| Persistence and Degradability: | 2-Aminobenzimidazole has been found as a minor metabolite. DT50 in soil 8–32 d under outdoor conditions. Carbendazim decomposes in the environment, DT50 6–12 mo on bare soil, 3–6 mo on turf, and 2–25 mo in water under aerobic and anaerobic conditions, respectively. It is mainly decomposed by micro-organisms. |
| Bio-accumulative Potential: | In male rats, following a single oral administration of 3 mg/kg, 66% was eliminated in the urine within 6 hours. |
| Mobility in Soil: | K _{oc} 200–250. |
| 13) DISPOSAL CONSIDERATIONS: | |
| Waste Disposal: | Waste must be disposed of in accordance with local and national regulations. Waste should not be re-used. Do not contaminate water, food or feed by disposal. Open dumping or burning of this pesticide is prohibited. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. |
| CONTAINER DISPOSAL: | If containers cannot be recycled, they should be disposed of together with the waste chemical. Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers. |
| 14) TRANSPORTATION INFORMATION: | |
| Road Transport ADR / IRD: | UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carbendazim) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. |
| Maritime Transport IMDG / IMO: | UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carbendazim) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Marine Pollutant Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. |



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| Air Transport ICAO / IATA: | UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carbendazim) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. |
| Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code): | No transport in bulk according to the IBC Code. |
| 15) REGULATORY INFORMATION: | |
| Safety, health and environmental regulations/legislation specific for the substance/mixture: | For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2) |
| Chemical Safety Assessment: | Advice on product handling can be found in sections 7 and 8 of this safety data sheet. |
| 16) OTHER INFORMATION: | |
| <p>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 are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.</p> <p>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 this 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.</p> <p>The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.</p> <p>MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MERIDIAN AGRITECH (PTY) LTD WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.</p> <p>Date of issue: 07/06/2013 Date of revision: 27/03/2018</p> <p>Abbreviations and acronyms:</p> <ol style="list-style-type: none">1. CAS number: Chemical Abstracts Service number.2. CLP: Classification, Labelling, Packaging.3. LD₅₀: Lethal Dose for 50% of the test population.4. LC₅₀: Lethal Concentration for 50% of the test population.5. DT₅₀: Half-life.6. GHS: Globally Harmonised System (of Classification and Labelling of Chemicals).7. STEL: Short-term exposure limit.8. ACGIH: American Conference of Governmental Industrial Hygienists.9. TLV: Threshold limit value. <p>Literature References:</p> <ul style="list-style-type: none">• GHS: www.ccohs.ca/oshanswers/chemicals/ghs.html• ECHA: https://echa.europa.eu/search-chemicals | |