


Safety Data Sheet

Captan 500SC L10979 (Act 36 of 1947)

1) PRODUCT AND COMPANY IDENTIFICATION	
Product name:	CAPTAN 500SC
Other means of identification:	NA
Chemical Name:	Captan (IUPAC): <i>N</i> -(trichloromethylthio)cyclohex-4-ene-1,2-dicarboximide
Recommended use:	Fungicide
Restrictions on use:	Agriculture
UN No:	3082
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 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:	Eye Damage Category 1 Skin Sensitization Category 1 Acute Toxicity (Inhalation) Category 3 Acute Toxicity (Oral) Category 4 Carcinogenicity Category 2 Aquatic Acute Category 1
Label Elements: Globally Harmonized System, EU (GHS):	<p>Pictogram:</p>  <p>Signal word: Danger</p> <p>Hazard Statements: H302: Harmful if swallowed. H317: May cause an allergic skin reaction. H318: Causes serious eye damage. H331: Toxic if inhaled. H351: Suspected of causing cancer. H400: Very toxic to aquatic life.</p> <p>Precautionary Statements: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been</p>

According to Directive 67/548/EEC No. 1272/2008 [CLP]	read and understood. P260: Do not breathe mist/fumes/vapours/spray. P262: Do not get in eyes, on skin, or on clothing. P264: Wash face and hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P284: In case of inadequate ventilation wear respiratory protection. P403+233: Store in a well-ventilated place. Keep container tightly closed.
	Hazard symbols: N: Dangerous for the environment Xn: Harmful Xi: Irritant
	R-phrases(s): R23: Toxic by inhalation. R36/38: Irritating to skin and eyes. R40: Limited evidence of a carcinogenic effect. R41: Risk of serious damage to eyes. R43: May cause sensitization by skin contact. R50: Very toxic to aquatic organisms.
	S-phrases(s): S1/2: Keep locked up and out of reach of children. S3: Keep in a cool place. S7: Keep container tightly closed. S13: Keep away from food, drink and animal feeding stuffs. S20/21: When using, do not eat, drink or smoke. S23: Do not breathe vapour/spray. S24/25: Avoid contact with the skin and eyes. S28: After contact with skin, wash immediately with plenty of water. S35: This material and its container must be disposed of in a safe way. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S57: Use appropriate containment to avoid environmental contamination. 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)
Captan	500 g/L	133-06-2	205-087-0	Eye Dam. Cat. 1 (H318) Skin Sens. Cat. 1 (H317) Acute Tox. Cat. 3 (H331) Carc, Cat. 2 (H351) Aquatic Acute Cat. 1 (H400)
Denatonium benzoate in Monoethylene glycol	56 g/L		906-307-4	Acute Tox. Cat. 4 (H302)

4) FIRST AID MEASURES:	
Description of First-Aid Measures: Inhalation:	Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped, ensure airway is clear and apply resuscitation. If

<p>Skin contact:</p> <p>Eye contact:</p> <p>Ingestion:</p> <p>Most important symptoms and effects, both acute and delayed:</p> <p>Indication of any immediate medical attention and special treatment needed:</p>	<p>breathing is laboured oxygen should be supplied by qualified personnel only. Seek medical assistance if necessary.</p> <p>Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash skin gently but thoroughly with plenty of water and non-abrasive soap for 15 to 20 minutes. Do not rub skin. Persons providing first aid must wear gloves to avoid self-contamination. Seek medical assistance if irritation persists.</p> <p>Immediately flush eyes with a stream of gently flowing water for 15 minutes, holding eyelids open. Remove contact lenses, if present, after the first 5 minutes. Seek medical assistance.</p> <p>Wash out mouth with water and give victim plenty of water to drink if the patient is conscious. Never give anything by mouth to an unconscious person. Do not induce vomiting, unless instructed to do so by a physician. For advice, contact the National Poisons Centre. Seek medical assistance immediately.</p> <p>Eye contact: Redness, tears.</p> <p>No specific antidote known. Treat symptomatically and supportively. If ingested perform gastric lavage and administer activated charcoal.</p>
5) FIRE-FIGHTING MEASURES:	
<p>Extinguishing Media:</p> <p>Unsuitable Extinguishing Media:</p> <p>Specific Hazards arising from the substance/mixture:</p> <p>Fire Fighting:</p> <p>Protective clothing:</p>	<p>Carbon dioxide, dry chemical powder, water spray or alcohol-resistant foam.</p> <p>High volume water jet due to contamination risk.</p> <p>Thermal decomposition generates: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxide, hydrogen chloride, CSCL₂.</p> <p>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.</p> <p>Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. 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. Do not scatter the burning material. Avoid pollution of waterways by run-off from the site.</p> <p>Full protective clothing and self-contained breathing apparatus.</p>
6) ACCIDENTAL RELEASE MEASURES:	
<p>Personal precautions, protective equipment and emergency procedures:</p> <p>Environmental precautions:</p> <p>Methods and material for containment and cleaning up:</p>	<p>Avoid contact with spilled product or contaminated surfaces. Do not breathe in spray or fumes. Clear the area and shut off the source of the leak only under safe conditions. Extinguish any sources of ignition nearby and downwind. Ensure adequate ventilation. Avoid contact with skin and eyes. 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>Wear protective clothing and avoid breathing mist/vapour. Clear area of unprotected personnel. Ventilate area. Contain and absorb liquid spills with inert material, remove by scoop or vacuum. Use approved industrial vacuum cleaner for removal</p>

	and place in waste containers. Label containers with the contents and dispose of according to local regulations. Wash area with water and detergent and absorb with further inert material. Heavily contaminated soil layers have to be dug out down to clean soil. If spill does enter waterways contact the local authority. Spilled product cannot be re-used and must be disposed of by incineration or disposal in a chemical waste disposal facility. If containers cannot be recycled, they should be disposed of together with the waste chemical.								
7) HANDLING & STORAGE:									
Precautions for Safe Handling:	Avoid skin and eye contact and inhalation of spray mist, fog or vapours. Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Wash contaminated clothing before re-use. Keep working clothes separately. Garments that cannot be cleaned must be destroyed by burning. Keep container tightly sealed. Handle and open the container with care and do not open until ready to use. Once the container is opened the contents should be used as soon as possible. Avoid aerosol formation. Provide a means for controlling leaks and spills, do not return residues to the storage containers. Follow all label warnings even after the container is emptied. Avoid all direct contact with the product. Wear suitable personal protection. APPROVED HANDLER: This product must be under the control of an approved handler when applied in a wide dispersive manner; or used by a commercial contractor.								
Conditions for Safe Storage, including any incompatibilities:	Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers and seeds. Keep away from animals, children or uninformed persons. Do not store for prolonged periods in direct sunlight. Protect from frost.								
8) EXPOSURE CONTROL / PERSONAL PROTECTION:									
Appropriate Engineering Controls:	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.								
Control Parameters: Occupational exposure limits:	<table><tr><td>Ingredient</td><td>CAS#</td><td>Limit</td><td>Basis</td></tr><tr><td>Captan</td><td>133-06-2</td><td>5 mg/m³</td><td>TLV TWA</td></tr></table>	Ingredient	CAS#	Limit	Basis	Captan	133-06-2	5 mg/m ³	TLV TWA
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Captan	133-06-2	5 mg/m ³	TLV TWA						
<u>PERSONAL PROTECTIVE EQUIPMENT:</u>									
Clothing:	Consult supplier to confirm that the equipment is suitable. Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance. Wear long-sleeved shirt and long pants, chemical-resistant footwear. Wash contaminated clothing and clean protective equipment before re-use.								
Respiratory protection:	Wear an approved full-face respirator that is suitable for protection from spray and mists of pesticides.								
Gloves:	Employee must wear appropriate chemical-resistant gloves to prevent prolonged, direct contact with this substance.								
Eye protection:	Wear a face shield when handling the concentrate or when applying the product. The use of safety goggles with side shields is recommended if a face shield is not available.								
Emergency eye wash:	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.								
9) PHYSICAL & CHEMICAL PROPERTIES:									

Appearance:	White Liquid, Suspension concentrate
Odour:	Characteristic odour
Solubility:	Suspends in water
pH:	4 – 7
Odour threshold:	Not available
Melting point / Freezing point	158 – 164 °C (Captan)
Initial boiling point and boiling range	Not available
Flash point:	Not flammable
Evaporation rate:	Not available
Flammability (solid, gas)	Not flammable
Upper/ lower flammability or explosive limits:	Not explosive
Vapour pressure:	Not available
Vapour density:	Not available
Relative density:	1.257
Partition coefficient: n-octanol/water	K _{ow} 610 (Captan)
Auto-ignition temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available
10) STABILITY & REACTIVITY:	
Reactivity:	No hazardous reactions if stored and handled as indicated.
Chemical Stability:	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
Possibility of hazardous reactions:	Polymerization will not occur.
Conditions to avoid:	Protect from open flames, sources of heat and direct sunlight.
Incompatible materials:	None known.
Hazardous decomposition product(s):	Thermal decomposition generates: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxide, hydrogen chloride, CSCL ₂ .
11) TOXICOLOGICAL INFORMATION:	
Acute Toxicity:	
Oral:	LD ₅₀ >5 000 mg/kg
Dermal:	LD ₅₀ >2 000 mg/kg
Inhalation:	LC ₅₀ >4.5 mg/L (4h)
Skin Corrosion/Irritation:	Mildly irritating
Serious Eye Damage/Irritation:	Moderately irritating
Respiratory or Skin Sensitization:	Extreme sensitizer.
Germ Cell Mutagenicity:	No data available
Carcinogenicity:	Suspected of causing cancer.
Reproductive Toxicity:	No data available
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 mallard ducks and quail >2000 mg/kg.
Fish:	Dietary LC ₅₀ for mallard ducks and quail >5200 mg/kg diet.
Daphnia:	LC ₅₀ (96 h) for bluegill sunfish 0.072, harlequin fish 0.3, brook trout 0.034, brown trout 0.098, rainbow trout 0.186 mg/l.
Algae:	LC ₅₀ (48 h) 7–10 mg/l.
Worms:	E _b C ₅₀ (96) for <i>Selenastrum capricornutum</i> 1.6 mg/l.
Bees:	LC ₅₀ (14 d) for earthworms >260 mg/kg soil.
Persistence and Degradability:	788 µg/bee (contact), 91 µg/bee (oral).
Bio-accumulative Potential:	DT ₅₀ c. 1 d (25 °C, pH 7.2, o.m. 1.2%).
Mobility in Soil:	Does not bio-accumulate in aquatic organisms.
	Soil K _d 3–8 (pH 4.5–7.2, o.m. 2.2–6.7%); Does not leach to ground water.
13) DISPOSAL CONSIDERATIONS:	
Waste Disposal:	In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a

	<p>permit delivered by the competent authorities. Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product cannot be reused and may be disposed of on site or at an approved chemicals waste disposal facility. Open burning or burning of this pesticide is prohibited.</p>
Container Disposal:	<p>Refer to the product label for instructions. If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product. Destroy the empty container by perforation and flattening and dispose of it in a safe manner according to local regulations. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Do not transport if this container is damaged or leaking.</p>
14) TRANSPORTATION INFORMATION:	
Road Transport ADR / IRD:	<p>UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Captan) 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.</p>
Maritime Transport IMDG / IMO:	<p>UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Captan) 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.</p>
Air Transport ICAO / IATA:	<p>UN NUMBER: 3082 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Captan) 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.</p>
Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code):	Not applicable
15) REGULATORY INFORMATION:	
Safety, health and environmental regulations/legislation specific for the substance/mixture:	<p>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)</p>
Chemical Safety Assessment:	<p>Advice on product handling can be found in sections 7 and 8 of this safety data sheet.</p>
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. 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 EXPRESSED 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</p>	

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Abbreviations and acronyms:

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.
10. TWA: Time-weighted average.

Literature References:

- GHS: www.ccohs.ca/oshanswers/chemicals/ghs.html
- ECHA: <https://echa.europa.eu/search-chemicals>