



**NUFARM AGRICULTURE (PTY) LTD**  
Co. Reg. No.: 1994/0006588/07

## MATERIAL SAFETY DATA SHEET

Subject: *CHAMPION<sup>®</sup> Wettable Powder*  
Document no: 070NM  
Effective Date: July 2002  
Revision no: 1

### 1. IDENTIFICATION OF THE SUBSTANCE

**Product name:** CHAMPION<sup>®</sup> Wettable Powder  
Fungicide

**UN Number:** Not regulated.

**Supplier:** Nufarm Agriculture (Pty) Ltd  
PO Box 165, Malelane, 1320, South Africa

**Telephone:** (013) 790 4372

**Fax:** (013) 790 4306

**E-mail:** buhala@mpu.co.za

**DISTRIBUTOR:** VILLA Crop Protection (Pty) Ltd  
PO Box 10413, Aston Manor, 1630, South Africa

**Telephone:** (011) 3962233

**Fax:** (011) 3964666

**E-mail:** technical@villacrop.com

**Emergency telephone:** (011) 396 2233

**24 Hr Emergency Numbers:**

Bateleur: (Client: Villa Crop Protection) 083 1233 911 or 0860 333 911

**In case of Poisoning:**

Tygerberg Hospital: (021) 931 6129

University of Free State: 082 491 0160

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Common name:** Copper hydroxide

**Chemical Name:** copper hydroxide, cupric hydroxide (IUPAC)

**CAS No.:** 20427-59-2

**Chemical Family:** Inorganic salt

**Chemical Formula:** Cu(OH)<sub>2</sub> (Mol. Wt.: 97.54)

**Use:** Foliar fungicide with protective action.

**Formulation:** Copper hydroxide: 770 g/kg (copper equivalent: 500 g/kg) Wettable Powder

**Active Ingredient:** copper hydroxide 77 %

**SYMBOLS:** Xi

**RISK-PHASE(S)** R 22, R 36/38, R 41

### 3. HAZARD IDENTIFICATION

**Likely routes of exposure:**

Direct contact may seriously damage eye tissue. Slightly to non-toxic orally, dermally, and by inhalation. See below for route-specific details.

**POTENTIAL HEALTH EFFECTS:**

**Inhalation:** Slightly toxic by inhalation.

Excessive exposure may cause cough, mucous production, shortness of breath, reflecting metal fume fever.

**Eye irritation:** Severely irritating to the eyes.

Direct contact may cause destruction of eye tissue. May be corrosive to the eyes if not washed immediately.

**Skin irritation:** Slight skin irritant.

Excessive exposure, especially if prolonged, may produce skin irritation. Repeated exposure may cause allergic contact dermatitis.

**Skin absorption:** Not a skin absorption hazard.

**Ingestion:** Slightly toxic by oral exposure.

This material may produce toxicity if ingested in large quantities. Symptoms of over-exposure may include nausea and vomiting, abdominal pain, and central nervous system depression.



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**Chronic:** Low chronic toxicity unless excessive exposure is encountered. Excessive exposure to copper by inhalation may result in irritation of the upper respiratory tract which, if severe, may lead to perforation of the nasal septum after long periods of exposure.

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### 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:**

Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth. Get professional medical attention immediately.

**Skin contact:**

Remove contaminated clothing and shoes. Wash with plenty of soap and water for 15 to 20 minutes until no evidence of chemical remains. Get professional medical attention immediately.

**Eye contact:**

Hold eyelids open and flush with water for 15 to 20 minutes until no evidence of chemical remains. Get professional medical attention immediately.

**Ingestion:**

Drink promptly a large quantity of milk, egg white, gelatin solution or if these are not available, large quantities of water. Unless extensive vomiting has occurred, empty the stomach by gastric lavage with water, milk, sodium bicarbonate solution of a 0,1 % solution of potassium ferrocyanide. (Gosselin, Clinical Toxicology of commercial Products, 5<sup>th</sup> edition.). Administration of gastric lavage should be performed by qualified medical personnel. Probable mucosal damage may contra-indicate use of gastric lavage.

**Emergency Medical Treatment:**

Treat symptomatically. Acute oral overexposure to copper hydroxide, a major component of this product, may cause hypertension, hemolysis, and, rarely methemoglobinemia. Severe intoxication is associated with serum copper levels greater than 500 mcg/dl. Copper hydroxide is an emetic, however, dilution with fluids, adsorption with activated charcoal, or lavage may be indicated. Chelation therapy with BAL or D-penicillamine has proved useful in cases of acute overexposure.

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### 5. FIRE FIGHTING MEASURES

**Fire and explosion hazard:**

**General Hazard:**

Negligible fire hazard when exposed to heat or flame.

**Extinguishing agents:**

Use dry chemical, carbon dioxide, water spray or foam.

No incompatible fire fighting media known.

**Fire fighting Instructions:**

Avoid contact with molten product to prevent serious burns.

**Fire fighting Equipment:**

Wear protective clothing and self-contained breathing apparatus.

**Hazardous Combustion Products:**

Decomposes to CuO and H<sub>2</sub>O above 140 °F

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### 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal precautions:**

Avoid contact with skin and eyes. Do not breathe in fumes.

**Land spill:** Sweep up and place in suitable (fireboard) containers for later disposal.

**Water spill:** If feasible, copper may be precipitated/ultra-filtrated with caustics or other chemicals and resulting sludge disposed of in a chemical landfill.

**Environmental precautions:**

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

**Occupational spill:**

Do not touch spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.



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### 7. HANDLING AND STORAGE REQUIREMENTS

**Storage temperature:** Store below 35 °C. Average shelf life under proper storage conditions is 2 years.  
**Storage Pressure:** Ambient pressure.  
**General Information:** Store in a clean, dry area. Do not store near feed, food or within the reach of children.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

#### **Pesticide Applicators & Workers:**

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.

#### **Ventilation:**

Control enclosed spaces with adequate ventilation. Prevent exceeding of 1 mg/m<sup>3</sup> (ACGIH TLV or OSHA PEL).

#### **Respirator:**

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

#### **Clothing:**

Employee must wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact with this substance. Wear long sleeved shirt, long pants, waterproof gloves and shoes plus socks.

#### **Eye protection:**

Wear protective eyewear to prevent contact with this substance.

*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 AND CHEMICAL PROPERTIES

**Appearance:** Light blue fine powder.  
**Odour:** Characteristic copper odour.  
**pH:** 8,9  
**Bulk Density:** 0,19 to 0,26 g/cc  
**Solubility in water:** Disperses to form a suspension. Copper hydroxide is insoluble in cold water and decomposes in hot water.  
**Flash point:** None.  
**Melting point:** Decomposes at 140 °C

### 10. STABILITY AND REACTIVITY

**Storage stability:** Stable for up to 2 years under normal warehouse storage conditions.  
**Incompatible materials:** Not determined.  
**Conditions to avoid:** Excessive heat.  
**Hazardous decomposition:** Decomposes to CuO and H<sub>2</sub>O above 140°C.  
**Hazardous polymerisation:** Material is not known to polymerise.

### 11. TOXICOLOGICAL INFORMATION

#### **FORMULATED PRODUCT:**

**Acute oral LD<sub>50</sub>:** Male rats: 943 mg/kg; Female rats: 846 mg/kg  
**Acute dermal LD<sub>50</sub>:** > 2 000 mg/kg in rabbits; > 5 000 mg/kg in rats.

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<b>Inhalation:</b>	LC <sub>50</sub> = 1,53 mg/l for male rat (4 hour); LC <sub>50</sub> = 1,04 mg/l for female rat (4 hour). LC <sub>50</sub> = 11,65 mg/l for rat (1 hour). May cause irritation of the mucous membranes. Exposure to copper fume may result in metallic taste, nausea, vomiting, and metal fume fever with chills, fever, aching muscles, dry throat and headache.
<b>Acute skin irritation:</b>	May cause slight irritation. Many copper salts cause itching, eczema and rarely sensitisation reactions in previously exposed persons.
<b>Acute eye irritation:</b>	Severely irritating to the eyes. May cause severe eye irritation including permanent corneal opacity. May be corrosive to the eyes if not washed immediately.
<b>Skin absorption:</b>	This product is slightly toxic by dermal exposure.
<b>Ingestion:</b>	LD <sub>50</sub> indicating slight toxicity. Ingestion of large doses of copper salts may result progressively in irritation of the gastrointestinal tract, nausea, vomiting, salivation, gastric pain, hemorrhagic gastritis, diarrhea, capillary damage, liver and kidney damage and central nervous system stimulation followed by depression. Jaundice, pain in the liver, and haemolytic anemia have been reported following acute human poisonings.
<b>Chronic:</b>	Repeated ingestion of copper salts may results in anemia, liver and kidney damage. Chronic inhalation exposure may cause a metallic taste in the mouth, irritation of the upper respiratory tract such as the nasal mucosa that may progress to perforation of the nasal septum. Chronic cough may also occur. Copper hydroxide which comprises 77% of this product governs the toxicity of the product. The remaining components have low to negligible toxicity.
<b>Special Health Effects:</b>	Copper-intolerant individuals should not be exposed to this material. No additional information is available on whether overexposure to this material would aggravate other existing special medical conditions.

## 12. ECOLOGICAL INFORMATION

### ECOTOXICOLOGY:

The degree of mobility of copper in the environment depends upon the pH of ambient soils and waters. The higher the acidity, the more soluble copper salts are and hence, the more mobile. Partitioning of copper into air is negligible due to the low vapour pressure of copper salts.

<b>Birds:</b>	Acute oral LD <sub>50</sub> :	Bobwhite quail	> 340 mg/kg
	8-day dietary LD <sub>50</sub> :	Bobwhite quail	> 10 000 ppm
	8-day dietary LD <sub>50</sub> :	Mallard duck	> 10 000 ppm
<b>Fish:</b>	LC <sub>50</sub>	Rainbow trout:	23 ppb
	LC <sub>50</sub> (96 h)	Fathead minnow:	23 ppb
	LC <sub>50</sub>	Bluegill sunfish:	180 000 ppb
<b>Bees:</b>	Non-toxic to honeybees.		
<b>Daphnia:</b>	EC <sub>50</sub> :	6.5 ppb	

## 13. DISPOSAL CONSIDERATION

### Pesticide disposal:

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers.



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### Package product wastes:

Emptied containers retain vapour and product residues. Observe all labelled safeguards. Empty containers in the following manner: Invert the empty container over the spray or mixing tank and ensure bag is emptied over the tank. Destroying the container.

Destroy the emptied containers by perforation and flattening. Bury in an approved dump site. Do not re-use the empty container for any other purpose.

Contaminated absorbents, surplus product (in diluted form), etc., should be buried in approved landfill.

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### 14. TRANSPORT INFORMATION

**UN NUMBER:** NOT REGULATED  
**ADR/IRD:** NOT REGULATED  
**IMDG/IMO:** NOT REGULATED  
**ICAO/IATA:** NOT REGULATED  
**DOT SHIPPING NAME:** Agricultural Fungicide N.O.S.

DOT has determined that this material is not subject to hazardous materials in commerce transport regulations (HMR: 49 CFR Parts 171 – 180).

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### 15. REGULATORY INFORMATION

**Symbol:** Xi, Irritant

**Risk phrases:**

**R 22** harmful if swallow  
**R 36/38** Irritating to eyes and skin.  
**R 41** Risk of serious damage to eyes.

**Safety phrases:**

**S 1/2** Keep locked up and out of the reach of children.  
**S 22** Do not breath dust.  
**S 24/25** Avoid contact with skin and eyes.  
**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.  
**S 46** If swallowed, seek medical advice immediately and show this container and label.

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### 16. OTHER INFORMATION

**Packing and Labelling:**

Packed in 1, 5, 10, 20 & 25 kg multi-lined paper bags and labelled according to the South African regulations and guidelines.

**Disclaimer:**

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

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### END OF DOCUMENT

**Compiled:** March 2002  
**Revised:** September 2002