



SECTION 1 - PRODUCT & COMPANY IDENTIFICATION

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Substance: copper ammonium complex.
Product Name: COPPER-FLOW-PLUS
Product Use: Fungicide
Creation Date: November 2006
Revision Date: August 2017

24 Hr Emergency Number:

In case of Poisoning:

Poisons Helpline 0861 555 777

In case of Spillage:

HAZMAT: 0800 147 112

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: copper ammonium complex
Chemical Name: copper ammonium acetate
TSCA/CAS No.: 23087-46-9
Chemical family: Inorganic copper salt
Use: Fungicide with preventative action.
Formulation: copper ammonium acetate: 315 g/l
(metallic copper equivalent: 93 g/l)
Water Soluble Solution

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
copper ammonium complex:	irritant	± 27 % v/v
(copper as copper ammonium acetate: ± 8 %)		
water	non	> 70 % v/v

Symbol: Xi
Indication of Danger: Irritant
RISK-PHASE(S) R22, R36/37/38, R50

SECTION 3 - HAZARD IDENTIFICATION

Likely routes of exposure:

Skin and eye contact and inhalation.

Eye contact:

Mild to moderate irritant to eyes. May cause pain.

Skin contact:

Mild to moderate irritant to skin and other contaminated tissue. Overexposure will cause reddening, discomfort and mild to moderate irritation. Prolonged or repeated skin contact can lead to dermatitis and skin sensitization reactions, e.g. rashes and welts.

Ingestion:

Not a likely route of occupational exposure. The product can be harmful when ingested and can result in vomiting, weakness, abdominal cramps, headache, diarrhea, nausea and dizziness.

Inhalation:

If vapours, mists or sprays of this product are inhaled, they may irritate the nose, throat and lungs.

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SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS

Reactions are not likely to occur unless the absorbed dose is extraordinary.

Inhalation:

Immediately remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Avoid mouth to mouth resuscitation. Keep person warm and at rest. Treat symptomatically and supportively as and when required. If irritation persists, seek medical advice immediately.

Skin contact:

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.

Eye contact:

Immediately flush the eyes with gently flowing lukewarm water or sodium bicarbonate solution for 20 to 30 minutes, occasionally lifting the upper and lower lids. If irritation persists, seek medical advice immediately.

Ingestion:

Do not induce vomiting. Victim should drink milk or egg white or large quantities of water. Never induce vomiting or give anything to drink to an unconscious person.

SECTION 5 - FIRE-FIGHTING MEASURES

Fire hazard and explosion hazard:

Not Flammable. No fire hazard.

Extinguishing agents:

Extinguish fires with water, carbon dioxide, dry powder, or alcohol-resistant foam.

Fire fighting:

Fight fire from maximum distance. Remove container from fire area if possible. Contain fire control agents for later disposal. Water can be used to cool unaffected containers.

Personal protective equipment:

Fire-fighters and others that may be exposed should wear full chemical protective clothing and full-face breathing apparatus.

Hazardous products of combustion:

When involved in a fire, this material may decompose and produce copper compounds, ammonia and nitrogen oxides.

SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

For personal protection see Section 8.

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:

For small liquid spills, soak up with lime, damp earth or sand, or other non-combustible absorbent material and place into containers for later disposal. For large liquid spills, contain the liquid for later disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

Handling:

Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing.

Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Keep out of reach of unauthorized persons, children and animals. Store in its original labelled container in shaded, well-ventilated area. Store in dry area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

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SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

Clothing:

Employee must wear appropriate protective (impervious) clothing, boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

Gloves:

Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

Eye protection:

The use of safety goggles (full-face shield) is recommended.

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.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark blue liquid.
Odour:	Mild vinegar odour.
Flash point:	Not applicable.
Specific gravity:	1.16 ± 0,05
Boiling point:	>100°C.
pH:	7.1 to 7.4
Solubility:	Completely in water.
Evaporation Rate:	Similar to water.

SECTION 10 - STABILITY AND REACTIVITY

Storage Stability:

The product is stable at room temperature in normal warehouse conditions in original packaging.

Stability:

Avoid extreme heat and contact with incompatible materials.

Incompatibility:

Incompatible with strong oxidizers and water-reactive materials. Many copper compounds form highly unstable acetylides.

Decomposition products:

This material may decomposes and produce copper compounds, ammonia and nitrogen oxides.

Polymerization:

Polymerization will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Effects:

Eyes: Mild to moderate irritant to eyes. May cause pain.

Skin: Mild to moderate irritant to skin. May cause mild skin sensitization.

Ingestion: May cause nausea, vomiting, weakness, abdominal cramps, headache, diarrhea and dizziness.

Inhalation: May irritate the nose, throat and lungs.

Chronic Effects:

Prolonged contact with skin may lead to dermatitis and skin sensitization.

Chronic inhalation overexposure may cause nasal ulceration and perforation, liver and kidney disorders and adverse effects on the lungs.

Target Organs: Acute: skin and eyes.
Chronic: lungs, kidneys and liver.

Carcinogenicity:

Inadequate evidence to state whether or not copper has the potential to cause cancer from lifetime exposure in drinking water. There is an excess of cancer cases in the copper smelting industry.

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SECTION 12 - ECOLOGICAL INFORMATION

The components of this product are relatively stable under ambient, environmental conditions. There is no evidence of any biotransformation for copper compounds. Copper is accumulated by all plants and animals.

Effect on Plants and Animals:

Copper Ammonium Complex (a component of this product) is a fungicide, subsequently, plant contaminated with this product any be adversely affected or destroyed. Animals contaminated with this solution may be injured.

Effect on Aquatic life:

Due to the fungicidal nature of this product, a release in a river or other body of water (especially large volumes) will kill fish and other aquatic life.

ECOTOXICOLOGY:

Toxic to birds, fish and Invertebrates.

Fish: Bluegill:	LC ₅₀ : 0.02 ppm in soft water
Brook trout:	LC ₅₀ : 0.09 ppm in soft water
Fathead minnows:	LC ₅₀ : 0.14 ppm in hard water

BCF Algae: 12

BCF Plants: 1000

BCF Invertebrate: 1000

BCF Fish: 10 - 100

SECTION 13 - DISPOSAL CONSIDERATION

Pesticide and container disposal:

Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

TRIPLE RINSE empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose. Destroy it by perforation and flattening and bury in an approved dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

SECTION 14 - TRANSPORT INFORMATION

UN No.: 3082

Road Transport ADR/IRD:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (copper ammonium acetate 315 g/l)

This product is considered a Marine Pollutant.

SECTION 15 - REGULATORY INFORMATION

Symbol: Xi

Indication of danger: Irritant

Risk phrases:

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 50 Very toxic to aquatic organisms.

Safety phrases:

S 2 Keep out of the reach of children.

S 23 Do not breathe vapour/spray.

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S 24/25 Avoid contact with skin and eyes.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

SECTION 16 - OTHER INFORMATION

Packaging:

Packed in 1, 2, 5, 10, 20, 25 & 50 litre plastic containers and labelled according to 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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