

1: IDENTIFICATION

| | | | |
|-------------------------------|---|--------------------------|--|
| Chemical Name | Copper Monoxide, 2-aminoethanol | Trade Name | AXIVOR |
| Synonyms | Copper Oxide (II), Monoethanolamine | Molecular Formula | $\text{CuO} + \text{C}_2\text{H}_7\text{NO}$ |
| Uses | Fertilizer | | |
| Manufacturer/ Supplier | Ulink AgriTech Pvt. Ltd. Office Nos. 001 And 002, Ground Floor Wing "A" And Nos. 003 And 004 Ground Floor Wing "B", Nyati Tech Park, Wadgaon Sheri, Pune - 411014, Maharashtra | | |
| Emergency Contact | 9503095030 | E-mail | info@agrostar.in |

2: COMPOSITION/INFORMATION OF INGREDIENTS

Mixture

| Chemical Name | CAS # | Percent or Content (w/w) |
|-------------------|-------------|--------------------------|
| Copper Oxide (II) | 1317 -38 -0 | 25.5% - 27% |
| Monoethanolamine | 141 -43 -5 | 12% - 13.5% |

3: HAZARD IDENTIFICATION

Hazard Classification and Indication:

Skin corrosion, cat. 1B. H314: Causes severe skin burns and eye damage. Serious eye damage, cat. 1, H318. Causes serious eye damage.

Specific target organ toxicity – single exposure, category 3. H335: May cause respiratory irritation.

Dangerous for the aquatic life, acute toxicity, category 1. H400: Very toxic to aquatic life.

Dangerous for the aquatic life, chronic toxicity, category 1. H410: Very toxic to aquatic life with long lasting effects.

Label Element:

Hazard Pictograms: GHS05, GHS07, GHS09

Signal Word: Danger

Hazard Statements: H314, H335, H410

Precautionary statements: P260, P305 + P351 + P338, P303 + P361 + P353, P280, P310, P264

Contains: Monoethanolamine

The product is classified as hazardous to the aquatic environment in both categories: acute and chronic. It's possible to report only the statement H410 on the label

Other Hazards:

Based on available data, the product does not contain PBT or vPvB substances in percentage $\geq 0.1\%$. The product does not contain substances having properties that interfere with the endocrine system in a concentration $\geq 0.1\%$.

4: FIRST AID MEASURES

General: Have the product container, label or safety data sheet while seeking medical attention, a poison control center or physician, or going for treatment.

Inhalation: Move person to fresh air and keep warm and at rest in a position comfortable for breathing. If necessary, administer oxygen. If breathing stops, perform artificial respiration. Immediately seek medical attention if symptoms are severe or persist.

Ingestion: Do not induce vomiting unless told by doctor. Never give anything orally to unconscious person. Seek medical attention immediately and show this container or label.

Skin Contact: Product is Irritant/corrosive to skin. In case of skin contact, immediately wash skin area with plenty of water and soap. Seek medical attention immediately.

Eye Contact: Rinse immediately with plenty of water for several minutes. After 5 minutes remove contact lenses if present and continue rinsing with plenty of water. Continue to rinse with eyelid wide open for at least 15 -20 minutes. Seek medical attention if irritation develops.

Symptoms and Effects, Both Acute and Delayed: Allergic reactions.

5: FIRE FIGHTING MEASURES

Extinguishing Media: Carbon Dioxide, powder and nebulized water.

Unsuitable Extinguishing Media: None.

Specific Hazard: Avoid breathing combustion products

Special Procedures: Do not discharge extinguishing water into the drain or water bodies. If risk of water pollution occurs, notify appropriate authorities. Move containers away from area if it can be done without risk. If possible without risk, remove containers from fire zone, cool with jets of water to avoid product decomposition and the development of substances potentially hazardous to health. Collect the extinguishing water which must not be discharged into the sewers. Dispose of the contaminated water used for extinguishing and the residue of the fire according to current regulations. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products.

Protection of Fire Fighters: Wear flame retardant clothes and self-contained open-circuit compressed air breathing apparatus.

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ventilate spillage area. Stop the loss if there is no danger. Wear suitable protective equipments to prevent contamination of skin, eyes, and personal clothing. These indications are valid for both processing workers and emergency interventions.

Environmental Precaution: Prevent the product from entering sewers, surface water, groundwater

Methods for Cleaning -up: Suck up the leaked product into a suitable container for proper disposal in accordance with local, state and federal regulation. Absorb the remainder with inert absorbent material. Provide sufficient ventilation of the place affected by the leak. Clean contaminated floors and objects thoroughly with water and detergents.

7: HANDLING & STORAGE

Handling: Avoid spillage. Do not eat, drink, or smoke in working areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering areas where meals are consumed. Avoid the dispersion of the product into the environment.

Storage: Store in dry, cool and well-ventilated area away from strong reducing agents. Keep preferably at a temperature between 20°C and 35°C. Keep in original container and tightly closed when not in use. Keep out of reach of children. Do not contaminate water, food or feed by storage or disposal. Keep containers away from any incompatible materials, see section 10. Avoid high air humidity and sunlight exposure. Avoid temperatures under -5 °C and over 40°C. Use normal safety procedure and good personal hygiene.

8: EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Measures: Use local exhaust ventilation to keep airborne concentrations of dust below permissible exposure limits. Handle in accordance with good industrial hygiene and safety practice.

General Protection: Avoid contact with eyes and skin. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and contaminated clothing.

Personal Protection: Follow all precautions and instructions on the label. In all other cases the following recommendations would apply.

Respiratory Protection: When exposure limits for a substance are exceeded, use a Type A filter mask, selecting the class (1, 2, or 3) based on the utilization limit. If mixed hazards (gases, vapors, and/or particles) exist, combined filters are necessary. If the substance is odourless or its odour threshold is higher than the exposure limit, or in an emergency, an open -circuit compressed air breathing apparatus or an air -supplied respirator should be worn; always refer to the relevant code of practice for the correct device selection.

Skin Protection: Wear suitable protective working clothing including long sleeved shirt, long pants, gloves, shoes and socks to avoid skin contact. Any clothing or other absorbent material which has been drenched or heavily contaminated must be discarded.

Hand Protection: Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyvinyl chloride (PVC) or Viton.

Eye Protection: Wear safety glasses with side shields or goggles for eyes protection should be used. Safety showers and eyewash should be easily available.

9: PHYSICAL/CHEMICAL PROPERTIES

| | | | | |
|--|-------------------------------|-------------------------------|------------------------------|------------------------------|
| Appearance: Liquid | Colour: Green -brown | pH at 20°C: 10 - 11 | Odour: Characteristic | Boiling Point: >100°C |
| Solubility in Water: Insoluble | Physical State: Liquid | Freezing Point: < 0°C. | Density [g/cc]: 1.4 | |
| Flammability: Not Flammable, Explosive or Comburent, Contains Water | | | | |

10: STABILITY & REACTIVITY

Stability: Stable under normal circumstances. **Material to Avoid:** Monoethanolamine - Strong acids and strong oxidants. Copper and copper alloys. Isocyanates.

Hazardous Decomp. Products: Monoethanolamine -Nitrogen Oxide NOx, Carbon oxide.

Conditions to Avoid: Avoid exposure to high temperature

Hazardous Reactions: No particular dangers of reaction with other substances under normal conditions of use.

11: TOXICOLOGICAL INFORMATION

Acute Toxicity:

ATE (Inhalation of mists/dusts) of mixture: >5 mg/l

ATE (Inhalation of gas) of mixture: >20000mg/l

ATE (Dermal) of mixture: >2000 mg/kg

ATE (Inhalation of vapour) of mixture: >20 mg/l

ATE (Oral) of mixture: > 2000 mg/kg

Copper Oxide (II): Rat oral LD50 [mg/kg]: 5000

Rat inhalation LC50 [mg/kg]: 14.5

Monoethanolamine: Rat oral LD50 [mg/kg]: 1089

Rat inhalation LC50 [mg/l/6h]: >1.3

Dermal (rabbit) LD50 [mg/kg]: 2504

Skin Corrosion/Skin Irritation: Cause skin corrosion.

Severe Eye Damage/Eye Irritation: Cause serious eye damages

Respiratory or Skin Sensitization: Based on the available data, the classification criteria are not met.

Mutagenicity: Based on the available data, the classification criteria are not met. **Carcinogenicity:** Based on the available data, the classification criteria are not met.

Reproductive Toxicity: Based on the available data, the classification criteria are not met.

Specific target organ toxicity (STOT) – Single exposure: May cause respiratory irritation

Specific target organ toxicity (STOT) – Repeated exposure: Based on the available data, the classification criteria are not met.

12: ECOLOGICAL INFORMATION

The product is considered dangerous for the environment and has toxicity to aquatic organisms with long -term negative effects for the aquatic environment

Copper Oxide (II): LC50 Fish: 0.242mg/l/96h;

EC50 Shellfish: 0.002mg/l/48h;

NOEC Chronic Fish: 724 mg/l;

NOEC Chronic Shellfish: 0.29mg/l;

NOEC Chronic Algae/Aquatic plants: 0.04mg/l

Monoethanolamine: LC50 Fish: 349 mg/l/96h

EC50 Shellfish: 65mg/l/48h

EC50 Algae/Aquatic plants: 2.8mg/l/48h

NOEC Chronic Fish: 1.24mg/l

NOEC Chronic Shellfish: 0.85mg/l

Persistence and Degradability: Monoethanolamine - Biodegradation: Parameter: DOC reduction; Effective doses: 90%, Exposure time: 21 days.

Bioaccumulative Potential: Monoethanolamine - Biological concentration factor (FCB): 2.3 – 9.2

Mobility in Soil: Nutrient for plants.

Results of PBT and vPvB Assessment: Based on the available criteria, the product does not contain PBT and vPvB in percentage ≥ 0.1%.

13: DISPOSAL CONSIDERATION

Waste -disposal Procedures: Reuse if possible. Product residues are to be considered special hazardous waste. The dangerousness of the waste that partially contains this product must be evaluated according to the laws in force.. Dispose of this product only according to the label. Do not contaminate drains, streams, rivers or waterways with the chemical or used container.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14: TRANSPORT INFORMATION

UN No.: 27352

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (Ethanolamine; Copper Oxide (II))

Land Transport (ADR/RID): Class - 8, Packaging group -III, Environmental Hazards -Yes

Sea Transport (IMO/IMDG): Class - 8, Packaging group -III, Marine Pollutant -Yes

Air Transport (IATA/ICAO): Class - 8, Packaging group -III

15: REGULATORY INFORMATION

Hazard Symbols: GHS09, GHS07

Hazard Statement: H411, H360FD

16: OTHER INFORMATION

DISCLAIMER OF LIABILITY The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

----- END -----