

SECTION 1: IDENTIFICATION

Product Name: Nutriseed ZMC
Recommended Use: Fertilizer; See product label for a complete list of uses and use sites.
Restrictions on Use: See product label for any restrictions on the use of this product.
Chemical Name: Urea, Copper, Manganese and Zinc mixture
Manufactured for: Vivid Life Sciences, LLC
 P.O. Box. 41632
 Minneapolis, MN 55441

For Medical Exposure Concerns, Contact the Poison Control Center: 1-800-222-1222

SECTION 2: HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: Brown-green liquid. Inhalation of large concentrations of vapor may cause respiratory irritation.

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

| | |
|--|------------|
| Specific Target Organ Toxicity – Single Exposure | Category 3 |
| Specific Target Organ Toxicity – Repeated Exposure | Category 2 |



Signal Word: WARNING
Hazard Statement(s): May cause respiratory irritation.
 May cause damage to organs through prolonged or repeated inhalation.
Precautionary Statement(s): **Prevention:** Do not breathe mist/vapors/spray. Use only outdoors or in a well-ventilated area.
Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
 Get medical advice/attention if you feel unwell.
Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with Federal, state and local regulations.

The following percentage of the mixture consists of components with unknown hazards regarding the acute toxicity:

48.61% Acute oral toxicity
 100.0% Acute dermal toxicity
 100.0% Acute inhalation toxicity
 23.86% Eye irritation
 23.86% Skin irritation
 23.86% Skin sensitization

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS Number | Weight % |
|---------------------|------------|--------------|
| Zinc oxide | 1314-13-2 | 40.0 – 45.0% |
| Manganese carbonate | 598-62-9 | 21.0 – 27.0% |
| Copper carbonate | 12069-69-1 | 3.0 – 8.0% |
| Urea | 57-13-6 | 1.0 – 5.0% |

*Ingredients not listed or listed with a weight % range are considered a trade secret and are withheld under 29 CFR 1910.1200(i).

SECTION 4: FIRST AID MEASURES

| | |
|---|--|
| IF IN EYES: | Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention if irritation persists. |
| IF ON SKIN: | Remove contaminated clothing and wash before re-using. Flush skin with water and then wash with soap and water. Seek medical attention if irritation persists. |
| IF INHALED: | Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. |
| IF INGESTED: | Seek medical attention or call a poison control center for treatment advice. Do not induce vomiting unless instructed to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. |
| Note to Physician: Treat symptomatically | |
| Most important symptoms/effects, acute and delayed: Respiratory irritation | |

SECTION 5: FIRE-FIGHTING MEASURES

| | |
|--|---|
| Suitable Extinguishing Media: | Water fog, foam, dry chemical, carbon dioxide (CO ₂), water spray |
| Unsuitable Extinguishing Media: | None known |
| Hazardous Combustion Products: | Thermal decomposition may include toxic and hazardous oxides of carbon, nitrogen and zinc. |
| Special Protective Equipment & Precautions: | Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Avoid breathing vapors; keep upwind. |
| Unusual Fire & Explosion Hazards: | Closed containers may explode from vapor expansion in high heat. |

SECTION 6: ACCIDENTAL RELEASE MEASURES

| | |
|-----------------------------------|--|
| Personal Precautions: | See Section 8 for personal protection equipment. |
| Environmental Precautions: | Do not allow spilled product to enter sewers or waterways. |
| Methods for Containment: | Contain spilled product by diking area with sand or earth. Cover contained spill with an inert absorbent material such as sand, vermiculite or other appropriate material. Vacuum, scoop or sweep up material and place in a container for disposal. Do not place spilled material back in original container. |
| Methods for Clean-up: | |
| Other Information: | None known |

SECTION 7: HANDLING AND STORAGE

| | |
|---------------------------------------|---|
| Handling: | Ensure adequate ventilation during handling and use. Immediately clean up spills that occur during handling. Keep containers closed when not in use. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics. |
| Storage: | Store in a secured area away from children, feed and food products. Store in original container only and in a cool, well-ventilated dry place above the minimum storage temperature. |
| Storage Temperature (Min/Max): | 40°F |
| Product Incompatibilities: | Strong bases, acids and oxidizers. |

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

| COMPONENT | OSHA PEL | ACGIH TLV | NIOSH REL |
|---------------------------------------|--------------------------|----------------------------|---|
| Nuisance particulate (liquefied mist) | | 10 mg/m ³ TWA | |
| Copper carbonate | | | 1.0 mg/m ³ TWA |
| Manganese carbonate | 5 mg/m ³ CEIL | 0.02 mg/m ³ TWA | 1.0 mg/m ³ TWA 3.0 mg/m ³ ST |

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. If airborne concentrations exceed permissible levels or if a pre-existing respiratory condition exists, use a NIOSH approved air-purifying respirator with cartridges/canisters approved for general particulates.

Eye Protection: Wear chemical goggles or safety glasses and full face shield. Contact lenses are not protective eye devices.

Protective Gloves: Wear chemically protective gloves.

Other Protective Clothing: Wear long-sleeve shirt, long pants and shoes plus socks to prevent skin contact.

General Safety Measures: Never eat, drink, nor use tobacco in work areas. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------------------|--------------------|---|----------------|
| Appearance: | Brown-green liquid | Upper/Lower Flammability Limits: | Not determined |
| Odor: | Not determined | Vapor Pressure: | Not determined |
| Odor Threshold: | Not determined | Vapor Density: | Not determined |
| pH: | 8.5 -10.5 | Relative Density: | 1.92 – 1.94 |
| Melting /Freezing Point: | Not determined | Solubility (water): | Soluble |
| Boiling Point/Range: | >212°F (>100°C) | Partition Coefficient: | Not determined |
| Flash Point: | Not combustible | Auto-ignition Temperature: | Not determined |
| Evaporation Rate: | Not determined | Decomposition Temperature: | Not determined |
| Flammability: | Not applicable | Viscosity: | Not determined |

SECTION 10: STABILITY AND REACTIVITY

| | |
|--|--|
| Reactivity: | Contact with strong oxidizers may result in a fire. |
| Chemical Stability: | Stable under normal storage and handling conditions. |
| Possibility of Hazardous Reactions: | Will not occur |
| Conditions to Avoid: | Excessive heat |
| Incompatible Materials: | Strong bases, acids and oxidizers. |
| Hazardous Decomposition Products: | Thermal decomposition may include toxic and hazardous oxides of carbon, nitrogen and zinc. |

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye contact, Skin contact, Inhalation, Ingestion
Symptoms of Exposure: Respiratory irritation
Oral LD₅₀: >5,000 mg/kg (Estimated based upon component data)
Dermal LD₅₀: Not determined
Inhalation LC₅₀: Not determined
Eye Irritation/Damage: Not anticipated to cause eye irritation based upon component data.
Skin Corrosion/Irritation: Not anticipated to cause skin irritation based upon component data.
Skin Sensitization: Not anticipated to be a skin sensitizer based upon component data.

Chronic/Sub-chronic Toxicity: No data available
Mutagenicity: No data available
Reproductive Toxicity: No data available
Neurotoxicity: No data available
Target Organs: Respiratory tract
Aspiration Hazard: No data available
Carcinogenicity:

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---------------|-------|------|-----|------|
| None listed | | | | |

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Fish Toxicity: Not determined
Aquatic Invertebrate Toxicity: Not determined
Aquatic Plant Toxicity: Not determined
Avian Toxicity: Not determined
Honeybee Toxicity: Not determined

ENVIRONMENTAL

EFFECTS:

Persistence and Degradability: Not determined
Bioaccumulation: Not determined
Mobility: Not determined
Other Adverse Effects: Not determined

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with applicable Federal, state and local laws and regulations.
Container Disposal: Triple rinse and recycle the container or dispose of in accordance with Federal, state and local laws and regulations.
RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORTATION INFORMATION

DOT (Ground): This product is not regulated by the U.S. Department of Transportation as a hazardous material for ground shipment.

IMDG (Sea): This product is not regulated by the IMDG as a hazardous material for shipment by sea.

IATA (Air): This product is not regulated by the IATA as a hazardous material for shipment by air.

SECTION 15: REGULATORY INFORMATION

TSCA Inventory: All components are either listed or exempt from listing on the TSCA inventory.

SARA Title III Information:

Section 302 – Extremely hazardous substances: None listed

Section 311/312 – Hazard Categories: Immediate (acute), Delayed (chronic)

Section 313 – This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS Number | Weight % |
|---------------------|------------|--------------|
| Zinc compounds | N982 | 40.0 – 45.0% |
| Manganese compounds | N450 | 21.0 – 27.0% |
| Copper compounds | N100 | 3.0 – 8.0% |

CERCLA – This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

| Chemical Name | CAS Number | RQ | Quantity of Finished Product |
|---------------|------------|----|------------------------------|
| None listed | | | |

CALIFORNIA PROPOSITION 65:

| Chemical Name | CAS Number | Prop 65 Category(ies) |
|---------------|------------|-----------------------|
| None listed | | |

U.S. STATE RIGHT-TO-KNOW REGULATIONS:

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|---------------------|------------|---------------|--------------|
| Zinc oxide | X | X | X |
| Manganese compounds | X | | X |
| Copper compounds | X | | X |

SECTION 16: OTHER INFORMATION

| | | | | |
|-------------|-------------------------|-----------------------|----------------------|-------------------------------|
| NFPA | Health Hazards 2 | Flammability 1 | Instability 0 | Special Hazards – None |
|-------------|-------------------------|-----------------------|----------------------|-------------------------------|

Disclaimer: The information contained in this MSDS is by way of general comment only. Because conditions of use, suitability of product, and application conditions are beyond the control of Agrichem, this MSDS does not offer any advice in respect to any product. The authors and Agrichem Manufacturing Industries Pty Ltd hereby disclaim any liability to any person, property, or thing in respect of any consequence of anything done or omitted to be done by any person in reliance, whether wholly or in part, upon whole or part of the contents of this MSDS.

Revision Date: November 25, 2015
Document Superseded: N/A – New document
Revision Note: