

Material Safety Data Sheet

Material Name: COPPER COUNT N SOLUTION

MSDS ID: MRD-111

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Copper Ammonium Complex

Product Use: Pesticide

Manufacturer Information

Mineral Research and Development
5910 Pharr Mill Road
Harrisburg, NC 28075

Phone: 800-454-4805
Fax: 704-455-6507
Emergency # 1-800-424-9300

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Hazards Identification ***

Emergency Overview

This product is irritating to the eyes, respiratory system and skin. May cause allergic skin sensitization reactions.

Potential Health Effects: Eyes

Contact with the eyes can cause moderate irritation. Symptoms may include discomfort or pain and redness.

Potential Health Effects: Skin

This product is irritating to the skin. Depending on the duration of contact, symptoms will include reddening, discomfort, irritation, and possible tissue damage. Prolonged or repeated skin contact may cause skin irritation or allergic skin sensitization reaction.

Potential Health Effects: Ingestion

Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Potential Health Effects: Inhalation

This product may cause irritation to the respiratory system. Overexposure to processing fumes may cause metal fume fever which is an influenza like illness. Symptoms include headache, metallic taste in the mouth, cough, thirst, throat irritation, shortness of breath, fever, sweating and pain in the limbs. This illness is not permanent and recovery usually occurs within 24-48 hours after onset.

Medical Conditions Aggravated by Exposure

Pre-existing skin and eye conditions.

HMIS Ratings: Health: 2 Fire: 0 Physical Hazard: 0 Pers. Prot.: Safety glasses, impervious gloves, protective clothing
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7732-18-5	Water	90-95
23087-46-9	Copper Ammonium Complex	5-10

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Copper compounds, n.o.s..

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is considered hazardous under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

Material Safety Data Sheet

Material Name: COPPER COUNT N SOLUTION

MSDS ID: MRD-111

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.

First Aid: Skin

For skin contact, wash immediately with soap and water for at least 15 minutes. In case of contact, immediately remove contaminated clothing and flush skin with copious amounts of water. If irritation persists get medical attention.

First Aid: Ingestion

If material is ingested, immediately contact a physician or poison control center. Give one to two glasses of water or milk. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions.

First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. If irritation persists get medical attention.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.

This product is an aqueous mixture, which will not burn.

Hazardous Combustion Products

Copper compounds, ammonia, and nitrogen oxides.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this is without risk. Wear appropriate protective equipment and clothing during clean-up. Contain the discharged material and dike the spilled material where possible. Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways.

Clean-Up Procedures

Absorb spill with inert material such as: lime, polypads, or other suitable absorbent material. Shovel the absorbed material into appropriate container for disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Isolate exposure. Wear appropriate personal protective equipment. Follow all Local, State, Federal and Provincial regulations for disposal.

*** Section 7 - Handling and Storage ***

Handling Procedures

Open container carefully, as needed to relieve any build up of pressure. Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product. Use this product with adequate ventilation. Wash thoroughly after handling.

Material Safety Data Sheet

Material Name: COPPER COUNT N SOLUTION

MSDS ID: MRD-111

Storage Procedures

Store in a cool, dry area. Do not freeze. Store away from direct sunlight and any sources of heat. Empty product containers may contain product residue. Do not reuse empty containers. Do not store this material in open or unlabeled containers.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

Keep formation of airborne mists to a minimum.

B: Component Exposure Limits

Copper Ammonium Complex (23087-46-9)

NIOSH: 1 mg/m³ TWA (as Cu, except Copper fume) (related to Copper compounds)

Engineering Controls

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear chemical goggles and face shield.

Personal Protective Equipment: Skin

Wear impervious (neoprene) or rubber gloves, impervious apron.

Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of vapors or mists, appropriate approved NIOSH respiratory protection must be provided. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2-1992). A written respiratory protection program, including provisions for medical certification, training, fit testing, exposure assessments, maintenance, inspection, cleaning, and convenient, sanitary storage must be implemented.

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended. An emergency spill response will necessitate the use of more stringent personal protective equipment.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Dark Blue	Odor:	None
Physical State:	Liquid	pH:	@ 59°F (15°C): 6.0 - 8.0
Vapor Pressure:	Not Applicable	Vapor Density:	Not Applicable
Boiling Point:	>212°F (>100°C)	Melting Point:	Not Determined
Solubility (H2O):	Completely	Specific Gravity:	@ 59°F (15°C): 1.16
Flash Point:	Not flammable	Flash Point Method:	Not applicable
Auto Ignition:	Not flammable	LFL:	Not applicable
UFL:	Not applicable	Freezing Point:	-31°F (-35°C)
Evaporation Rate:	Similar to water	Octanol/H2O Coeff.:	Not Available

Physical Properties: Additional Information

No additional information available.

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

Avoid contact with extreme heat and incompatible materials.

Incompatibility

This product is incompatible with flammable and combustible materials, strong reducing agents, water reactives and finely powdered metals.

Hazardous Decomposition

Upon decomposition, product may yield copper compounds, ammonia, and nitrogen oxides.

Material Safety Data Sheet

Material Name: COPPER COUNT N SOLUTION

MSDS ID: MRD-111

Possibility of Hazardous Reactions

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Dose Effects

A: General Product Information

This product is irritating to the eyes, skin, and respiratory system. Skin sensitization, characterized by redness, inflammation, itching and/or burning may result from prolonged or repeated contact with this material.

B: Component Analysis - LD50/LC50

Water (7732-18-5)

Oral LD50 Rat: >90 mL/kg

Repeated Dose Effects

Liver and kidney disorders and adverse effects on the lungs, may also occur as a result of chronic exposure.

Epidemiology

No epidemiological data is available for this product.

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Mutagenicity

No data available for this product.

Teratogenicity

No data available for this product.

Neurological Effects

No data available for this product.

Other Toxicological Information

No additional information available.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

In high concentrations, this product may be harmful to both terrestrial and aquatic plant or animal life.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate

No data available for this product.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: This product is not regulated as a hazardous material for transportation.

Canada Transportation of Dangerous Goods Information

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Material Safety Data Sheet

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MSDS ID: MRD-111

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Copper Ammonium Complex (23087-46-9)

SARA 313: 1.0 % de minimis concentration (does not include copper phthalocyanine compounds substituted only with hydrogen and/or bromine and/or chlorine, Chemical Category N100) (related to Copper compounds)

SARA 311/312: Acute Health Yes Chronic Health Yes Fire No Pressure No Reactive No

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Copper Ammonium Complex (related to Copper compounds)	23087-46-9	Yes ₁	No	No	Yes ₁	Yes ₁	No

Canadian WHMIS Information

A: General Product Information

Class D2B: Materials causing other toxic effects

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Copper Ammonium Complex	23087-46-9	1 % (related to Copper compounds, n.o.s.)

WHMIS Classification: Class D2B: Material Causing Other Toxic Effects

Additional Regulatory Information

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	NDSL	EINECS	AUST	MITI	PHIL	KOREA	ELINCS	CHINA
Water	7732-18-5	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes
Copper Ammonium Complex	23087-46-9	Yes	No	Yes	Yes	No	No	No	No	No	No

Material Safety Data Sheet

Material Name: COPPER COUNT N SOLUTION

MSDS ID: MRD-111

* * * Section 16 - Other Information * * *

Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

Key/Legend

NA = Not available or Not Applicable. CERCLA = Comprehensive Environmental Response Compensation & Liability Act; SARA = Superfund Amendments & Reauthorization Act; RCRA = Resource Conservation & Recovery Act. TLV = Threshold Limit Value. NFPA = National Fire Protection Association. HMIS = Hazardous Material Information System. CFR = Code of Federal Regulations. HEPA = High Efficiency Particulate Air EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

End of Sheet MRD-111