

# SAFETY DATA SHEET

## Ammonium (8%) Copper Solution

### Section 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

**MANUFACTURED FOR:**

Land View, Inc.  
PO Box 475  
Rupert, ID 83305

**EMERGENCY TELEPHONE NO.:**

DAYS: (208) 531-4100  
24 Hour Emergency HAZMAT Response: (800) 229-5252  
EPA National Response Center: (800) 424-8802

**PRODUCT NAME:** Ammonium (8%) Copper Solution  
**CHEMICAL DESCRIPTION:** Micronutrient Concentrate Solution  
**PRODUCT USE:** Various Industrial and Agricultural Applications

### Section 2 – HAZARDS IDENTIFICATION

**HAZARD CLASSIFICATION:** **H302** Acute oral Toxicity Cat 4  
**H315** Skin Irritation Cat 2  
**H319** Eye Irritation Cat 2A  
**H335** Specific target organ toxicity – single Exposure Cat 3  
**H402** Aquatic Acute Cat 3 (Bi-product)

**PICTOGRAMS:**

**SIGNAL WORD:** Warning

**HAZARD STATEMENT:** **H302** Harmful If Swallowed  
**H315** Causes skin irritation  
**H319** Causes serious eye irritation  
**H335** May cause respiratory irritation  
**H402** Harmful to aquatic life.

**PRECAUTIONARY STATEMENTS:**

**P261** Avoid breathing mist/spray  
**P264** Wash thoroughly after handling  
**P270** Do not eat, drink or smoke when using this product.  
**P271** Use only outdoors or in well ventilated area  
**P273** Avoid release to the environment  
**P280** Wear protective gloves.  
**P280** Wear eye protection.  
**P301+P312+P330** **If Swallowed:** Rinse Mouth. Call a Poison Center if you feel unwell.  
**P302+P351** **If On Skin:** Wash with Plenty of water and Soap.  
**P304+P340** **If Inhaled:** Remove person to fresh air and keep comfortable for breathing.  
**P305+P351+P338** **If In Eyes:** Rinse cautiously with water for several minutes. Remove contact lenses , if present and easy to do. Continue rinsing.  
**P332+P313** **If Skin Irritation Occurs:** Get medical attention.  
**P337+P313** **If Eye Irritation Persists:** Get medical attention.  
**P403+P233** Store in well ventilated place. Keep container tightly closed.  
**P501** Dispose of contents/container in accordance with local/state regulations.

**OTHER HAZARDS:** Bi-product of chelation is ammonium sulfate. Contact with strongly alkaline materials such as Sodium Hydroxide may release toxic ammonia gas.

**SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:** The primary routes of overexposure for this material are via inhalation and contact with skin and eyes. The following paragraphs describe the symptoms of overexposure to this material.

**INHALATION:** Product irritating to the nose, throat and respiratory tract. May cause shortness of breath coughing, and difficulty breathing.

**CONTACT WITH SKIN:** Causes symptoms of skin irritation such as reddening, and itching. Extended contact may cause blisters and burns.

**CONTACT WITH EYES:** Causes irritation, and reddening. May cause pain and swelling.

**INGESTION:** Large quantities may cause nausea, vomiting and cramps. Large quantities could be toxic.

### Section 3 – COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAME:** Ammonium (8%) Copper Solution

**SYNONYMS:** 8% Copper N.F.

<b>INGREDIENT NAME</b>	<b>CAS REGISTRY NUMBER</b>	<b>TYPICAL WT/VOLUME</b>
Copper Sulfate Pentahydrate	7758-99-8	32%
Ammonium Citrate Tribasic	67859-51-2	2.5%
Ammonia	1336-21-6	6%
Water	7732-18-15	Balance

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## Section 4 – FIRST AID MEASURES

**SKIN EXPOSURE:** Contact causes irritation to the skin. Flush skin with running water and wash with soap. Remove contaminated clothing and shoes. If irritation persists, obtain medical attention.

**EYE EXPOSURE:** Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. Remove contact if present and easy to do. Continue flushing. If irritation persists, obtain medical attention.

**INHALATION:** Move victim to fresh air. Get medical attention for breathing difficulty.

**INGESTION:** Have victim rinse mouth with water. If conscious, give large quantity of water. Immediately seek medical attention. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

**NOTE:** Take copy of this Safety Data Sheet along for informative support of Medical staff when seeking Medical advice/attention.

## Section 5 – FIRE FIGHTING MEASURES

**FLASH POINT:** No applicable. Product is non-flammable.

**AUTOIGNITION TEMPERATURE:** Not Applicable.

**FLAMMABLE LIMITS (in air by volume, %):** Lower (LEL): Not applicable.  
Upper (UEL): Not applicable.

**FIRE EXTINGUISHING MATERIALS:** Carbon Dioxide: YES                      Foam: YES  
Dry Chemical: YES

**HAZARDOUS COMBUSTION PRODUCTS:** Thermal decomposition may produce nitrogen oxide, carbon oxide, and metal oxides.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None Known

**SPECIAL FIRE-FIGHTING PROCEDURES:** Wear protective clothing and NIOSH-approved self-contained apparatus operated in positive pressure mode.

## Section 6 – ACCIDENTAL RELEASE MEASURES

**IN CASE OF SPILL OR LEAK:** Stop the leak, if possible. Ventilate the space involved. Use appropriate personal protection equipment. Dike spill with inert material (sand, earth, etc.) to prevent waterway contamination. Collect run-off and transfer to drums or tanks for later disposal. Consult with regulatory specialists to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

## Section 7 – HANDLING AND STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** Wear appropriate Personal Protection Equipment. As with all chemicals, avoid getting this product on you or in you. Wash hands after handling this product. Do not eat, drink, smoke or apply cosmetics while handling this product. All work practices should minimize the generation of spills, splashes and aerosols. Remove contaminated clothing immediately.

**STORAGE AND HANDLING PRACTICES:** Avoid breathing dust or mists generated by this product. Use in a well-ventilated location. Containers of this product must be properly labeled. Empty containers may contain residual product. Therefore, empty containers should be handled with care. Store containers in a cool, dry location. Prevent spillage and separate from strong oxidizers or alkalis. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Follow practices indicated in Section 8 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely if necessary. Collect all spills, residues, and rinsates, and dispose according to applicable U.S. Federal, State, or local procedures, or the applicable Canadian standards.

## Section 8 – EXPOSURE CONTROL, PERSONAL PROTECTION

**VENTILATION AND ENGINEERING CONTROLS:** Use adequate local or general ventilation where necessary to maintain the concentrations well below the recommended occupational exposure limits. Ensure the eyewash stations and safety showers are proximal to the work area.

**RESPIRATORY PROTECTION:** Handle outside or with sufficient ventilation. If a mist or airborne particles will exceed the approved exposure limits, wear a full face-piece respirator approved by MSHA/NIOSH.

**EYE PROTECTION:** Wear face-shield and splash goggles, to prevent contact with this product. As a general rule, do not wear contact lenses when handling.

**SKIN PROTECTION:** Wear protective gloves (rubber or neoprene preferred) and chemically resistant clothes to minimize skin exposure.

**OTHER:** Emergency eye wash stations and deluge safety showers should be available in the work area. When handling bulk shipments a full rubber suit, boots, gloves, goggles, face shield and hardhat should be worn.

## Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE AND COLOR:</b>	Clear to Light Tan	<b>UPPER/LOWER FLAMMABILITY LIMIT:</b>	Not Flammable
<b>ODOR:</b>	Feint Ammonia	<b>VAPOR PRESSURE:</b>	Not Available
<b>ODOR THRESHOLD:</b>	Not Available	<b>VAPOR DENSITY:</b>	Not Available
<b>pH @ 15°C (59°F):</b>	~10	<b>RELATIVE DENSITY(specific gravity):</b>	1.23 g/ml
<b>MELTING PT/FREEZING PT:</b>	Not Available	<b>SOLUBILITIES:</b>	Soluble with Water
<b>INITIAL BOILING PT/RANGE:</b>	>212 F	<b>LOG WATER/OIL DIST. COEF(n-octanol/water):</b>	Not Available
<b>FLASH PT:</b>	Not Flammable	<b>AUTO-IGNITION TEMPERATURE:</b>	Not Available
<b>EVAPORATION RATE (n-BuAc = 1):</b>	Not Available.	<b>DECOMPOSITION TEMPERATURE:</b>	Not Available
<b>FLAMMABILITY (SOLID, GAS):</b>	No	<b>VISCOSITY:</b>	Not Available
<b>BULK DENSITY:</b>	10.2 lbs/gallon		

*This data is not intended to be used as a Technical Data Sheet. It is provided for determination of Safety and Health issues. If specific Technical*

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Specification are required, contact the company or sales representative.

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### Section 10 – STABILITY AND REACTIVITY

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**STABILITY:** Generally considered stable.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Ammonia vapors may be release with strong caustic (high pH) solutions. Thermal decomposition products include oxides of nitrogen, carbon, and copper.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Strong Oxidizing material.

**CONDITIONS TO AVOID:** Incompatibles, Exposure to flames or excessive heat

**HAZADARDOUS POLYMERIZATION:** Will not occur.

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### Section 11 – TOXICOLOGICAL INFORMATION

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Ingredient	Test	Result	Route	Species
Copper Sufate Pentahydrate	LDL	1088 mg/kg	Oral	Human
	LD50	472 mg/kg	Oral	Rat
Ammonium Hydroxide 24.5%	LD50	350 mg/kg	Oral	Rat

**CARCINOGENICITY:** This material is not listed as a human carcinogen by ACGIH, IARC, OSHA, NTP or the EU.

**REPRODUCTIVE EFFECTS:** Non Known

**MUTAGENICITY:** Mutagenic for mammalian cells. Contains material which may cause damage to the kidneys and liver.

**TERATOGENICTY:** Not Available

**SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:** The primary routes of overexposure for this material are via inhalation and contact with skin and eyes. The following paragraphs describe the symptoms of overexposure to this material.

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### Section 12 – ECOLOGICAL INFORMATION

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Ingredient	Test	Result	Species
Ammonium Sulfate	EC50	36.7 mg/L	fishes
	EC50	433 mg/L	Daphnia

**ECOTOXICITY:** No specific data available. Formulation made with this product exhibit relatively low toxicity.

**BIODEGRADATION:** This product are less toxic than the product itself..

**Special Remarks on the Products of Biodegradation:** If released to soil, copper sulfate may leach to groundwater, be partly oxidized, or bind to humic materials, clay, or hydrous of iron and manganese. In water, it will bind to carbonates as well as humic materials, clay and hydrous oxides of iron and manganese. Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. This lack of biomagnification appears common with heavy metals. In air, copper aerosols (in general) have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to >4 in a polluted, urban areas. (Copper sulfate pentahydrate)

**BOD5 and COD:** Not available.

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### Section 13 – DISPOSAL CONSIDERATIONS

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The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of a surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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### Section 14 – TRANSPORT INFORMATION

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#### United States (Under DOT)

Not Regulated

No specific information available.

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### Section 15 – REGULATORY INFORMATION

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**UNITED STATES:**

**CERCLA:** None

**SARA TITLE III:**

SARA Section 302 Extremely Hazardous Substances: None

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SARA Section 311/312: Acute  
SARA Section 313: RQ (Ammonia 1000lb) 16,666 of Product.

TSCA: Listed

CALIFORNIA PROPOSITION 65: Ammonia.

STATE RIGHT TO KNOW LISTS:

CANADA:

WHMIS (Canada): Not controlled

Domestic Substances List: Exempt New Substances Notifications if Registered as Micronutrient under the Fertilizers Act in Canada.

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### Section 16 – OTHER INFORMATION

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HEALTH: 2      REACTIVITY: 0      FLAMMABILITY: 0      ENVIRONMENT: 0

(0=Insignificant    1=Slight    2=Moderate    3=High    4=Extreme)

Brought into GHS/OSHA Guidelines

Revision Date: 1/7/15

Bryan Bonke M.S.

All information contained in this Material Safety Data Sheet is furnished free of charge and is intended for your evaluation. In our opinion the information is, as of the date of this Material Safety Data Sheet, reliable, however, it is your responsibility to determine the suitability of the information for your use. You are advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional or variable conditions or circumstances exist or because of applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information gathered by you, and you must make independent determinations of the suitability and completeness of the information from all sources to assure both proper use of the material described herein and the safety and health of employees. Accordingly, no guarantee is expressed or implied as to the results to be obtained based upon your use of the information.