SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Crop100™
Grades: Liquid nutrient supplement containing: 4.2% S, 0.080% B, 0.054% Co, 0.90% Cu, 0.90% Fe, 3.0% Mn, 0.037% Mo, 2.70% Zn and 24% organic components containing 1% N, 0.14% P_2O_5, 0.83% K_2O and 0.31% Mg weight/weight
Product use: Foliar fertilizer for agricultural and horticultural crops.
Restrictions on use: Apply 0.3 to 1.2 liters/ha on recommended crops. Do not over-apply.
Chemical name/synonyms: solution of sulfur, boron, cobalt, copper, iron, manganese, molybdenum and zinc

Manufactured by:
Cytozyme Laboratories, Inc.
2700 South 600 West
Salt Lake City, UT 84115
(801) 533-9208

EMERGENCY TELEPHONE NUMBERS (24 hour monitoring):
Medical Emergencies:
Utah Poison Control Center
(800) 222-1222 (U.S.A. & Canada)

Telephone Number for Information:
(801) 533-9208

SECTION 2. HAZARD IDENTIFICATION

Emergency overview:
The product can cause eye damage and is harmful if swallowed due to presence of micronutrients. Avoid breathing mist and contact with skin, eyes or clothing.
Potential ecological effects:
The product is safe to the environment at recommended doses. Large quantities of micronutrients can be harmful to plants and other species. Therefore, releases to the environment should be minimized.
Potential Health Hazards (Acute and Chronic):
Ingestion: May be harmful if swallowed due to presence of micronutrients.
Skin contact: May cause slight skin irritation. Chronic exposure may cause dry skin or irritation.
Eye contact: May cause eye irritation and in high concentrations eye damage.
Inhalation: May result in irritation of the upper respiratory tract.
Signs and Symptoms of Exposure:
Ingestion: Can cause digestive tract irritation, nausea, vomiting, diarrhea and abdominal pain

Skin contact: Can cause slight skin irritation. Chronic exposure may cause dry skin or irritation.
Eye contact Can cause eye irritation and in high concentrations eye damage.
Inhalation: May cause cough and irritation of nose and throat.
Medical Conditions Generally Aggravated by Exposure: Not known.

Data presented below are based on the active ingredients:
Acute Oral LD_{50}: Ammonium Molybdate Tetrahydrate: 3883 mg/kg body weight in rats. Boric Acid: 2,660mg/kg body weight in rats. Cobalt Nitrate Hexahydrate: 978 mg/kg body weight in rats. Copper Sulfate Pentahydrate: 352 mg/kg of body weight. Ferrous Sulfate Monohydrate: 319 mg/kg in rat; ferrous sulfate heptahydrate in mouse 1,520 mg/kg of body weight. Manganese Sulfate Monohydrate: 9,000 mg/kg of body weight in rats. Zinc Sulfate Monohydrate: 245 mg/kg of body weight in mouse.
Eye Effect: Draize test not available.
Acute Dermal LD_{50}: No data available.
Skin Effect: No data available.
Inhalation LC_{50}: Ammonium molybdate tetrahydrate: >1930 mg/m^3/4H.
Skin Sensitization: No data available.
Carcinogenicity: Cobalt nitrate hexahydrate in classified as A3 (proven for animals) by ACGIH and 2A (probable for human) by IARC.
Mutagenecity: Has not been identified.
Teratogenicity: No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS #	OSHA PEL	ACGIH TLV	UN Class
Boric acid	10043-35-3	Not available	2 mg/m^3	Not Listed
Cobalt nitrate hexahydrate	10026-22-9	Not available	0.02 mg/m^3 as Co	Not Listed
Copper sulfate pentahydrate	7758-99-8	1 mg/m^3 (as copper dust/mist)	1 mg/m^3 (as copper dust /mist)	Not Listed
Ferrous sulfate monohydrate	17375-41-6	As Fe 1 mg/m^3	As Fe 1 mg/m^3	Not Listed
Ammonium molybdate tetrahydrate	12054-85-2	5 mg/m^3 as Mo soluble compounds	0.5 mg/m^3 as Mo, soluble	Not Listed
Manganese sulfate monohydrate	10034-96-5	1 mg/m^3 (as manganese fume)	0.2 mg/m^3 (as manganese fume)	Not Listed
Zinc sulfate	7446-19-7	15 mg/m^3 (total dust)	Not available	Not Listed

monohydrate		5 mg/m^3(respirable fraction)		

SECTION 4. FIRST AID MEASURES

Eye contact: Immediately flush with copious amounts of water for 15 minutes. If irritation persists, contact physician.
Skin contact: Wash thoroughly with soap and water.
Inhalation: Remove person to fresh air. If irritation persists, contact physician.
Ingestion: Give glass of water if the victim is conscious. Never give water to an unconscious person. DO NOT INDUCE VOMITING unless told to do so by the Poison Control Center or physician. If vomiting occurs naturally, rinse mouth and repeat administration of water. Contact physician or Poison Control Center immediately.

SECTION 5. FIRE FIGHTING MEASURES

General hazards: Active ingredient does not burn or support combustion.
Extinguishing Media: Use media appropriate for the surrounding fire.
Flammability classification (29 CFR 1910.1200): Active ingredient is non-flammable.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General: Product at high concentrations may be harmful to plants because of presence of micronutrients (see section 12 for details).
Land spill: Isolate spill area. When necessary confine spill with dike area. Collect liquid portion if clean and re-use it. Absorb the residual product with an absorbent such as clay, sand, or soil. Use lime (calcium oxide) or soda ash (sodium carbonate) to form insoluble copper salts. Shovel, vacuum or sweep up the spilled material including absorbent into a plastic container and dispose in accordance with applicable local regulations. Avoid contamination of water bodies (streams, lakes, etc.) and sewers during cleanup and disposal. Use protective clothing and gloves if skin or eye contact is possible. Wear NIOSH approved respirator and eye protection if aerosol is generated.
Spillage into water: Where possible remove containers with product from the water. Advise local water authorities of spillage.
Waste hazard classification: None of the active ingredients are listed as hazardous waste in RCRA (40 CFR 261).

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling and Storing: Keep out of the reach of children.
Do not store with food, feed, or other materials for human or animal consumption. Do not store in direct sunlight.
Keep container tightly closed. Store at temperatures between freezing and 43°C (110°F).
Other Precautions: Avoid getting the product on or in you during handling. Wash hands after handling. Do not eat, drink or smoke while handling the product (see Section 8 for details).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Not required under normal conditions. If eye or skin contact can occur, washing facility for eyes and skin should be available nearby.
Work Clothing: Not required under normal conditions. Use protective clothing to prevent repeated or prolonged skin contact.
Eye & Face Protection: Not required under normal conditions. Splash guard goggles recommended if splashing or aerosol conditions exist.
Respiratory: General ventilation is sufficient for intended use. Use NIOSH/MSHA-approved respirator if aerosol conditions exist and whenever workplace conditions warrant respirator use.
Gloves: Not required under normal conditions. Recommended for repeated or prolonged skin contact and for workers with dermatitis.
Personal Hygiene: Avoid getting the product on or in you. Wash hands after handling. Do not eat, drink or smoke while handling the product.

SECTION 9. PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Brown liquid	**Flash Point**:	Not applicable
Specific Gravity:	1.30 g/ml	**Melting Point:**	Not applicable
Odor:	Characteristic odor	**Vapor pressure**:	Not applicable
pH:	2.5 – 3.5	**Molecular Weight**:	Not applicable
Solubility in water:	Forms suspension		

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable **Hazardous Polymerization**: Will not occur.
Conditions/Materials to Avoid (Incompatibility): Avoid contact with strong alkaline materials and magnesium metal.

SECTION 11. TOXICOLOGICAL INFORMATION

Data presented below are based on the active ingredients:
Acute Oral LD_{50}: Ammonium Molybdate Tetrahydrate: 3883 mg/kg body weight in rats. Boric Acid: 2,660mg/kg body weight in rats. Cobalt Nitrate Hexahydrate: 978 mg/kg body weight in rats. Copper Sulfate Pentahydrate: 352 mg/kg of body weight. Ferrous Sulfate Monohydrate: 319 mg/kg in rat; ferrous sulfate heptahydrate in mouse 1,520 mg/kg of body weight. Manganese Sulfate Monohydrate: 9,000 mg/kg of body weight in rats. Zinc Sulfate Monohydrate: 245 mg/kg of body weight in mouse.
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Skin Sensitization: No data available.
Carcinogenicity: Cobalt nitrate hexahydrate in classified as A3 (proven for animals) by ACGIH and 2A (probable for human) by IARC.
Mutagenecity: Has not been identified.
Teratogenicity: No information available.

Acute Toxicity:
No data are available for Crop100™ product.
Chronic Toxicity:
No data are available for Crop100™ product.

Data below are based on the inert ingredient(s):
Water: Non-toxic.

SECTION 12. ENVIRONMENTAL INFORMATION

Physical/Environmental Properties :
May be harmful to aquatic life in high concentrations due to presence of micronutrients.

Ecotoxicological Data:
General: Elements present in Crop100™ are essential for healthy growth of plants and are often applied to agricultural and horticultural crops, but they can be harmful at high concentrations.
At recommended rates Crop100™ is not phytotoxic or harmful to the environment.

Toxicity to Aquatic Organisms: No data available for Crop100™.
Ecotoxicity to Terrestrial Organisms
Plant toxicity: At recommended rates Crop100™ is not phytotoxic.
Some varieties of plums are susceptible to foliar applications of nutrients. It is recommended to perform a field test before applying.

SECTION 13. DISPOSAL CONSIDERATIONS (BASED ON ACTIVE INGREDIENT)

Disposal Method: Consult local and federal guidelines for disposal regulations.
RCRA (40 CFR 261): None of the active ingredients are listed as hazardous waste.
NPRI (Canada): None of the active ingredients are listed as hazardous waste.
Empty Container: Completely empty the container into the application equipment. Rinse with water and empty the rinsate into the application equipment. Then dispose of the container in a sanitary landfill or by incarceration if allowed by local authorities.

SECTION 14. TRANSPORT INFORMATION

DOT (US): Not listed.
ICAO/IATA (Ground and Air Packages): Not listed.
International transportation: Not listed.
TDG Canadian transportation: Not listed.
NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under 49 CFR, IATA and IMDG to assure regulatory compliance.

SECTION 15. REGULATORY INFORMATION

SARA 302 Components: No chemicals in the product are subject to the reporting requirements of SARA Title III, Section 302.

Section 313 EPA Supplier Notification Requirement: This product contains the following EPCRA Section chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

CAS #	Chemical Name	Percent by Weight
NA	Cobalt Compounds	0.2
NA	Copper Compounds	2.5
NA	Manganese Compounds	3.0
NA	Zinc Compounds	5.7

SARA 311/312 Hazards: None

CERCLA: Cobalt compounds, copper compounds, manganese compounds and zinc compounds are listed.

RCRA: **Carcinogenicity**: Cobalt nitrate hexahydrate in classified as A3 (proven for animals) by ACGIH and 2A (probable for human) by IARC.

NFPA Hazard Rating (scale: 0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe):
Health – 3; Fire – 0; Reactivity – 0; Special - none

HMIS Codes (scale: 0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe):
Flammability (red) – 0; Reactivity (yellow) – 0; Health (blue) – 3

SECTION 16. OTHER INFORMATION

DISCLAIMER: The information contained herein is based upon data considered true and accurate. However, Cytozyme Laboratories, Inc. makes no warranties, expressed or implied, as to the accuracy or adequacy of the information contained herein or the results to be obtained from the use thereof. This information is offered solely for the user's consideration, investigation and verification. Since the use and conditions of use of this information and the material described herein are not within the control of Cytozyme Laboratories, Inc. Cytozyme Laboratories, Inc. assumes no responsibility for injury to the user or third persons. The material described herein is sold only pursuant to Cytozyme Laboratories, Inc. Terms and Conditions of Sale, information is in accordance with applicable federal, state or local laws and regulations.

Date Prepared: August 1, 2000
Date Revised: November 10, 2014
Revision Number 1