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## GROWING SOLUTIONS MATERIAL SAFETY DATA SHEET

### A. CHEMICAL PRODUCT & MANUFACTURERS NAME

**Product Name:** pHirst Water Amendment

**Trade Names/Synonyms:** MCDS (monocarbamide dihydrogensulfate).

**Chemical Family:** Molecular addition compound.

**Shipping Name:** Urea Sulfuric Acid Water Amendment

**Manufacturer:** Growing Solutions, Inc | P.O. Box 1059 New Lenox, IL 60451

### EMERGENCY INFORMATION

**Telephone Numbers Operated 24 Hours:**

**For Health Emergencies: For Chemical Emergencies:**

**California Poison Spill, Leak, Fire or Accident**

**Control System CHEMTREC**

**Continental US:** 800.356.3129 **Continental US:** 800.424.9300

**Outside of US:** 415.821.5338 **Outside US:** 703.527.3887

**Health Hazards Data: DANGER.** May cause severe eye burns. Causes severe skin irritation. Harmful if inhaled. Harmful or fatal if swallowed. Use adequate ventilation to keep exposures below recommended limits. Keep product system and or container closed. Do not breath vapor or mist. Do not get on clothes. Wash thoroughly after handling. Always wear appropriate personal protective equipment.

**Physical Hazard Data:** Do not heat above 230° F.

**Physical Form:** Liquid

**Appearance:** Clear Blue

**Odor:** Odorless

**NFPA HAZARD CLASS:** Health: 2 (moderate)

**Flammability:** 0 (least)

**Reactivity:** 2 (moderate)

## **B. INFORMATION/COMPOSITION OF INGREDIENTS**

### **Hazardous Components % Weight Hazard Data**

monocarbamide dihydrogen 79 Not Established

sulfate - CAS # 21351-39-3

### **Toxicological Data On Ingredients of pHirst 15/49 Water Treatment:**

**Oral (LD50):** Acute: 350 mg/kg [Rat]. RTECS

**Dermal (LD50):** Acute: 2000 mg/kg [Rabbit]. RTECS

Other agencies or groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

## **C. PHYSICAL INFORMATION/DATA**

**BOILING POINT, 760 MM HG:** 230° F - 300° F

**SPECIFIC GRAVITY (H2O=1):** 1.52 Or 68° F or 12.65 lbs/gal

**PERCENT VOLATILE:** 24 wt% (H2O)

**EVAPORATION RATE:** (nBuAc=1): < 1

**VAPOR DENSITY (AIR=1):** 0.6 H2O, > 1 Aerosol

**APPEARANCE AND ODOR:** Clear odorless liquid

**SOLUBILITY IN H2O:** 100%

**EVAPORATION RATE:** Slower than ether

**pH:** less than 1

## **D. HAZARDS IDENTIFICATION**

### **POTENTIAL HEALTH EFFECTS:**

**Eye:** Corrosive. Contact may cause severe irritation, eye burns, and permanent eye damage.

**Skin:** Severe skin irritant. While skin contact does not normally result in immediate irritation, prolonged or repeated contact may result in redness, swelling, burns, and severe skin damage. No harmful effects from skin absorption have been reported.

**Inhalation (Breathing):** Corrosive and toxic. May be harmful if inhaled. May cause severe irritation

and burns of the nose, throat, and respiratory tract.

**Ingestion (Swallowing):** Corrosive and toxic. Harmful if swallowed. May cause severe irritation and burns of the mouth, throat, and digestive tract.

**Signs and Symptoms:** Effects of overexposure may include severe irritation and burns of the mouth, nose, throat, respiratory and digestive tract, irritation of the nose and throat, headaches, coughing, nausea, vomiting, and transient disorientation.

**Cancer:** Inadequate data available to evaluate the cancer hazard of this material.

**Target Organs:** No data available.

**Developmental:** Inadequate data available for this material.

**Pre-Existing Medical Conditions:** Conditions aggravated by exposure may include skin and respiratory (asthma-like) disorders.

## **E. EMERGENCY AND FIRST AID MEASURES**

**Eye Contact:** Check for and remove any contact lenses. Immediately move victim away from exposure and into fresh air. Immediately flush eyes with clean water and seek immediate medical attention. For direct contact, immediately hold eyelids apart and flush the affected eye (s) with clean water for at least 30 minutes. Seek immediate medical attention.

**Skin Contact:** Immediately remove contaminated shoes, clothing and constrictive jewelry and flush affected area(s) with large amount of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse the affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

**Inhalation (Breathing):** Immediately move victim away from exposure and into fresh air. If respiratory symptoms and other symptoms persist, seek immediately medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** DO NOT INDUCE VOMITING. Corrosive material. ACID BURNS. If victim has any breathing difficulties, call for emergency help immediately. If victim is conscious and alert, immediately rinse mouth with water and dilute the ingested material by giving one glass of milk or water to drink; or poison center. If possible, do not leave victim unattended.

**Note to Physicians:** This material is corrosive and may cause acid burns, including gastroesophageal perforation. Late complications of severe acid burns include esophageal, gastric, or pyloric strictures and stenosis.

## F. TOXICOLOGICAL INFORMATION

**Significant Routes of Exposure:** Skin contact. Inhalation.

**Toxicity To Animals:** May be harmful to fish, livestock, and wildlife. Dissolved mineral salts may cause irritation of the digestive tract. Non-persistent. Non-cumulative when applied using normal agricultural practices. The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use.

**Aquatic/Marine Toxicity:** A toxic hazard to fish. Avoid spills or release to watercourses. Highly soluble. Will disperse with current. Release to watercourses may cause effects down stream from the point of release. U.S. D.O.T.: This material is **NOT** listed as a Marine pollutant.

## G. FIRE FIGHTING AND EXPLOSION INFORMATION

**Flash Point:** None to boiling

**OSHA Flammability Class:** Not applicable

**LEL/UEL:** No data

**Autoignition Temperature:** No data

**Unusual Fire & Explosion Hazards:** This material will vigorously decompose, releasing carbon dioxide, if heated above 230° F - 300° F. Closed containers exposed to extreme heat can rupture due to pressure buildup. Contact with common metals can generate hydrogen, which can form flammable mixture with air.

**Extinguishing Media:** Use extinguishing agent suitable for type of surrounding fire.

**Special Fire Fighting Procedures:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant. Isolate immediate hazard

area and keep unauthorized personnel out. Water spray may be useful in minimizing vapors and cooling containers exposed to heat and flame. Consider initial evacuation for 1/2 mile in all directions.

## H. ACCIDENTAL RELEASE OR SPILL PROCEDURES

Isolate spill area and restrict entry. Stay upwind and away from spill. Notify persons downwind of release/spill. Wear appropriate personal protective equipment including respiratory protection as conditions warrant. Dike spilled material and recover free standing product. Stop release/spill if it can be done with minimal risk. Dilute any remaining pools of liquid 3 to 1 with water and then neutralize with sodium bicarbonate, or powdered limestone, or sodium carbonate (soda ash). Do not attempt to neutralize without first diluting with water. Dispose of product in accordance with local, county, state and federal regulations.

## I. STABILITY AND REACTIVITY

**Chemical Stability:** This material is stable under normal conditions of storage and handling. Stable up to 230° F. This material is acidic in nature. It can react with common metals generating hydrogen gas.

**Conditions To Avoid:** Material will vigorously decompose, releasing carbon dioxide gas, if heated above 230° F - 300° F.

**Incompatible Materials:** This material may be extremely hazardous in contact with chlorates or nitrates. Avoid contact with oxidizing agents. Avoid contact with hypochlorites, (chlorine), sulfides, or cyanide which will generate toxic gases. Contact with alkaline materials, like aqua ammonia, will generate heat. This material, especially in a diluted form, is corrosive to common metals.

**Hazardous Decomposition Products:** If involved in a fire, oxides of carbon, sulfur, and nitrogen may be generated. Exposure to heat may liberate carbon dioxide. Small amounts of carbon dioxide are released from this material under normal storage condition.

## J. PROTECTIVE EQUIPMENT / EXPOSURE CONTROLS

### Personal Protective Equipment (PPE):

**Respiratory:** A NIOSH/MSHA approved air purifying respirator with a N95 filter may be used under conditions where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHAs 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirators use.

**Skin:** Gloves worn should be impermeable to the specific material being handled and it is recommended to prevent skin contact and possible irritation, absorption, and skin damage. Depending upon conditions of use, an apron and or arm covers may be necessary.

**Eye/Face:** The use of a face shield and/or chemical goggles to safeguard against potential eye contact, irritation, or injury is recommended.

**Other Protective Equipment:** An eye wash and quick drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn.

## **K. TRANSPORTATION DATA**

**DOT Proper Shipping/Technical Name:** Corrosive Liquid, N.O.S. (monocarbamide dihydrogensulfate)

**DOT Hazard Class or Division:** 8

**DOT ID Number (UN/NA):** UN1760

**Packaging:** III

**Placard Requirement:** None

**Note:** DOT Corrosive to aluminum. Not regulated if transported by motor vehicle or railcar in packaging that will not react dangerously or be degraded by this material 49 CFR 173.154(D).

## **L. REGULATORY INFORMATION**

**SARA 313 and 40 CFR 372:** Not subject to reporting requirements. Has not been identified as a carcinogen by NTP, IARC, or OSHA.

**EPA (CERCLA) Reportable Quantity:** No reportable quantity has been established. However, since spilled material may release sulfuric acid in contact with water, an effective RQ of 2040 pounds (161 gallons) (calculated on the potential to generate 1000 pound RQ for Sulfuric Acid) should be applied in the event of a release or spill.

**Other Classifications:** HCS (U.S.A.) HCS Class: Corrosive liquid.

**DSCL (EEC) R35 Causes severe burns. Corrosive.**

## **M. DISCLAIMER OF EXPRESS AND IMPLIED WARRANTIES**

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Issued 10.06