

635 SOUTH ELMWOOD AVENUE  
P.O. BOX 4076  
DAVENPORT, IOWA 52808  
EMERGENCY PHONE 563-324-3381

## Material Safety Data Sheet

Effective date: 5/18/2009    Printed date: 5/18/2009  
Revision: 2

**NFPA: Health 1, Fire 0, Reactivity 0**

Page 1 of 6

### 1. INGREDIENTS:

**CHEMICAL NAME:**

Calcium Chloride  
Urea  
Potassium Chloride  
Colorant  
Acceleration Agent

**CAS#:**

010043-52-4  
000057-13-6  
7447-40-7  
N/A  
N/A

WinterGreen® is covered under the following U.S. patents: # 5,683,619; 5,683,619 and 6,036,890

### 2. HEALTH HAZARD DATA:

- EYES:** For solid: May causes light eye irritation. Mechanical injury only. Dust formation should be avoided, as dust can cause severe eye irritation with corneal injury.
- SKIN CONTACT:** Brief contact is essentially nonirritating to the skin. Prolonged contact may cause skin irritation, even a burn. Not classified as corrosive to the skin according to DOT guidelines. May cause more severe response if skin is damp or abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves).
- SKIN ABSORPTION:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.
- INGESTION:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.
- INHALATION:** Dust may cause irritation to upper respiratory tract, nose and throat.
- REPEATED EXPOSURE:** For the minor components: Potassium Chloride. In animals, effects have been reported on the following organs after ingestion: Gastrointestinal tract, Heart, Kidney. Dose levels producing these effects were many times higher than any dose levels expected from normal product use. Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

### 3. FIRST AID:

- EYES:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. May cause injury due to mechanical action.
- SKIN:** Wash off with cold flowing water or shower.
- INGESTION:** Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility.
- INHALATION:** Remove to fresh air if effects occur. Consult medical personnel.

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Page 2 of 6

NOTE TO PHYSICIAN: Due to irritant properties, swallowing many results in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 4. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: N/A  
FLAMMABLE LIMITS: N/A  
EXTINGUISHING MEDIA: Product does not burn.  
FIRE & EXPLOSION HAZARDS: Under fire conditions some components of this product may decompose and produce unidentified toxic and/or irritating compounds. This may include but is not limited to: Nitrogen oxides, ammonia.  
  
FIRE-FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing. Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus and fight fire from a remote location.

### 5. ACCIDENTAL RELEASE MEASURES:

See section 14 for Regulatory & Shipping Information.

PROTECT PEOPLE: Isolate area. Avoid contact with eyes and skin. May be a slipping hazard. Stop any leakage if it can be done safely. Wash exposed body areas thoroughly after handling. For appropriate safety equipment see section 7 below.

#### PROTECTING THE ENVIRONMENT:

SMALL SPILLS: Incorrect application of this product from its intended uses is not expected to be harmful to the environment.  
CLEAN UP: Contain spill if possible. Collect material in a suitable and properly labeled container and flush area with plenty of water.  
LARGE SPILLS: Avoid contamination of drinking water, natural water ways, or ground water supply. Incorrect application of this product from its intended use is not expected to be harmful to the environment.  
CLEAN UP: Dike spill and transfer to suitable and properly labeled containers. Flush residue with plenty of water.

### 6. SAFE HANDLING AND STORAGE PRECAUTIONS:

HANDLING: Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving. (temperature less than 80°F, 27°C)  
  
Refer to Exposure Controls/Personal Protection, Section 7 of this MSDS.

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**NFPA: Health 1, Fire 0, Reactivity 0**  
STORAGE:

Page 3 of 6

Keep containers tightly closed when not in use. Store in a dry place. Protect from atmospheric moisture.

### 7. EXPOSURE CONTROLS/PERSONAL PROTECTION:

VENTILATION:	Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
RESPIRATORY PROTECTION:	Atmospheric levels should be maintained below the exposure guidelines. If respiratory protection is required, use an approved air purifying respirator.
EXPOSURE GUIDELINES:	
Urea:	AIHA WEEL is 10mg/m3
Calcium chloride:	Dow IHG is 10mg/m3
PROTECTIVE CLOTHING:	Use protective clothing imperious to this material. Selection of specific items such as face shield, gloves, boots, apron or full body suit will depend on operations. Remove contaminated clothing immediately, wash skin area with soap and running cold water. Launder any contaminated clothing before reuse.
EYE PROTECTION:	Wear a face shield, safety glasses or chemical goggles.

### 8. PHYSICAL DATA:

MELTING POINT:	Approx. 446°F, 230°C
BOILING POINT:	388°F, 198°C
VAPOR PRESSURE	0.009mmHg @ 20°C
VAPOR DENSITY	N/A
SPECIFIC GRAVITY	2.2
SOLUBILITY IN WATER	Very Soluble
EVAPORATION RATE	N/A
APPEARANCE	Blend of light green and white to off white, solid pellets
ODOR	Odorless
HYGROSCOPIC	Yes

### 9. STABILITY & REACTIVITY DATA:

PRODUCT STABILITY:	Thermally stable at typically used temperatures. Hygroscopic.
CHEMICAL INCOMPATIBILITY:	Corrosive when wet. Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with Sulfuric Acid, Zinc, and Sodium. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromate.

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**NFPA: Health 1, Fire 0, Reactivity 0**

Page 4 of 6

HAZARDOUS DECOMPOSITION PRODUCTS:    Hazardous decomposition depends upon temperature, air supply and the presence of other materials.

HAZARDOUS POLYMERIZATION:    Will not occur.

CONDITIONS TO AVOID:    Some components of this product can decompose at elevated temperatures. Flammable hydrogen may be generated when contact is made with elements such as zinc or sodium. Avoid moisture.

CORROSIVE TO METAL:    Avoid contact with metals such as aluminum, brass, ferrous metals, and mild steel.

### 10. TOXICOLOGICAL PROPERTIES

See section 2 for potential health effects. For detailed toxicological data, call the number shown in header.

SKIN:    The dermal LD50, Rabbit >5,000 mg/kg.

INGESTION:    The LD50, Rat 918-1,668 mg/kg.

MUTAGENICITY:    For calcium chloride in-vitro studies, the mutagenesis studies were negative. For urea in-vitro studies, mutageneses were negative in some cases and positive in others.

### 11. ECOLOGICAL INFORMATION

#### CHEMICAL FATE

Data for Component: CALCIUM CHLORIDE  
MOVEMENT & PARTITIONING

No bio concentration is expected because of the relatively high water solubility. Partitioning from water to n-octanol is not applicable

PRESISTENCE & DEGRADABILITY

Biodegradation is not applicable.

Data for Component: UREA  
MOVEMENT & PARTITIONING

No bio concentration is expected because of the relatively high water solubility. Partitioning from water to n-octanol is not applicable.

PRESISTENCE & DEGRADABILITY

Biodegradation is not applicable.

#### ECOTOXICITY

Data for Component: CALCIUM CHORIDE

Material is practically non-toxic to aquatic organisms on a acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity  
LC50, bluegill (*Lepomis macrochirus*): 8,350 – 10,650 mg/L

Aquatic Invertebrate Acute Toxicity  
LC50, water flea (*daphnia magna*): 759 – 3005 mg/L

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Page 5 of 6

Toxicity to Micro-organisms  
EC50; activated sludge, respiration inhibition: >1,000 mg/L

Data for Component: UREA  
Not Available

## 12. ENVIRONMENTAL AND DISPOSAL INFORMATION: (See Section 14 for Regulatory Information)

### DISPOSAL:

**DO NOT DUMP** into any sewer systems, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

*Ossian, Inc. has no control over the management practices or processes of parties handling or using this material. The information presented here pertains only to the product as shipped in its intended condition as described in MSDS section 1.*

### FOR UNUSED & UNCONTAMINATED PRODUCT:

Send to a licensed and/or permitted: re claim, landfill, or waste water treatment facility.

## 13. TRANSPORT INFORMATION:

### UNITED STATES DOT INFORMATION:

This product is not regulated by D.O.T. when shipped domestically by land.

### CANADIAN INFORMATION:

The components of this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

## 14. REGULATORY & SHIPPING DATA: (Not meant to be all-inclusive- selected regulations represented)

D.O.T. PROPER SHIPPING NAME:	N/A
HAZARDOUS SUBSTANCE 49CFR CERCLA:	N/A
D.O.T. HAZARD CLASS	N/A
D.O.T. LABELS REQUIRED	N/A
D.O.T. PLACARDS REQUIRED	N/A

### U.S. REGULATIONS

OSHA HAZARD: This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

### TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory requirements under 40 CFR 720.30. See section 1.

### STATE RIGHT-TO-KNOW:

This product is not known to contain any substances subject to the disclosure requirements of: New Jersey, Pennsylvania

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Page 6 of 6

### OSHA HAZARD COMMUNICATION STANDARD:

This product is NOT a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

### COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):

To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

### CANADIAN REGULATIONS

#### WHMIS INFORMATION:

The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

**D2B** – eye or skin irritant (See sections 2 & 3) Refer to employer's workplace education program.

#### CPR STATEMENT:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

#### HAZARDOUS PRODUCTS ACT INFORMATION:

This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14)

<u>COMPONENTS:</u>	<u>CAS#</u>	<u>AMOUNT (%w/w)</u>
Calcium Chloride	010043-52-4	83-87%

### **15. SUPPLIER INFORMATION:**

Ossian, Inc. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Ossian makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Ossian's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.