



# Safety Data Sheet

Product Name: **FROG® Serene™ Mineral Cartridge**  
Revision Date: **March 15, 2018** Revision: **0**  
Supersedes: **New SDS**

## 1. Identification

Product Identifier: FROG® Serene™ Mineral Cartridge  
Other Means of Identification: Calcium carbonate with silver chloride  
Recommended Use: Spa water conditioner  
Supplier: King Technology, Inc  
530 11<sup>th</sup> Ave S, Hopkins, MN 55343, USA  
Phone (952) 933-6118  
EPA Registration Number: 53735-11  
Emergency Telephone: Chemtrec (800) 424-9300

## 2. Hazards Identification

GHS Classification: Not classified  
GHS Label Elements:  
– Signal Word: None  
– Pictograms: None  
– Hazard Statements: None  
– Precautionary Statements: None  
Unclassified Hazards: None  
Percentage of Ingredients with Unknown Toxicity: Zero

## 3. Composition / Information on Ingredients

Components CAS	Weight %	ACGIH-TLV Data	OSHA (PEL) Data
Silver chloride 7783-90-6	< 1%	N/A	N/A
Calcium carbonate 471-34-1	>98%	10mg/m3	15mg/m3

The specific percentages of composition have been withheld as trade secrets.

## 4. First-aid Measures

Eye contact: Hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If irritation occurs, call a doctor for treatment advice.  
Skin contact: Flush thoroughly with water.



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**Inhalation:** Move person to fresh air. If irritation occurs, call a doctor for treatment advice.

**Ingestion:** Ingestion of significant amounts is unlikely. If irritation occurs, call a doctor for treatment advice.

**Most Important Symptoms, Acute and Delayed:** No known symptoms.

**Immediate Medical Attention Required:** None required.

### 5. Fire-fighting Measures

**Suitable Extinguishing Media:** There are no unusual fire or explosion hazards with this material. This material is stable, non-hazardous.

**Unsuitable Extinguishing Media:** None known.

**Special Protective Equipment and Precautions for Fire-fighters:** There are no unusual fire or explosion hazards with this material. This material is stable, non-hazardous.

**Specific Hazards Arising From the Chemical:** None known.

### 6. Accidental Release Measures

**Personal Precautions:** Using appropriate equipment, contain spilled material.

**Methods for Cleaning Up:** Product is a non-hazardous solid. Sweep up material and dispose of as normal household waste.

### 7. Handling and Storage

**Handling:** Product is non-hazardous. There are no specific handling requirements.

**Storage:** Keep this product in original closed container when not in use. Store in cool, dry, well ventilated area away from open flame.

### 8. Exposure Controls / Personal Protection

**Exposure Limits:** See Section 3.

**Appropriate Engineering Controls:** None required.

**Personal protective equipment:**  
– Respiratory protection: None required.

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<b>– Hand protection:</b>	None required.
<b>– Eye protection:</b>	None required.
<b>– Skin and body protection:</b>	None required.
<b>Hygiene measures:</b>	None required.
<b>Other Precautions:</b>	None required.

### 9. Physical and Chemical Properties

<b>Appearance:</b>	White granular material
<b>Odor:</b>	Not available
<b>Odor threshold:</b>	Not available
<b>Melting point / range:</b>	Not available
<b>Boiling point / range:</b>	Not available
<b>Flash point:</b>	Not available
<b>Evaporation rate:</b>	Not available
<b>Flammability:</b>	Not available
<b>Vapor pressure:</b>	Not available
<b>Vapor density:</b>	Not available
<b>Bulk density:</b>	Not available
<b>Solubility in water:</b>	Not available
<b>Specific gravity:</b>	Not available
<b>pH:</b>	Not available
<b>Flammability limits:</b>	Not available
<b>Partition coefficient:</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	Not available

### 10. Stability and Reactivity

<b>Reactivity:</b>	Not reactive under normal conditions.
<b>Stability:</b>	This product is stable under normal conditions
<b>Incompatible materials:</b>	None known.
<b>Conditions to avoid:</b>	None known.
<b>Hazardous decomposition products:</b>	None known.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization will not occur under normal conditions.



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### 11. Toxicological Information

**Acute toxicity:** No data available  
**Carcinogenicity:** This product is not listed as a carcinogen by IARC.  
This product is not listed as a carcinogen by NTP.  
This product is not listed as a carcinogen by OSHA

### 12. Ecological Information

No data available

### 13. Disposal Considerations

**Waste disposal:** Product is a non-hazardous solid. Sweep up material and dispose of as normal household waste.

### 14. Transportation Information

Not applicable

### 15. Regulatory Information

**EPA FIFRA Information:** This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

### 16. Other Information

Date of preparation: March 15, 2018

This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State, or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.

**Prepared by:** King Technology, Inc.  
530 11<sup>th</sup> Ave S  
Hopkins, MN 55343 USA  
Phone (952) 933-6118

End of safety data sheet

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## 1. Identification

**Product Identifier:** FROG® Serene™ Bromine Cartridge

**Other Means of Identification:** 1-bromo-3-chloro-5,5-dimethylhydantion; BCDMH; Halogenated hydantoin

**Recommended Use:** Spa and hot tub sanitizer

**Supplier:** King Technology, Inc.  
530 11<sup>th</sup> Ave S, Hopkins, MN USA  
Phone (952) 933-6118

**EPA Registration Number:** 53735-16

**Emergency Telephone:** Chemtrec (800) 424-9300

## 2. Hazards identification

**GHS Classification:** Eye Damage: Category 1  
Skin Irritation: Category 1  
Oxidizing Solids: Category 2  
Specific Target Organ Toxicity (Single Exposure): Category 3  
Acute Toxicity (Inhalation): Category 4  
Acute Toxicity (Oral): Category 4  
Acute Toxicity (Dermal): Category 4

**GHS Label Elements:**

– **Signal Word:** DANGER

– **Pictograms:**



– **Hazard Statements:** Causes severe skin burns and eye damage  
May intensify fire; oxidizer  
May cause respiratory irritation  
Harmful if inhaled  
Harmful if swallowed  
Harmful in contact with skin

– **Precautionary Statements:** Keep away from heat.  
Keep away from clothing or other combustible materials.  
Take any precaution to avoid mixing with combustibles.  
In case of fire: Use large amounts of water to extinguish.  
Do not breathe dusts or mists.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, and eye and face protection.  
Wash exposed areas thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
In in eyes: Rinse cautiously with water for several minutes. Remove contact

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lenses, if present and easy to do. Continue rinsing.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 If swallowed: Rinse mouth. Do NOT induce vomiting.  
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
 Immediately call a poison center or doctor.  
 Specific treatment (see First-aid Measures on this safety data sheet).  
 Take off contaminated clothing and wash it before reuse.  
 Store locked up in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents and container in accordance with local/regional/national/international regulations.

**Unclassified Hazards:** None

**Percentage of Ingredients with Unknown Toxicity:** Zero

### 3. Composition / Information on Ingredients

Components CAS	Weight %	ACGIH-TLV Data	OSHA (PEL) Data
1-bromo-3-chloro-5,5-dimethylhydantion 16079-88-2	98	NE	NE

### 4. First-aid Measures

**Eye contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing the eye. Immediately call a poison control center or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Immediately call a doctor for treatment advice.

**Inhalation:** Move person to fresh air. If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if breathing is difficult, give oxygen. Immediately call a poison control center or doctor for further treatment advice.

**Ingestion:** Call poison control center or doctor immediately for treatment advice. Drink plenty of water in small gulps. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**Most Important Symptoms, Acute and Delayed:** Causes severe skin burns and eye damage. May cause respiratory irritation. Harmful if inhaled, swallowed, or in contact with skin.

**Immediate Medical Attention Required:** If in eyes, immediately call a poison center or doctor. Otherwise, get medical attention if you feel unwell.

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## 5. Fire-fighting Measures

- General hazard:** In large fires fueled by other materials, this product may smolder for prolonged periods emitting a dense black smoke. Any spilled material should be considered contaminated. Neutralize to a non-oxidizing material for safe disposal. Material which appears undamaged except for being damp on the outside should be opened and inspected immediately. If the material is damp, it should be neutralized to a non-oxidizing material for safe disposal.
- Suitable Extinguishing Media:** In case of fire or smoke, call the fire department. Do not attempt to extinguish the fire without a self-contained breathing apparatus (SCBA). Do not let the fire burn. Flood with copious amounts of water.
- Unsuitable Extinguishing Media:** DO NOT use ABC or other dry chemical extinguishers since there is the potential for a violent reaction.
- Special Protective Equipment and Precautions for Fire-fighters:** Fires fueled by other materials may release hydrogen bromide, bromine, hydrogen chloride or chlorine. Wear self-contained breathing apparatus. Ammonium phosphate (ABC) fire extinguishers should not be used.
- Specific Hazards Arising From the Chemical:** A dust explosion severity determination was performed using the Hartmann Dust Explosibility Bomb designed at the U.S. Bureau of Mines. The product was determined not to be ignitable.

## 6. Accidental Release Measures

- Personal Precautions:** Using appropriate protective clothing and safety equipment, contain spilled material.
- Methods for Cleaning Up:** Do not add water to spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry containers for disposal. Do not use floor sweeping compounds to clean up spills. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form. Do not transport wet or damp material. Keep product out of sewers, watersheds and water systems. Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment. Dispose of according to local, state and federal regulations.

## 7. Handling and Storage

- Handling:** STRONG OXIDIZING AGENT: Do not mix with other chemicals. Mix only with water. Never add water to product. Always add product to large quantities of water. Use clean dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter or other chemicals will start a chemical reaction and generate heat, hazardous gas, possible fire and explosion. In case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. Flood area with large volumes of water.

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**Storage:** Keep this product in original closed container when not in use. Store in a cool, dry, well ventilated area away from heat or open flame. Do not contaminate water, food or feed by storage or disposal or cleaning of equipment. Do not store above 125 F (52 C).

### 8. Exposure Controls / Personal Protection

**Exposure Limits:** None assigned

**Appropriate Engineering Controls:** General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

**Personal protective equipment:**

- **Respiratory protection:** A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
- **Hand protection:** Wear rubber gloves when handling this product. Avoid contact with skin.
- **Eye protection:** Wear goggles or safety glasses with side shields when handling this product.
- **Skin and body protection:** Wear rubber gloves when handling this product. Avoid contact with skin.

**Hygiene measures:** Remove and wash contaminated clothing before reuse.

**Other Precautions:** Facilities using or storing this material should be equipped with an eyewash and safety shower.

### 9. Physical and Chemical Properties

**Appearance:** White granules  
**Odor:** Faint halogen odor  
**Odor threshold:** Not available  
**Melting point / range:** Not available  
**Boiling point / range:** Not available  
**Flash point:** Not available  
**Evaporation rate:** Not available  
**Flammability:** Not available  
**Vapor pressure:** Not available  
**Vapor density:** Not available  
**Bulk density:** 54 lb/ft<sup>3</sup> (granular form approx, 0.9 g/mL, test method ASTM B527)  
**Solubility in water:** 0.15g/100g water  
**Specific gravity:** Not available  
**pH:** 4.5 (0.1% solution in DI water)  
**Flammability limits:** Not available  
**Partition coefficient:** Not available  
**Auto-ignition temperature:** Not available  
**Decomposition temperature:** Not available  
**Viscosity:** Not available



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## 10. Stability and Reactivity

**Reactivity:** Not reactive under normal conditions.

**Stability:** This product is stable under normal conditions

**Incompatible materials:** Avoid contact with water on concentrated material in the container. Avoid contact with easily oxidizable material; ammonia, urea, or similar nitrogen containing compounds; inorganic reducing compounds; floor sweeping compounds; calcium hypochlorite; other swimming pool/spa chemicals in their concentrated form; alkalis. Avoid contact with all other chemicals.

**Conditions to avoid:** High temperature. Poor ventilation. Contamination. Moisture / high humidity.

**Hazardous decomposition products:** Hydrogen bromide, bromine, hydrogen chloride, chlorine.

**Possibility of hazardous reactions:** Hazardous polymerization will not occur under normal conditions.

## 11. Toxicological Information

**Acute toxicity:**

- Rat oral LD50: 578 mg/kg
- Rabbit dermal LD50: The dermal LD50 is greater than 2.0 g/kg. The primary skin irritation index is 6.1 and the product is considered corrosive to skin
- Eye irritation (rabbit): Toxicological studies indicate this product to be corrosive to eyes.

**Carcinogenicity:** This product is not listed as a carcinogen by IARC.  
This product is not listed as a carcinogen by NTP.  
This product is not listed as a carcinogen by OSHA

## 12. Ecological Information

**Ecotoxicological Information:** This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or their waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

## 13. Disposal Considerations

**Waste disposal:** Use or reuse if possible. Pesticide wastes are toxic. Improper disposal of excess pesticide or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, Contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Do not contaminate water, food, or feed by storage or disposal or cleaning of

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equipment. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire. The user of the material has the responsibility to dispose of unused material, residues, and containers in compliance with all relevant local, state, and federal laws and regulations regarding treatment, storage, and disposal of hazardous waste.

**Empty container:** Do not reuse container. Rinse thoroughly before discarding in trash.

#### 14. Transportation Information

**DOT:**

- **Proper shipping name:** Oxidizing Solid, N.O.S. (Bromo-chloro-dimethylhydantoin)
- **Primary hazard class:** 5.1
- **UN/NA Number:** 1479
- **Packing group** II

#### 15. Regulatory Information

**EPA FIFRA Information:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**DANGER**

Highly corrosive. Causes skin and eye damage. May be fatal if swallowed. Do not get in eyes, on skin or on clothing. Wear goggles or safety glasses and rubber gloves when handling product. Irritating to nose and throat. Avoid breathing dust and fumes. Remove and wash contaminated clothing before reuse.

**USA:**

- **Sara (311, 312) hazard class:** This product or its components are not listed.
- **CERCLA:** This product or its components are not listed.
- **TSCA Regulatory:** This product or its components are not subject to export notification.
- **TSCA Status:** This product or its components are listed on the TSCA Inventory.
- **OSHA Hazard Comm. Rule:** Product is hazardous by definition of the Hazardous Communication Standard.
- **Clean Water Act:** Not listed
- **FIFRA:** This product is a registered pesticide.
- **SDWA:** Not listed
- **Clean Air Act:** 40 CFR Part 68 – Not listed

**State Regulations:**

Proposition 65 statement: This product or its components are not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

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**16. Other information**

Date of preparation: March 15, 2018

Factors pertaining to certain conditions of storage, handling, and/or use of this product may involve other or additional safety considerations. This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.

**Prepared by:** King Technology, Inc.  
530 11<sup>th</sup> Ave S  
Hopkins, MN 55343 USA  
Phone (952) 933-6118

**End of safety data sheet**

**Product Name:** FROG® Jump Start  
**Revision Date:** October 1, 2016  
**Supersedes:** Rev 2, 05/20/2015

**Revision:** 3

**1. Identification**

**Product Identifier:** FROG® Jump Start

**Other Means of Identification:** Sodium dichloroisocyanurate ; NaDCCA Dichlor; Sodium dichloro-s-triazinetrione; Chloroisocyanurate

**Recommended Use:** Swimming pools, spas, hot tubs disinfectant; spa and hot tub shock

**Supplier:** King Technology, Inc  
530 11<sup>th</sup> Ave S, Hopkins, MN 55343, USA  
Phone (952) 933-6118

**EPA Registration Number:** 53735-12

**Emergency Telephone:** Chemtrec (800) 424-9300

**2. Hazards Identification**

**GHS Classification:** Eye Damage: Category 1  
Skin Irritation: Category 2  
Oxidizing Solids: Category 2  
Specific Target Organ Toxicity (Single Exposure): Category 3  
Acute Toxicity (Inhalation): Category 4  
Acute Toxicity (Oral): Category 4  
Acute Toxicity (Dermal): Category 4

**GHS Label Elements:**

– **Signal Word:** DANGER

– **Pictograms:**



– **Hazard Statements:** Causes serious eye damage  
Causes skin irritation  
May intensify fire; oxidizer  
May cause respiratory irritation  
Harmful if inhaled  
Harmful if swallowed  
Harmful in contact with skin

– **Precautionary Statements:** Keep away from heat.  
Keep away from clothing or other combustible materials.  
Take any precaution to avoid mixing with combustibles.  
In case of fire: Use large amounts of water to extinguish.  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves, protective clothing, and eye and face protection.  
Wash exposed areas thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
In in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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Immediately call a poison center or doctor.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 Call a poison center or doctor if you feel unwell.  
 If swallowed: Call a poison center or doctor if you feel unwell.  
 Rinse mouth.  
 If on skin: Wash with plenty of water.  
 If skin irritation occurs: Get medical attention.  
 Call a poison center or doctor if you feel unwell.  
 Specific treatment (see First-aid Measures on this safety data sheet).  
 Take off contaminated clothing and wash it before reuse.  
 Store locked up in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents and container in accordance with local/regional/national/international regulations.

**Unclassified Hazards:** None

**Percentage of Ingredients with Unknown Toxicity:** Zero

### 3. Composition / Information on Ingredients

Components CAS	Weight %	ACGIH-TLV Data	OSHA (PEL) Data
Sodium dichloroisocyanurate 2893-78-9	33.3	Not Established	Not Established
Citric acid 77-92-9	35.5	10 mg/m3 total dust	15 mg/m3 total dust
Inerts	31.2		

The specific chemical identities have been withheld as trade secrets.

### 4. First-aid Measures

**Eye contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing the eye. Immediately call a poison control center or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation persists, call a doctor for treatment advice.

**Inhalation:** Move person to fresh air. If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if breathing is difficult, give oxygen. Call a poison control center or doctor for further treatment advice.

**Ingestion:** Call poison control center or doctor immediately for treatment advice. Drink plenty of water in small gulps. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**Most Important Symptoms, Acute and Delayed:** Causes serious eye damage. Causes skin irritation. May cause respiratory irritation. Harmful if inhaled, swallowed, or in contact with skin.

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**Immediate Medical Attention Required:** If in eyes, immediately call a poison center or doctor. Otherwise, get medical attention if you feel unwell.

#### 5. Fire-fighting Measures

**Flash point:** Not applicable

**Auto-ignition temperature:** Not applicable

**Suitable Extinguishing Media:** Extinguish with large amounts of water.

**Unsuitable Extinguishing Media:** For safety reasons DO NOT use dry chemical extinguisher containing ammonia compounds, dry chemicals, carbon dioxide, halogenated agents.

**Special Protective Equipment and Precautions for Fire-fighters:** As in any fire, wear self-contained breathing apparatus with pressure demand (MSHA/NIOSH approved or equivalent) and full protection clothing. Use water spray to cool fire exposed containers.

**Specific Hazards Arising From the Chemical:** When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine, and carbon monoxide.

#### 6. Accidental Release Measures

**Personal Precautions:** For small spills in well ventilated areas wear respiratory protection and wear clothing, chemical resistant gloves, chemical resistant footwear, and chemical resistant headgear for overhead exposure.

For cleanup of large spills, or small dry spills in confined areas, wear full-face respirator with chlorine cartridges or a positive pressure supplied air respirator. Additionally, body protection should be impervious clothing covering the entire body to prevent personal contact with the material.

**Methods for Cleaning Up:** If spill material is still dry, do not put water directly on this product as a gas evolution may occur. Do not contaminate spill material with any organic materials, ammonia, ammonium salts, or urea. Clean up all spill material with clean, dry dedicated equipment and place in a clean dry container.

CAUTION: Do not use floor sweeping compounds.

#### 7. Handling and Storage

**Handling:** Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

**Storage:** Prevent formation of dust. Keep container tightly closed when not in use. Protect from atmospheric moisture and water. Store in a cool, dry, well-ventilated area from heat sources.

#### 8. Exposure Controls and Personal Protection

**Exposure Limits – DUST** LIMITS FOR AIR CONTAMINANTS (OSHA)  
Particulates not otherwise regulated – total dust – TWA 15 mg/m<sup>3</sup>

LIMITS FOR AIR CONTAMINANTS (OSHA)

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Particulates not otherwise regulated – Respirable fraction – TWA 5 mg/m<sup>3</sup>

LIMITS FOR AIR CONTAMINANTS (ACGIH)

Particulates (insoluble or poorly soluble) respirable particles – TWA 3 mg/m<sup>3</sup>

LIMITS FOR AIR CONTAMINANTS (ACGIH)

Particulates (insoluble or poorly soluble inhalable particles) – TWA 10 mg/m<sup>3</sup>

**Appropriate Engineering Controls:**

Set up ventilation to effectively remove and prevent buildup of any dust generated from the handling of this product.

**Personal protective equipment:**

– **Respiratory protection:**

If ventilation is not sufficient to effectively prevent build up of dust, appropriate NIOSH/OSHA respiratory protection must be provided.

– **Hand protection:**

Wear chemical resistant gloves, such as rubber, neoprene, or nitrile.

– **Eye protection:**

Use chemical safety glasses and face shield to avoid eye contact.

– **Skin and body protection:**

Prevent contact with skin & clothing by using protective garments.

**Hygiene measures:**

Flowing water source should be available. Avoid contact with skin, eyes, and clothing. Do not inhale dust. Remove soiled or soaked clothing immediately.

## 9. Physical and Chemical Properties

**Appearance:** White granular solid  
**Odor:** Chlorine like bleach  
**Odor threshold:** Not available  
**Melting point / range:** Not available  
**Boiling point / range:** Not available  
**Flash point:** Not available  
**Evaporation rate:** Not available  
**Flammability:** Not available  
**Vapor pressure:** Not available  
**Vapor density:** Granular (tap) 1.05 g/ml (pour) 0.958 g/ml  
**Solubility in water:** Not available  
**Specific gravity:** >1  
**pH:** 4.75 (25°C)  
**Flammability limits:** Not available  
**Partition coefficient:** Not available  
**Auto-ignition temperature:** Not available  
**Decomposition temperature:** Not available  
**Viscosity:** Not available

## 10. Stability and Reactivity

**Reactivity:** Not reactive under normal conditions.

**Chemical stability:** Stable under normal conditions.

**Incompatible materials:** Organic materials; combustible materials; ammonia; ammonium compounds; Alkali. Oxidizing agents; reducing agents; acids. Strong bases, alkali metals,

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metallic nitrates, oxides of sulfur and potassium tartrate.

**Conditions to avoid:** Avoid conditions that favor the formation of excessive dust. Avoid excessive heat and sources of ignition. Avoid conditions of moisture.

**Hazardous decomposition products:** Nitrogen. HCl gas. Chlorine gas. Isocyanic acid. Metal oxide. Nitrogen trichloride. Carbon oxides.

**Possibility of hazardous reactions:** Will not occur

#### 11. Toxicological Information

No information available.

#### 12. Ecological Information

**Adverse effects:** Toxic to fish and aquatic life forms. Do not dispose by drainage or into lakes, ponds or public water.

#### 13. Disposal Considerations

**Waste disposal:** Observe all federal, state, and local regulations. The responsibility for proper waste disposal is with the owner of the waste.

#### 14. Transportation Information

**US DOT:** Class: 5.1 – Oxidizing substances  
Packing Group: II  
Label: OXIDIZER (5.1)  
UN/NA number: UN2465  
Proper shipping name: Dichloroisocyanurate acid, dry, mixture

**Transport IMDG:** Class: 5.1 – Oxidizing substances  
Packing Group: II  
UN number: UN2465  
Proper shipping name: Dichloroisocyanurate acid, dry, mixture  
EmS: F-A+S-Q  
Label: OXIDIZING AGENT (5.1)  
Marine pollutant mark: Symbol “fish and tree”

**Transport ICAO/IATA:** Class: 5.1  
Packing Group: II  
UN number: UN2465  
Proper shipping name: Dichloroisocyanurate acid, dry, mixture  
Label: OXIDIZER (5.1)

#### 15. Regulatory Information

**US Federal Regulations:**

**EPA FIFRA Information:** This chemical is a pesticide product registered by the Environmental



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Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**DANGER**

Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed or absorbed through skin. May be fatal if inhaled. Do not breathe dust or vapors. Irritating to nose and throat. Do not get in eyes, on skin or on clothing. Wear goggles or face shield, protective clothing and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the restroom. Remove and wash contaminated clothing before reuse.

**–Toxic Substances Control Act (TSCA):** Hazardous Component(s) subject to reporting on the TSCA List.

**–HMIS Classification:**  
Health = 3  
Flammability = 1  
Reactivity = 0  
PPE = F

**–NFPA Rating:**  
Health = 3  
Fire Hazard = 1  
Reactivity = 0

**– WHMIS hazard class:** Hazardous Components(s) subject to WHMIS Ingredient Disclosure

## 16. Other information

Date of preparation: October 1, 2016

**Details of change from previous version:**

- Updated Corporate Logo

The information in this Safety Data Sheet should be provided to all who use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations and management, and for persons working with or handling this product. Additionally, if this Material Safety Data Sheet is more than three years old you should contact King Technology to make certain that this sheet is current.

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## Safety Data Sheet

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**End of safety data sheet**