

# SAFETY DATA SHEET

M31040 - ANSI - EN



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## Towerbrom® 60M Granules

SDS No.: M31040

Rev. Date: 20-May-2020

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### SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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<b>Company Identification:</b>	Occidental Chemical Corporation 14555 Dallas Parkway, Suite 400, Dallas, Texas 75254-4300
<b>24 Hour Emergency Telephone Number:</b>	1-800-733-3665 or 1-972-404-3228 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
<b>To Request an SDS:</b>	MSDS@oxy.com or 1-972-404-3245
<b>Customer Service:</b>	1-800-752-5151 or 1-972-404-3700
<b>Product Identifier:</b>	<b>Towerbrom® 60M Granules</b>
<b>Synonyms:</b>	Towerbrom® 60M Microbiocide; Dichlor / Sodium Bromide Blend; Dichloroisocyanuric Acid Salts, Mixture; Sodium dichloroisocyanurate; Sodium dichloro-s-triazinetriene; Dichlor; 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, sodium salt; Troclosene sodium; SDCC; NaDCC; Dichloroisocyanuric acid sodium salt
<b>Product Use:</b>	Algaecide; Disinfectant; Sanitizer; Bactericide; Fungicide; Microbiocide/Microbiostat
<b>Restrictions on Use (United States):</b>	This is a pesticide product; do not use in a pesticide application that is not approved by the EPA.
<b>Other Global Restrictions on Use:</b>	Other restrictions on use based on local, regional, or national regulations may exist and must be determined on a case-by-case basis.
<b>Chemical Family:</b>	CHLORINATED ISOCYANURATES

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**Note:** Non-pesticide version of this product is available as M31500 (GEO 60M GRANULES). Contact OxyChem Technical Service for further guidance.

## SECTION 2. HAZARDS IDENTIFICATION

**OSHA REGULATORY STATUS:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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### EMERGENCY OVERVIEW:

<b>Color:</b>	White
<b>Physical State:</b>	Solid
<b>Appearance:</b>	Crystals, Granules
<b>Odor:</b>	Slight chlorine/bromine odor

**Signal Word:** **DANGER**

**MAJOR HEALTH HAZARDS:** CORROSIVE. CAUSES SERIOUS EYE DAMAGE. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. TOXIC IF INHALED. HARMFUL IF SWALLOWED.

**PHYSICAL HAZARDS:** MAY INTENSIFY FIRE; OXIDIZER. Contact with water slowly liberates irritating and hazardous chlorine containing gases. Contamination with moisture, organic material, or other incompatible chemicals may start a reaction with generation of heat, liberation of hazardous gases, and possible fire and explosion. Contact with acids liberates toxic gas. Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes. When ignited will burn with the evolution of chlorine and equally toxic gases. Do not get water inside container. Wet material may generate nitrogen trichloride, an explosion hazard.

**AQUATIC TOXICITY:** Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:** Do not breathe dusts or mists. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves, protective clothing, eye, and face protection. Keep away from heat, sparks, open flames, hot surfaces - No smoking. Keep away from combustible materials. Take precaution to avoid mixing with combustibles, acids, ammonia, bases, floor sweeping compounds, calcium hypochlorite, reducing agents, organic solvents and compounds.

**ADDITIONAL HAZARD INFORMATION:** Do not get water inside container; damp or wet material may generate nitrogen trichloride, an explosion hazard. Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes. This material is corrosive. Use dilution. May cause burns to moist skin if not promptly removed. There is no specific antidote. Sodium bromide at high doses affects the thyroid, adrenals and testes; may be an endocrine disruptor. The NOEL for sodium bromide is 300 mg/kg diet.

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**HAZARD CLASSIFICATION:**

<b>GHS: PHYSICAL HAZARDS:</b>	Oxidizing Solid - Category 2 - May intensify fire; oxidizer
<b>GHS: CONTACT HAZARD - SKIN:</b>	Category 1C - Causes severe skin burns and eye damage
<b>GHS: CONTACT HAZARD - EYE:</b>	Category 1 - Causes serious eye damage
<b>GHS: ACUTE TOXICITY - INHALATION:</b>	Category 3 - Toxic if inhaled
<b>GHS: ACUTE TOXICITY - ORAL:</b>	Category 4 - Harmful if swallowed
<b>HAZARDS NOT OTHERWISE CLASSIFIED (HNO):</b>	- Hazardous to Aquatic Environment (Chronic Hazard): Category 1 - Very toxic to aquatic life with long lasting effects - Damp or wet material may generate nitrogen trichloride, an explosion hazard - Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes - Decomposes at temperatures above 210 °C ( 410 °F ) with liberation of harmful gases - Contact with acids liberates toxic gas - Sodium bromide at high doses affects the thyroid, adrenals and testes; may be an endocrine disruptor. The NOEL for sodium bromide is 300 mg/kg diet

**GHS SYMBOL:** Oxidizer, Corrosion, Skull and Crossbones, Environmental hazard**GHS SIGNAL WORD:** DANGER**GHS HAZARD STATEMENTS:****GHS - Physical Hazard Statement(s)**

- May intensify fire; oxidizer

**GHS - Health Hazard Statement(s) -**

- Harmful if swallowed
- Causes severe skin burns and eye damage
- Toxic if inhaled

**Additional Hazards - GHS Hazards Not Otherwise Classified (HNO):**

- CHRONIC AQUATIC HAZARD - CATEGORY 1: Very toxic to aquatic life with long lasting effects

**GHS - Precautionary Statement(s) - Prevention**

- Do not breathe dusts or mists

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- Wash skin and contaminated clothing thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment
- Wear protective gloves, protective clothing, eye, and face protection
- Keep away from heat/sparks/open flames/hot surfaces - No smoking
- Keep away from combustible materials
- Take precaution to avoid mixing with combustibles, acids, ammonia, bases, floor sweeping compounds, calcium hypochlorite, reducing agents, organic solvents and compounds

### GHS - Precautionary Statement(s) - Response

- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- IF IN EYES: Immediately call a POISON CENTER or physician
- IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower
- IF EXPOSED (skin/eye): Immediately call a POISON CENTER OR PHYSICIAN
- Specific treatment for skin or eye contact (see First Aid information on product label and/or Section 4 of the SDS)
- Wash contaminated clothing before reuse
- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
- IF INHALED call a POISON CENTER or doctor/physician
- Specific treatment if inhaled (see First Aid information on product label and/or Section 4 of the SDS)
- Collect spillage
- In case of fire: Use flooding with copious amounts of water to extinguish. Do not use ABC fire extinguishers. Do not use dry chemicals, carbon dioxide, or halogenated extinguishing agents

### GHS - Precautionary Statement(s) - Storage

- Store in a well-ventilated place. Keep container tightly closed
- Store in a secure manner

### GHS - Precautionary Statement(s) - Disposal

- Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

### Physical Hazards Not Otherwise Classified

- Damp or wet material may generate nitrogen trichloride, an explosion hazard
- Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes

### Hazard Not Otherwise Classified (HNOC)-Health

- Contact with acids liberates toxic gas
- Damp or wet material may generate hazardous and toxic gases
- Sodium bromide at high doses affects the thyroid, adrenals and testes; may be an endocrine disruptor. The NOEL for sodium bromide is 300 mg/kg diet
- Contact with water slowly liberates irritating and hazardous chlorine containing gases
- Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes
- Decomposes at temperatures above 210 °C ( 410 °F ) with liberation of harmful gases

### See Section 11: TOXICOLOGICAL INFORMATION

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS Number	Percent [%]
Dichloroisocyanuric acid, sodium salt	2893-78-9	89 - 90
Sodium bromide (NaBr)	7647-15-6	7
Water	7732-18-5	0.5 - 3
Sodium Chloride	7647-14-5	0.1 - 1.5

**SECTION 4. FIRST AID MEASURES**

**INHALATION:** IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.

**SKIN CONTACT:** IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water/shower. IF EXPOSED: Immediately call a POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse.

**EYE CONTACT:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**INGESTION:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth if ingested. Do NOT induce vomiting.

**Most Important Symptoms/Effects (Acute and Delayed):****Acute Symptoms/Effects:**

**Inhalation (Breathing):** Respiratory System Effects. Exposure to the solid product or to free chlorine evolving from the product may cause irritation, redness of upper and lower airways, coughing, laryngospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure. Please refer to Section 11 for additional information.

**Skin:** Skin Corrosion. Exposure to solid along with moisture may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns.

**Eye:** Serious Eye Damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to internal eye structures.

**Ingestion (Swallowing):** Gastrointestinal Effects. Exposure by ingestion may cause irritation, nausea, and vomiting. May cause local tissue damage to esophagus and stomach such as burning, inflammation, local ulceration, and may cause gastrointestinal bleeding.

**Delayed Symptoms/Effects:**

Repeated and prolonged skin contact may cause a dermatitis.

**Protection of First-Aiders:** Protect yourself by avoiding contact with this material. Use personal protective

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equipment. Refer to Section 8 for specific personal protective equipment recommendations. Avoid contact with skin and eyes. Do not ingest. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

**Notes to Physician:** Treat as a corrosive substance. This material is more irritating to the skin and eyes in the presence of water. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. There is no antidote. Cyanuric acid is readily removed from the body via the renal system, and is not bioaccumulated. Treatment is supportive care. Follow normal parameters for airway, breathing, and circulation.

**Interaction with Other Chemicals Which Enhance Toxicity:** Contact with acids liberates toxic gas.

**Medical Conditions Aggravated by Exposure:** May aggravate preexisting conditions such as eye disorders that decrease tear production or have reduced integrity of the eye; skin disorders that compromise the integrity of the skin; and respiratory conditions including asthma and other breathing disorders.

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## SECTION 5. FIRE-FIGHTING MEASURES

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**Fire Hazard:** According to NFPA Code 430, this material is classified as a Class 2 Oxidizer. Class 2 Oxidizers will increase the burning rate of combustible materials with which they come in contact. In addition, they may cause spontaneous ignition when in contact with a combustible material. Wet material may generate nitrogen trichloride, an explosion hazard. If heated by outside source to temperatures above > 210 °C (410 °F), this product will undergo decomposition with the evolution of noxious gases but no visible flame.

**Explosive properties:** Damp or wet material may generate nitrogen trichloride, an explosion hazard. See Section 10 for stability and reactivity precautions.

**Extinguishing Media:** Flood with copious amounts of water.

**Unsuitable Extinguishing Media:** DO NOT use ABC or other dry chemical extinguishers. There is the potential for a violent reaction if extinguishing with ABC or other dry chemical extinguishers. DO NOT USE carbon dioxide as an extinguishing agent. DO NOT USE halogenated extinguishing agents.

**Specific Hazards:** STRONG OXIDIZING AGENT.

**Unusual Hazards:** Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. Use extreme caution when inspecting damaged packaging as damp or wet material may generate nitrogen trichloride, an explosion hazard and/or other hazardous and toxic gases. Keep unnecessary and unprotected personnel from entering the area. Do not breathe dust/fume/gas/mist/vapors/spray. Wear appropriate personal protective equipment recommended in Section 8 of the SDS. Contact OxyChem for instructions for handling and disposal of damp material.

**Fire Fighting:** Consider evacuation of personnel located downwind. Keep unnecessary people away, isolate hazard area and deny entry. Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Material which appears undamaged except for being damp on the outside, should be opened and inspected immediately. DO NOT attempt to reseal contaminated drums. Damp material should be neutralized to a non-oxidizing state. Contact OxyChem for instructions for handling and disposal of damp material.

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**Hazardous Combustion Products:** Chlorine; Nitrogen; Nitrogen trichloride; Cyanogen chloride; Oxides of carbon; Phosgene

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

**Lower Flammability Level (air):** Not flammable

**Upper Flammability Level (air):** Not flammable

**Flash point:** Not applicable

**Auto-ignition Temperature:** Not determined

**GHS: PHYSICAL HAZARDS:**

- Oxidizing Solid - Category 2 - May intensify fire; oxidizer

**Physical Hazards Not Otherwise Classified**

- Damp or wet material may generate nitrogen trichloride, an explosion hazard

- Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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**Personal Precautions:** Keep unnecessary and unprotected persons away. Isolate hazard area and deny entry. Do not get in eyes, on skin or on clothing. Do not breathe dust, fume, gas, mist, vapors, or spray. Wear appropriate personal protective equipment recommended in Section 8, Exposure Controls / Personal Protection, of the SDS.

**Personal Protective Equipment:** For Unknown Concentrations or exposures above IDLH (Immediately Dangerous to Life or Health) - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece. See section 8 for information on personal protective equipment.

**Environmental Precautions:** This material is very toxic to aquatic life. This material is very toxic to aquatic life with long lasting effects. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

**Methods and Materials for Containment, Confinement, and/or Abatement:** DO NOT add water to spilled material. DO NOT use floor sweeping compounds to clean up spills. Sweep and scoop spilled material into clean, dedicated equipment. Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up. DO NOT attempt to reseal contaminated drums. DO NOT transport wet or damp material. Damp material should be neutralized to a non-oxidizing state. Contact OxyChem for instructions for handling and disposal of damp material.

**Recovery:** Contain spilled material. Any spillage of ACL products should be cleaned up as soon as possible to

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prevent contamination with foreign materials with which it may react. Floor sweeping compounds should not be used. KEEP SPILLED MATERIAL DRY. If allowed to stand in damp or wet areas, tear producing vapors may result. Keep unneutralized ACL out of sewers, watersheds and water systems. Using clean, dedicated equipment, sweep and scoop up all spilled material, contaminated soil and other contaminated material and place into clean dry containers for disposal. Complete cleanup on a dry basis if possible. Sweeping compounds or other contaminants should not be mixed with ACL during this cleanup operation as fuming, fire or explosion may result. Follow all protective measures indicated in the "Personal Precautions and Personal Protective Equipment" sections of this document.

**Neutralization:** The neutralization process involves the addition of waste ACL products to alkaline aqueous solutions maintained at a pH of 10.5 (e.g. sodium hydroxide; sodium carbonate; or sodium sulfite). At this pH, the major fraction of chlorine is destroyed by chemical reactions between chlorine and cyanuric acid contained in the waste ACL. THIS PROCESS SHOULD ONLY BE CARRIED OUT AFTER CAREFULLY REVIEWING THE ACL® WASTE NEUTRALIZING PROCEDURE PROVIDED BY OXYCHEM TECHNICAL SERVICE.

**Final Disposal:** For waste disposal, see section 13.

## SECTION 7. HANDLING AND STORAGE

### Handling:

**Precautions for Safe Handling:** Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or dust when opening container. Avoid creation of dust. Wash thoroughly after handling. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS. NEVER add water to this product. Always add product to large quantities of water. Use clean, dry utensils. Do not add the product to any dispensing device containing residuals of other products. Take precautions to avoid mixing with combustible or incompatible materials.

**Technical measures/precautions:** Due to the thermal decomposition properties of ACL 60, friction-producing equipment, such as screw conveyors or items with internal bearings, should be avoided whenever possible.

**Prevention of contact:** Provisions should be made to open and use ACL containers in well-ventilated work areas to protect handlers from excessive chlorine odor and dust. See Section 8, Exposure Controls and Personal Protection, for additional information.

### Storage:

**Safe Storage Conditions:** Store only in original container. Store and handle in accordance with all current regulations and standards. (NFPA Oxidizer Class 2). Do not allow water to get in container. If liner is present, tie after each use. Keep container tightly closed and properly labeled. Store containers on pallets. Keep away from food, drink and animal feed. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

**Technical measures:** ACL should be stored in a cool (temperatures not to exceed 125°F for 24hours), dry, well-ventilated area, segregated from incompatible chemicals. Storage conditions should comply with the requirements established by the National Fire Protection Association's NFPA 1 – Uniform Fire Code and/or NFPA 400 – Hazardous Materials Code and/or the International Code Council's (ICC) International Fire Code. Since both NFPA and ICC codes are used throughout the U.S., consult with local fire departments to determine which codes apply.

**Incompatible Substances:** ACLs are highly reactive oxidizing and chlorinating agents. Precautions should be taken to prevent the mixing of these products with other incompatible chemicals during storage, handling and manufacture. Some chemicals incompatible with ACLs include (but are not limited to): Strong acids or bases; Amino Compounds (amines; amides; ammonia, and ammonium salts) and hydrazines; Acetic acid and acetic anhydride; Alcohols

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(methyl, ethyl, isopropyl, etc.) and phenols; Alkenes and acetylene; Biuret; Calcium hypochlorite; Ethers; Fungicides; Glycerin; Mineral reducing agents (sulfides, bisulfites, thiosulfates, nitrites, cyanide salts, etc.); Oils and paints; Organic or mineral oxidizers (peroxides, perborates, percarbonates); Petroleum products (gasoline, kerosene, etc.); Urea. Substances not listed must be evaluated for compatibility prior to use.

**Packaging Material:** ACL products have excellent stability when they are properly packaged and stored; however, these materials can form enough chlorine-containing gases to cause deterioration of the container. Therefore, the standard shelf-life for packaged product (in bulk bags, plastic drums or pails) is two years. The one exception is for product in cardboard cases where the shelf-life is six months. These guidelines are based on potential deterioration of packaging and not on degradation of product.

**Additional Information:****GHS: PHYSICAL HAZARDS:**

- Oxidizing Solid - Category 2 - May intensify fire; oxidizer

**Physical Hazards Not Otherwise Classified**

- Damp or wet material may generate nitrogen trichloride, an explosion hazard  
 - Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION****REGULATORY EXPOSURE LIMIT(S):**

This product does not contain any components that have regulatory occupational exposure limits (OEL's).

**NON-REGULATORY EXPOSURE LIMIT(S):**

This product does not contain any components that have advisory (non-regulatory) occupational exposure limits (OEL's); however, the manufacturer has established internal Recommended Exposure Level(s) [REL(s)] as noted below.

Recommended Exposure Limits (REL's) are non-regulatory occupational exposure limits that the manufacturer has established based on health effects data.

Component	OXY REL 8 hr TWA	OXY REL STEL	OXY REL Ceiling
Dichloroisocyanuric acid, sodium salt 2893-78-9 ( 89 - 90 )	0.5 mg/m <sup>3</sup> (8-hr TWA)	NA	NA

**Additional Advice:** Bromine may be found in slight amounts in the head space of containers of this product. Chlorine and chlorine compounds may be found in slight amounts in the head space of containers of this product.

**ENGINEERING CONTROLS:** Use only in well-ventilated areas. Provide local exhaust ventilation where dust or mist may be generated. Conventional mixer types can be used for the formulation of these products but should be designed or modified to minimize attrition, dusting or spilling. Provision should be made to collect any dust from the mixer in a suitable dust-collecting system. Note, the dust collection system for ACL products should not be used to collect dust from materials that will react with ACL products. All equipment should be thoroughly cleaned before and after mixing to prevent the possibility of undesired reactions or fire as a result of accidental contamination. Ensure

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compliance with applicable exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT:

**Eye Protection:** Wear safety glasses with side-shields. Wear chemical safety goggles with a face shield to protect against eye and skin contact when appropriate. Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection:** Wear protective clothing to minimize skin contact. When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek®. Contaminated clothing should be removed and laundered before reuse.

**Hand Protection:** Wear appropriate chemical resistant gloves. Consult a glove manufacturer for assistance in selecting an appropriate chemical resistant glove.

**Protective Material Types:** Butyl rubber, Natural rubber, Neoprene, Nitrile, Polyvinyl chloride (PVC), Tyvek®

**Respiratory Protection:** A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne dust concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. The added protection of a full face-piece respirator is required when visible dusty conditions are encountered and eye irritation may occur. Acid gas cartridges with N95 filters are required when fumes or vapor may be generated. When an air-purifying respirator is not adequate, for exposures above the IDLH or for spills and/or emergencies of unknown concentrations, a NIOSH approved self-contained breathing apparatus or airline respirator with a full-face piece and with an auxiliary self contained escape pack is required. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Solid
<b>Color:</b>	White
<b>Odor:</b>	Slight chlorine/bromine odor
<b>Molecular Weight:</b>	220
<b>Molecular Formula:</b>	C <sub>3</sub> N <sub>3</sub> O <sub>3</sub> Cl <sub>2</sub> Na
<b>Chemical Family:</b>	CHLORINATED ISOCYANURATES
<b>pH:</b>	6 - 7 @ 25 °C (1% solution)
<b>Melting Point/Range:</b>	Decomposes without melting
<b>Freezing Point/Range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Vapor Pressure:</b>	<0.06 Pa @ 20 °C
<b>Vapor Density (air=1):</b>	Not applicable
<b>Relative Density/Specific Gravity (water=1):</b>	1.98 g/mL @ 25 °C
<b>Density:</b>	No data available
<b>Bulk Density:</b>	55 - 57 lbs/ft <sup>3</sup> (loose)
<b>Water Solubility:</b>	24.3 g/100 g @ 25 °C
<b>Partition Coefficient (n-octanol/water):</b>	Kow = 0

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<b>Auto-ignition Temperature:</b>	Not determined
<b>Decomposition Temperature:</b>	Decomposes above 210 °C
<b>Odor Threshold [ppm]:</b>	Not Available
<b>Evaporation Rate (ether=1):</b>	Not applicable
<b>Volatility:</b>	Not applicable
<b>Flammability (solid, gas):</b>	Not flammable
<b>Lower Flammability Level (air):</b>	Not flammable
<b>Upper Flammability Level (air):</b>	Not flammable
<b>Viscosity:</b>	Not applicable

## SECTION 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable, not reactive under normal temperatures and pressures.

**Reactivity:** Not reactive under normal temperatures and pressures.

**Possibility of Hazardous Reactions:** Do not get water inside container. Wet material may generate nitrogen trichloride, an explosion hazard. Avoid contact with easily oxidizable organic material. Contact with acids liberates toxic gas.

- ACL in the presence of ammonia gas or aqueous solutions of ammonia will generate hazardous amounts of explosive nitrogen trichloride.
- Contamination with oils and greases may cause decomposition of ACL with formation of CO<sub>2</sub>, Cl<sub>2</sub>, and other toxic gases.
- Hydrogen peroxide may react violently with ACL with liberation of oxygen.

**Conditions to Avoid (e.g., static discharge, shock, or vibration):** Wet material may generate nitrogen trichloride, an explosion hazard. Nitrogen trichloride (NCl<sub>3</sub>) can appear as a yellow, oily liquid or vapor. Any quantity of NCl<sub>3</sub> is potentially explosive. Liquid NCl<sub>3</sub> will explode in contact with certain organic impurities, when melting after having been frozen, from impact or supersonic vibration, or on heating to 60°C or above. Vapor NCl<sub>3</sub> can be exploded or decomposed (to N<sub>2</sub> and Cl<sub>2</sub>) when concentrations in air are as low as 0.3%. At this low concentration, however, the propagation rate is extremely slow, on the order of several minutes per foot. At concentrations of 3-4%, the detonation is explosive with an instantaneous pressure rise. There are no good data on what temperature or conditions are required to explode the gas. It is known that NCl<sub>3</sub> vapor (or vapor-air mixture) can be exploded by a spark or by temperature in excess of 100°C.

**Incompatible Substances:** ACLs are highly reactive oxidizing and chlorinating agents. Precautions should be taken to prevent the mixing of these products with other incompatible chemicals during storage, handling and manufacture. Some chemicals incompatible with ACLs include (but are not limited to): Strong acids or bases; Amino Compounds (amines; amides; ammonia, and ammonium salts) and hydrazines; Acetic acid and acetic anhydride; Alcohols (methyl, ethyl, isopropyl, etc.) and phenols; Alkenes and acetylene; Biuret; Calcium hypochlorite; Ethers; Fungicides; Glycerin; Mineral reducing agents (sulfides, bisulfites, thiosulfates, nitrites, cyanide salts, etc.); Oils and paints; Organic or mineral oxidizers (peroxides, perborates, percarbonates); Petroleum products (gasoline, kerosene, etc.); Urea. Substances not listed must be evaluated for compatibility prior to use.

**Hazardous Decomposition Products:** Chlorine, nitrogen, nitrogen trichloride, cyanogen chloride, Oxides of Carbon, Phosgene.

**Hazardous Polymerization:** Not expected to occur.

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**SECTION 11. TOXICOLOGICAL INFORMATION****POTENTIAL HEALTH EFFECTS:****TOXICITY:**

Monosodium cyanurate was administered via drinking water to rats for 104 weeks at concentrations of 0, 400, 1200, 2400, and 5375 ppm (solubility limit). No compound-related effects on body weights, clinical signs of toxicity or food or water consumption were noted during the study. An increased incidence of gross lesions in the urinary tract, calculi in the kidney and lesions in the heart were observed in males receiving the highest dose level of 5375 ppm (solubility limit). The health effects seen in this study were due to precipitation of the test substance in the urinary tract when the test substance was fed at the solubility limit. Adverse health effects were not seen at lower doses where precipitation did not occur.

**ACUTE TOXICITY:**

**Eye contact:** Eye exposures may cause burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to the internal eye structures.

**Skin contact:** Exposure to solid along with moisture may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns. Dry material is less irritating than wet material. This material is not a skin sensitizer based on studies with guinea pigs.

**Inhalation:** This material in the form as sold is NOT expected to produce respiratory effects. Particles of respirable size are generally not encountered. The respirable fraction is typically less than 0.1% by weight for the granular and extra granular grades. If ground or otherwise in a powdered form, effects similar to a corrosive substance may occur. Exposure to the solid product or to free chlorine evolving from the product may cause irritation, redness of upper and lower airways, coughing, laryngospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure.

**Ingestion:** Exposure by ingestion may cause irritation, nausea, and vomiting. May cause local tissue damage to epiglottitis, mucus membranes of the mouth, esophagus and stomach such as burning, inflammation, local ulceration, and may cause gastrointestinal bleeding.

**Chronic Effects:** None identified for the parent chemical. Based on animal studies, exposure to concentrations of monosodium cyanurate, a stable degradate of this product, at the solubility limit may cause cardiovascular, kidney and urinary bladder effects. SODIUM BROMIDE: Based on animal studies, exposure to concentrations of sodium bromide may cause reversible effects to the reproductive system. Repeated skin contact may cause dermatitis. Repeated oral intake of bromides may affect the Central Nervous System (CNS).

**SIGNS AND SYMPTOMS OF EXPOSURE:**

**Inhalation (Breathing):** Respiratory System Effects. Exposure to the solid product or to free chlorine evolving from the product may cause irritation, redness of upper and lower airways, coughing, laryngospasm and edema, shortness of breath, bronchoconstriction, and possible pulmonary edema. The pulmonary edema may develop several hours after a severe acute exposure. Please refer to Section 11 for additional information.

**Skin:** Skin Corrosion. Exposure to solid along with moisture may cause redness, irritation, burning sensation, swelling, blister formation, first, second, or third degree burns.

**Eye:** Serious Eye Damage. Exposure to eyes may cause irritation and burns to the eye lids, conjunctivitis, corneal edema, and corneal burn. Significant and prolonged contact may cause damage to internal eye structures.

**Ingestion (Swallowing):** Gastrointestinal Effects. Exposure by ingestion may cause irritation, nausea, and

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vomiting. May cause local tissue damage to esophagus and stomach such as burning, inflammation, local ulceration, and may cause gastrointestinal bleeding.

**Interaction with Other Chemicals Which Enhance Toxicity:** Contact with acids liberates toxic gas.

\*\*\*\*\*

**GHS HEALTH HAZARDS:**

**GHS: CONTACT HAZARD - SKIN:** Category 1C - Causes severe skin burns and eye damage

**GHS: CONTACT HAZARD - EYE:** Category 1 - Causes serious eye damage

**GHS: ACUTE TOXICITY - ORAL:** Category 4 - Harmful if swallowed

**GHS: ACUTE TOXICITY - INHALATION:** Category 3 - Toxic if inhaled

**TOXICITY DATA:**

**PRODUCT TOXICITY DATA:** Data is from studies conducted internally. The test material for the LC50 inhalation 4 hr. Rat resulting in 0.6 mg/L was TowerBrom 60 (~ 90% Dichloroisocyanurate); all other results were from Dichloroisocyanurate.

<b>LD50 Oral:</b> 1823 mg/kg (Rat)	<b>LD50 Dermal:</b> >2000 mg/kg (Rabbit)	<b>LC50 Inhalation:</b> 0.27 - 1.17 mg/L (4 hr - Rat) 0.6 mg/L (4 hr - Rat)
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**Standard Draize (Eye):** PRIMARY EYE IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

**Eye Irritation/Corrosion:** Corrosive to the eyes and may cause severe damage including blindness.

**Standard Draize (Skin):** PRIMARY SKIN IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

**Skin Irritation/Corrosion:** This product is classified as causing severe skin burns (Category 1, H314), according to GHS classification criteria.

**Skin Absorbent / Dermal Route:** NO.

**CARCINOGENICITY:** This product is not classified as a carcinogen by NTP, IARC or OSHA.

**SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):** The substance is not classified as a specific target organ toxicant after single exposure per GHS criteria. See Acute Inhalation Toxicity below.

**SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure):** The substance is not classified as a specific target organ toxicant upon repeated exposure per GHS criteria.

**INHALATION HAZARD:** This product is classified as TOXIC IF INHALED (Category 3) per GHS criteria. Size of actual cut typically ranges 250 - 2000 microns with <0.3% less than 100 microns and <0.06% less than 10 microns (limit of respirable particles).

**IN-VITRO / IN-VIVO GENOTOXICITY:** Not classified as a mutagen per GHS criteria. Not mutagenic in 5 Salmonella strains and 1 E. coli strain with or without mammalian microsomal activation.

**REPRODUCTIVE TOXICITY:** Not classified as a reproductive toxin per GHS criteria. SODIUM BROMIDE: A 7-month diet rat study with sodium bromide, followed with a 3-month control diet in the reversibility group, showed complete infertility at the highest dose. No treatment-related effects were observed in reproductive performance, viability and bodyweight of the offspring in the second and third generations. Results of the reversibility group showed

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clearly that the effects of sodium bromide on reproduction are reversible.

**TOXICOKINETICS:** Not available.

**METABOLISM:** Not available.

**PATHOGENICITY AND ACUTE INFECTIOUSNESS (ORAL, DERMAL, AND INHALATION):** Not applicable.

**ENDOCRINE DISRUPTOR:** Sodium bromide is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system.

**NEUROTOXICITY:** Not Available.

**IMMUNOTOXICITY:** Not available.

**Hazard Not Otherwise Classified (HNOC)-Health**

- Contact with acids liberates toxic gas
- Damp or wet material may generate hazardous and toxic gases
- Sodium bromide at high doses affects the thyroid, adrenals and testes; may be an endocrine disruptor. The NOEL for sodium bromide is 300 mg/kg diet
- Contact with water slowly liberates irritating and hazardous chlorine containing gases
- Heating over 115 °C (239 °F) may initiate a self-sustaining decomposition which releases large amounts of heat and gas including toxic fumes
- Decomposes at temperatures above 210 °C ( 410 °F ) with liberation of harmful gases

## SECTION 12. ECOLOGICAL INFORMATION

**Product Information:**

Sodium Dichloroisocyanurate/Sodium Bromide formulation: This material is believed to be highly toxic to aquatic life.

**ECOTOXICITY (EC, IC, and LC):**

**Fish Toxicity:**

LC50 Bluegill sunfish: 0.25-1.0 mg/L (96 hour)

LC50 Rainbow trout: 0.13-0.36 mg/L (96 hour)

LC50 Inland silversides: 1.21 mg/L (96 hour)

**Algae Toxicity:**

EC50 Selenastrum: 0.3 mg/L (96 hour)

**Invertebrate Toxicity:**

LC50 Water flea: 0.196 mg/L (48 hour)

LC50 Mysid shrimp: 1.65 mg/L (96 hour)

**Other Toxicity:**

LD50 Mallard duck (oral): 1,916 mg/kg

LD50 N. Bobwhite Quail (oral): N/D

LC50 Mallard duck (diet): >10,000 ppm

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LC50 N. Bobwhite Quail (diet): &gt;10,000 ppm

### FATE AND TRANSPORT:

**PERSISTENCE:** This material is believed not to persist in the environment. Free available chlorine is rapidly consumed by reaction with organic and inorganic materials to produce chloride ion. The stable degradation products are chloride ion and cyanuric acid.

**BIODEGRADATION:** Chlorinated isocyanurates react with water to form hypochlorous acid and isocyanuric acid. Hypochlorous acid is rapidly destroyed by natural substances present in the water or environment (on the scale of minutes or hours). Isocyanuric acid biodegrades very slowly under aerobic conditions unless; 1) specific fungi or bacteria strains are present, 2) the microorganisms have been acclimated to isocyanuric acid, and 3) organic nutrients are present for the microorganisms.

**BIOCONCENTRATION:** This material hydrolyses in water liberating free available chlorine and cyanuric acid. These products are not bioaccumulative.

**BIOACCUMULATIVE POTENTIAL:** No bioaccumulation data is available for isocyanuric acid in fish or aquatic organisms, but it is not expected to bioaccumulate due to its low octanol-water partition coefficient (0.067). Isocyanuric acid is eliminated unchanged from the bodies of rats, dogs, and humans.

**MOBILITY IN SOIL:** The soil partition coefficient is a measure of a compound's tendency to partition to soils and sediments. Isocyanuric acid should be considered highly mobile and not strongly absorbed onto soil.

**ADDITIONAL ECOLOGICAL INFORMATION:** This product is very toxic to fish and aquatic organisms. This product is very toxic to aquatic life with long lasting effects. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of appropriate regulatory requirements (e.g. permit and the permitting authority has been notified in writing prior to discharge). Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your local or regional regulatory water boards and/or other appropriate regulatory offices.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Waste from material:

Use or reuse if possible. This material is a registered pesticide. May be subject to disposal regulations. Dispose in accordance with all applicable regulations. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. DO NOT transport wet or damp material. Damp material should be neutralized to a non-oxidizing state. Contact OxyChem for instructions for handling and disposal of damp material. Wastes of this pesticide may cause irreversible eye damage and burns to skin and may be dangerous. Improper disposal of excess pesticide, spray mixture 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.

### Container Management:

See product label for container disposal information. Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

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**SECTION 14. TRANSPORT INFORMATION****LAND TRANSPORT****U.S. DOT 49 CFR 172.101:**

**Status:** Regulated: Non-bulk packages by ground and air shipments are regulated as oxidizers. Bulk packaging or shipments by vessel are regulated as follows:

**UN NUMBER:** UN2465

**PROPER SHIPPING NAME:** Dichloroisocyanuric Acid Salts, Mixture

**HAZARD CLASS/ DIVISION:** 5.1

**PACKING GROUP:** II

**LABELING REQUIREMENTS:** 5.1, Marine Pollutant

**MARINE POLLUTANT:** Sodium dichloroisocyanurate

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**Status:** Regulated: Non-bulk packages by ground and air shipments are regulated as oxidizers. Bulk packaging or shipments by vessel are regulated as follows:

**UN NUMBER:** UN2465

**SHIPPING NAME:** Dichloroisocyanuric Acid Salts, Mixture

**CLASS OR DIVISION:** 5.1

**PACKING/RISK GROUP:** II

**LABELING REQUIREMENTS:** 5.1, Marine Pollutant

**CAN. MARINE POLLUTANT:** Sodium dichloroisocyanurate

**MARITIME TRANSPORT (IMO / IMDG)**

**Status - IMO / IMDG:** Shipment by Vessel: Regulated

**UN NUMBER:** UN2465

**PROPER SHIPPING NAME:** Dichloroisocyanuric Acid Salts, Mixture

**HAZARD CLASS / DIVISION:** 5.1

**Packing Group:** II

**LABELING REQUIREMENTS:** 5.1, Marine Pollutant

**MARINE POLLUTANT:** Sodium dichloroisocyanurate

**AIR TRANSPORT (ICAO / IATA)**

**Special Instructions CAO:** IATA Certificate for shipping personnel is required

**SECTION 15. REGULATORY INFORMATION****U.S. REGULATIONS**

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**OSHA REGULATORY STATUS:**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):**

Not regulated.

**SARA EHS Chemical (40 CFR 355.30)**

Not regulated.

**EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):**

Reactive Hazard, Acute Health Hazard

**SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):**

Physical Hazard - Oxidizer (liquid, solid or gas)  
Health Hazard - Acute Toxin (any route of exposure)  
Health Hazard - Skin Corrosion or Irritation  
Health Hazard - Serious eye damage or eye irritation

**EPCRA SECTION 313 (40 CFR 372.65):**

Not regulated.

**OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):**

Not regulated.

**FIFRA REGULATIONS:** Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). EPA Reg. No. 935-71 (Towerbrom® 60M Granules).

**FIFRA LABELING REQUIREMENTS:** - This chemical is a pesticide product registered by the United States Environmental Protection Agency (EPA) 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

- FIFRA Signal Word - DANGER
  - Corrosive
  - Causes irreversible eye damage
  - Causes skin irritation
  - Harmful if swallowed
  - This pesticide is toxic to fish and aquatic organisms
  - Strong oxidizing agent
  - Contact with water slowly liberates irritating and hazardous chlorine containing gases
  - Decomposes at temperatures above 464 °F with liberation of harmful gases
  - When ignited will burn with the evolution of chlorine and equally toxic gases
  - NEVER add water to product
  - Always add product to large quantities of water
  - Use only clean and 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 material, or other incompatible chemicals may start a reaction with generation of heat, liberation of hazardous gases, and possible fire and explosion
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### NATIONAL INVENTORY STATUS

#### U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8
Dichloroisocyanuric acid, sodium salt 2893-78-9	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Sodium bromide (NaBr) 7647-15-6	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Sodium Chloride 7647-14-5	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed

**CANADIAN CHEMICAL INVENTORY:** All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Dichloroisocyanuric acid, sodium salt 2893-78-9 ( 88 - 90 )	Listed	Not Listed
Sodium bromide (NaBr) 7647-15-6 ( 6 - 8 )	Listed	Not Listed
Sodium Chloride 7647-14-5 ( 0.1 - 1.5 )	Listed	Not Listed

### STATE REGULATIONS

#### California Proposition 65:

This product and its ingredients are not listed on the California Governor's current list of Carcinogens, Reproductive Toxicants, and/or Candidate Carcinogens (Proposition 65), but it may contain trace amounts of impurities that are listed. For additional information, contact OxyChem Customer Relations.

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Dichloroisocyanuric acid, sodium salt	Not Listed	Not Listed	Not Listed	Listed	Listed
Sodium bromide (NaBr)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Dichloroisocyanuric acid, sodium salt	1694	Not Listed	Not Listed	Listed	Not Listed	Not Listed	Not Listed
Sodium bromide (NaBr)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

### CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject	CANADIAN CHEMICAL INVENTORY:	NDSL:

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			to Mandatory Reporting		
Dichloroisocyanuric acid, sodium salt 2893-78-9 ( 88 - 90 )	Not listed	Not Listed	Not Listed	Listed	Not Listed
Sodium bromide (NaBr) 7647-15-6 ( 6 - 8 )	Not listed	Not Listed	Not Listed	Listed	Not Listed
Sodium Chloride 7647-14-5 ( 0.1 - 1.5 )	Not listed	Not Listed	Not Listed	Listed	Not Listed

**PCP Registration:**

- This product is registered as a pesticide in Canada under PCP Reg No. 27275

## SECTION 16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 18-May-2020

**Reason for Revision:**

- Change of company physical address: SEE SECTION 1
- Included additional information for other usage that may be restricted and/or prohibited: SEE SECTION 1
- Modified the Emergency Overview information: SEE SECTION 2
- Changed GHS Classification: SEE SECTION 2
- Modified GHS Hazard and Precautionary Statements: SEE SECTION 2
- Added Hazards Not Otherwise Classified (HNOC): SEE SECTION 2
- Updated First Aid Measures: SEE SECTION 4
- Modified Fire Fighting Measure Recommendations: SEE SECTION 5
- Added Physical Hazards Not Otherwise Classified to format: SEE SECTIONS 5&7
- Revised Accidental Release Measures: SEE SECTION 6
- Revised Handling and Storage Recommendations: SEE SECTION 7
- Modified Exposure Limit information: SEE SECTION 8
- Additional information on dust collection systems added: SEE SECTION 8
- Updated Physical and Chemical Properties. SEE SECTION 9
- Stability and Reactivity recommendations: SEE SECTION 10
- Toxicological Information has been revised: SEE SECTION 11
- GHS Classification Changes in SECTION 11
- SDS format change / enhancement to Section 11: Toxicological Information
- Ecological Information has been modified: SEE SECTION 12
- Updated Disposal Considerations. SEE SECTION 13
- Updated Transportation Information: SEE SECTION 14
- Added air transport certificate requirements for shipping personnel: SEE SECTION 14

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- Added SARA Hazard Categories Aligned with GHS (2018): SEE SECTION 15
- Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15
- Updated TSCA Status Table: SEE SECTION 15
- Revised California Proposition 65 Statement: SEE SECTION 15

### **IMPORTANT:**

The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and Occidental Chemical Corporation assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any federal, state, local or foreign laws.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

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**End of Safety Data Sheet**