



Precautionary Statements - Prevention

Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Do not breathe dust, vapor or spray mist. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Do not eat, drink, or smoke when using this product. Wear safety glasses with side shields, chemical splash goggles, face-shield, protective clothing, and chemical resistant gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash before reuse. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Collect spillage. Store in a well-ventilated place. Keep material dry and store in a dry area. Keep container tightly closed. Keep separated from incompatible substances. Store in a secure manner.

Precautionary Statements - Response

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. May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. If significant or prolonged exposure occurs, pulmonary edema may develop, either immediately or more often within a period of 5-72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure. Severe cases may be fatal.

Skin contact: This material is irritating to the skin. Direct contact with wet material or by moist skin may cause severe irritation, pain, and possibly burns. Dry material is less irritating than wet material. This material is not a skin sensitiser based on studies with guinea pigs.

Eye contact: This material is corrosive to the eye. Direct contact may cause severe irritation, pain and burns, possibly severe, and permanent damage including blindness. The degree of injury depends on the concentration and duration of contact.

Ingestion: Not a likely route of exposure. Harmful if swallowed. Ingestion may cause immediate pain and severe burns of the mucous membranes. There may be discoloration of the tissues. Swallowing and speech may be difficult at first and then almost impossible. The effects on the esophagus and gastrointestinal tract may range from irritation to severe corrosion. Edema of the epiglottis and shock may occur.

Chronic Effects: Based on animal studies, exposure to concentrations of monosodium cyanurate at the solubility limit may cause cardiovascular, kidney and urinary bladder effects.

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Sodium dichloroisocyanurate dihydrate	51580-86-0	>90

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice Provide this SDS to medical personnel for treatment.

Eye Contact	Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. GET MEDICAL ATTENTION IMMEDIATELY.
Skin Contact	Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.
Inhalation	Move to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.
Ingestion	Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give water. If vomiting occurs spontaneously, keep airway clear. Give water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

Most important symptoms and effects

Symptoms	Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Probable mucosal damage may contraindicate the use of gastric lavage.
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5. FIRE-FIGHTING MEASURES

Fire Hazard: Negligible fire hazard. If heated by outside source to temperatures above 240 C (464 F), this product will undergo decomposition with the evolution of noxious gases but no visible flame. Wet material may generate nitrogen trichloride, an explosion hazard.

Extinguishing Media: Flood with water. Do not use ABC fire extinguishers. Do not use dry chemicals, carbon dioxide, or halogenated extinguishing agents.

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.

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

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

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas.
Environmental Precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Keep unnecessary people away, isolate hazard area and deny entry. 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. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. 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. 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.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Store in original container and in a dry area where temperatures do not exceed 52 °C (125 °F) for 24 hours. Store and handle in accordance with all current regulations and standards. (NFPA Oxidizer Class 1). 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 Section 10 of the Safety Data Sheet). Product has an indefinite shelf life if stored in original container in a cool, dry place.
Incompatible Materials	Acids, ammonia, bases, floor sweeping compounds, calcium hypochlorite, reducing agents, organic solvents and compounds

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Regulatory Exposure Limit(s): None Non-Regulatory Exposure Limit(s): None

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

Appropriate engineering controls

Engineering Controls	Use only in well-ventilated areas. Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Goggles or safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and Body Protection	Neoprene or rubber gloves with cuffs. Coveralls, apron or other equipment should be worn 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.
Respiratory Protection	A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne 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. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Solid		
Appearance	White granules	Odor	Slight chlorine odor
Color	white	Odor Threshold	Not determined
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	6-7		
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	Not Determined		
Flash Point	Not determined		
Evaporation Rate	<1		(Water = 1)
Flammability (Solid, Gas)	NA		
Upper Flammability Limits	Not determined		
Lower Flammability Limit	Not determined		
Vapor Pressure	NA		
Vapor Density	NA		
Specific Gravity	1.95		(Water = 1)
Water Solubility	26.5g/100g		
Solubility in other solvents	Not determined		
Partition Coefficient	Kow = 0		
Auto-ignition Temperature	Not determined		
Decomposition Temperature	486 F		
Kinematic Viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Not determined	Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity Not reactive under normal conditions.

Chemical Stability Stable.

Possibility of Hazardous Reactions None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Keep out of reach of children. Do not get water inside container. Wet material may generate nitrogen trichloride, an explosion hazard. Avoid contact with easily oxidizable organic material.

Incompatible Materials

Acids, ammonia, bases, floor sweeping compounds, calcium hypochlorite, reducing agents, organic solvents and compounds

Hazardous Decomposition Products

chlorine, nitrogen, nitrogen trichloride, cyanogen chloride, oxides of carbon, phosgene

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA:

PRIMARY SKIN IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

PRIMARY EYE IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium dichloroisocyanurate dihydrate	1823 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	0.27 - 1.17mg/L ppm (Rat) 1 h

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.

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

MUTAGENIC DATA: Not mutagenic in 5 salmonella strains and 1 E. coli strain with or without mammalian microsomal activation.

REPRODUCTIVE TOXICITY: There are no known or recorded effects on reproductive function or fetal development.

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity This product is not classified as a carcinogen by NTP, IARC or OSHA.

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"

STOT - single exposure May cause respiratory irritation. May cause drowsiness or dizziness.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity**ECOTOXICITY DATA:**

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)

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): 1,732 mg/kg LD50 Mallard duck (diet): >10,000 ppm LD50 N. Bobwhite Quail (diet): >10,000 ppm

FATE AND TRANSPORT:

BIODEGRADATION: This material is subject to hydrolysis. Cyanuric acid produced by hydrolysis is biodegradable.

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.

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

ADDITIONAL ECOLOGICAL INFORMATION: This product is toxic to fish and aquatic organisms. 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.

Other Adverse Effects Not determined

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes	Use or reuse if possible. This material is a registered pesticide. 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. See product label for container disposal information. May be subject to disposal regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

Status: Non-Bulk Packaging: Not Regulated under DOT unless transported by Vessel Bulk Packaging or Shipment by Vessel: Regulated

UN NUMBER: UN3077

PROPER SHIPPING NAME: EnvironmentallyHazardousSubstance,Solid,n.o.s.(Sodiumdichloroisocyanurate dihydrate), Marine Pollutant

HAZARD CLASS/ DIVISION: 9 PACKING GROUP: III

LABELING REQUIREMENTS: 9, Marine Pollutant
MARINE POLLUTANT: Sodium dichloroisocyanurate dihydrate

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
Status: Non-Bulk packaging: Not Regulated unless transported by vessel Bulk Packaging or Shipment by vessel: Regulated

UN NUMBER: UN3077

SHIPPING NAME: Environmentally Hazardous Substance, Solid, n.o.s. (Sodium dichloroisocyanurate dihydrate), Marine Pollutant

HAZARD CLASS/ DIVISION: 9 PACKING GROUP: III

CAN. Marine Pollutant: Sodium dichloroisocyanurate dihydrate

15. REGULATORY INFORMATION

U.S. REGULATIONS

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.

EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10): Fire Hazard, Reactive Hazard, Acute Health Hazard

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. 935-38 (ACL 56 Chlorinating Composition)

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt. TSCA 12(b): This product is not subject to export notification

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65: This product is not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.

US Federal Regulations

16. OTHER INFORMATION

NEPA

Health Hazards	2
Flammability	0
Instability	1
Special Hazards	Not determined

HMIS

Health Hazards	3
Flammability	0
Physical Hazards	1
Personal Protection	Not determined

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet