



SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)

Product name	GK Chlorinated Disinfecting Crystals	
Product id	2007	
Revision date	01/01/2014	Revision: 10
Supersedes	09/06/2013	

1. Identification of the substance & the company

Chemical name	Sodium dichloroisocyanurate, dihydrate
Synonym(s)	Sodium dichlor; Sodium dichloro-s-triazinetrione dihydrate; Troclosene sodium, dihydrate CDB 56
Chemical formula	$\text{NaCl}_2(\text{NCO})_3 \times 2\text{H}_2\text{O}$
Chemical family	Chloroisocyanurate
Molecular weight	256
Type of product and use	For formulation into end-use products intended for disinfectants, sanitizers, fungicides, bactericides and algacides for pools, spas, hot tubs industrial recirculating water cooling towers, air washers and evaporative condensers, sewage treatment, food contact surfaces, laundry and egg sanitizing and drinking water disinfection (as supported by WHO and as per NSF/ANSI Standard 60)
Manufactured for	SOP Green Klean 615 Industrial Dr, Ste D Cary, IL 60013, USA Phone Number: 1-815-479-0460
Emergency Telephone	Chemtrec (800)424-9300 Medical (800)420-9236

2. Hazards identification

GHS

GHS classification	Acute Tox. 4, H302 Harmful if swallowed Eye Irrit. 2, H319 Causes serious eye irritation STOT SE 3, H335 May cause respiratory irritation Aquatic Acute 1, H400 - Very toxic to aquatic life Aquatic Chronic 1, H410 - Very toxic to aquatic life with long lasting effects
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Labels and other form of warning
Symbol(s)



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Signal Word	WARNING
Hazard statements	H302 - Harmful if swallowed H319 - Causes serious eye irritation H335 - May cause respiratory irritation H410 - Very toxic to aquatic life with long lasting effects EUH031 - Contact with acids liberates toxic gas
Precautionary statements	P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P280 - Wear protective gloves/protective clothing/eye protection/face protection P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P264 - Wash hands thoroughly after handling P270 - Do not eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area P273 - Avoid release to the environment P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. P337 + P313 - If eye irritation persists: Get medical advice/attention. P391 - Collect spillage P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P312 - Call a POISON CENTER or doctor/physician if you feel unwell P405 - Store locked up P501 - Dispose of contents/container in accordance with national and international regulations
NFPA Ratings (Scale 0-4)	Health = 2, Fire = 0, Reactivity = 1. Special Hazard Warning: OXIDIZER.
HMIS Ratings (Scale 0-4)	Health = 3, Fire = 0, Reactivity = 1.



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3. Composition / information on ingredients

Components	CAS No.	Weight %
SODIUM DICHLOROISO CYANURATE, DIHYDRATE	51580-86-0	99-100
SODIUM CHLORIDE	7647-14-5	0-1

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 eye. 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. Call a poison control center or doctor for treatment advice. Get medical attention immediately.

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

Ingestion Call poison control center, or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. 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 and effects, acute or delayed

- Eye Contact Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

- Skin contact Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.

- Inhalation Irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema that can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage from the corrosive action of the lung.



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- Ingestion	Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding and/or tissue ulceration. Ingestion causes severe damage to the gastrointestinal tract with the potential to cause perforation.
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Note to physician	Probable mucosal damage may contraindicate the use of gastric lavage. No specific antidote. Treat symptomatically and supportively. In case of ingestion DO NOT induce vomiting.
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5. Fire - fighting measures

Suitable extinguishing media	Water.
Extinguishing media not to be used	Do not use dry chemical extinguisher containing ammonia compounds.
Unusual fire and explosion hazards	When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine and CO.
Fire fighting procedure	Cool containers with water spray. Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) in positive pressure mode. On small fires, use water spray or fog. On large fires, use heavy deluge or fog streams. Flooding amounts of water may be required before extinguishment can be accomplished.



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6. Accidental release measures

Personal precautions For small spills in a well-ventilated areas, wear a NIOSH approved half-face or full face tight fitting respirator or a loose fitting powered air purifying respirator equipped with chlorine cartridges. Chemical goggles should be worn when using a half-face respirator. In addition to respiratory protection, wear coveralls, chemical resistant gloves, chemical resistant footwear; and chemical resistant headgear for overhead exposure. For clean-up 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 entire body to prevent personal contact with material. CAUTION - Protection concerns must also address the following: If this material becomes damp/wet or contaminated in a container, the formation of nitrogen trichloride gas may occur and an explosive condition may exist.

Methods for cleaning up Hazardous concentrations in air may be found in local spill area and immediately downwind. If spill material is still dry, do not put water directly on this product as a gas evolution may occur.

Environmental precautions

- **Soil** 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.
- **Water** This material is heavier than and soluble in water. Stop flow of material into water as soon as possible. Begin monitoring for available chlorine and pH immediately.
- **Air** Vapors may be suppressed by the use of water fog.

7. Handling and storage

Handling Do not take internally. Avoid contact with skin, eyes, and clothing. Upon contact with skin or eyes, wash off with water.

Storage Store in a dry, cool, well-ventilated area. away from incompatible materials (see "materials to avoid"). Do not store at temperatures above 60°C/140°F. Product has an indefinite shelf-life limitation.

8. Exposure controls / personal protection

Exposure Limits :



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Components	ACGIH-TLV Data	OSHA (PEL) Data
SODIUM DICHLOROISO CYANURATE, DIHYDRATE 51580-86-0	Not determined	Not determined
SODIUM CHLORIDE 7647-14-5	Not determined	Not determined

Ventilation requirements Use local exhaust ventilation to minimize dust and chlorine levels where industrial use occurs. Otherwise, ensure good general ventilation.

- Personal protective equipment:**
- **Respiratory protection** A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
 - **Respiratory protection** When dusty conditions are encountered, wear a NIOSH/OSHA full-face respirator with chlorine cartridges for protection against chlorine gas and dust/mist pre-filter.
 - **Hand protection** Neoprene gloves (0.67 mm)
 - **Eye protection** Use chemical safety glasses to avoid eye contact. Where industrial use occurs, chemical goggles may be required.
 - **Skin and body protection** Impervious body covering clothes, boots and neoprene apron

Hygiene measures Do not eat, smoke or drink where material is handled, processed or stored. Wash hands thoroughly after handling and before eating or smoking. Safety shower and eye bath should be provided.

9. Physical and chemical properties

Appearance	White granules or tablet-form product
Odor	Mild chlorine-like
Odor threshold	Not determined
pH	Not determined
Melting point/range	Not applicable
Boiling point/range	Not applicable
Flash point	Not applicable
Evaporation rate (ether=1)	Not applicable under standard conditions
Flammability (solid, gas)	Not determined
Flammable/Explosion limits	Not determined
Vapor pressure	Not applicable under standard conditions
Vapor density	Not applicable under standard conditions



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Relative density	tap density= 0.974 g/mL pour density= 1.083 g/mL
Solubility:	
- Solubility in water	24-25 g/100g
Partition coefficient (n-octanol/water)	LogP - -0.0056 (estimated)
Auto-ignition temperature	Not self-ignitable
Decomposition temperature	Begins to lose 1 mole water at approximately 50°C; second mole water at 95°C; Decomposes at 240-250°C
Viscosity	Not applicable
Explosive properties	Not determined
Oxidising properties	Not oxidising
Particle size	Non- inhalable

10. Stability and reactivity

Reactivity	Begins to lose one mole of water at approximately 50°C
Stability	Stable under normal conditions
Possibility of hazardous reactions	If this material becomes damp/wet or contaminated in a container, the formation of nitrogen trichloride gas may occur and an explosive condition may exist.
Conditions to avoid	Heating above decomposition temperature Do not package in paper or cardboard.
Materials to avoid	Organic materials, reducing agents, nitrogen containing materials, other oxidizers, acids, bases, oils, grease, sawdust, dry fire extinguishers containing monoammonium compounds.
Hazardous decomposition products	Nitrogen trichloride, chlorine, carbon monoxide

11. Toxicological information

Likely Routes of Exposure	Skin Inhalation Ingestion Eye contact
Acute toxicity:	
- Rat oral LD50	1671 mg/kg
- Rat dermal LD50	>5000 mg/kg
- Eye irritation (rabbit)	Severe irritant
- Dermal irritation (rabbit)	Severe irritant
Dermal sensitization	Not a sensitizer



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Immediately Dangerous to Life or Health (IDLH)	No level has been established for the components or the product itself.
Chronic toxicity	Chronic inhalation exposure may cause impairment of lung function and permanent lung damage.
Mutagenicity	Not mutagenic in five Salmonella strains with or without metabolic activation.
Carcinogenicity	Not classified by IARC, OSHA, EPA. Not included in NTP 12th Report on Carcinogens
Reproductive toxicity	Sodium dichloroisocyanuric acid when given orally to pregnant mice from day 6 to day 15 of gestation, did not induce any significant teratogenic effects.

12. Ecological information

Aquatic toxicity :

- 96 Hour-LC50, Fish
0.22 mg/l (rainbow trout)
0.28 mg/l (bluegill sunfish)
- 48 hour-LC50, Daphnia magna 0.2 mg/l

Avian toxicity:

- Oral LD50, Bobwhite quail 730 mg/kg
- Oral LD50, Mallard duck 3300 mg/kg
- Dietary LC50, Mallard duck >10,000 ppm
- Dietary LC50, Bobwhite quail >10,000 ppm

Persistence and degradability Not readily biodegradable. Rapidly hydrolyses in water into Cyanuric acid

Bioaccumulative potential Not expected to bioaccumulate

Mobility in soil The degradation product, Cyanuric acid, is weakly adsorbed to and highly mobile in all soils



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13. Disposal considerations

Waste disposal	Care must be taken to prevent environmental contamination from the use of this material. Observe all federal, state and local environmental regulations when disposing of this material.
Disposal of Packaging	Empty containers should be disposed of in accordance with all applicable laws and regulations

14. Transportation information

DOT	Not regulated for non bulk shipments For bulk shipments regulated as: UN No. 3077 Proper shipping name: Environmentally hazardous substance, solid, n.o.s (Sodium Dichloroisocyanurate,dihydrate) Class: 9 - Miscellaneous Hazardous Material Label: 9 Marking: Marine Pollutant Packing Group: III Note: Certain shipping modes or package sizes may have exceptions from the transport regulations and may be classified as Consumer Commodity and Limited Quantity. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.
IMDG	UN No. 3077 Proper shipping name: Environmentally hazardous substance, solid, n.o.s (Sodium Dichloroisocyanurate,dihydrate) Class: 9 - Miscellaneous Dangerous Substances and Articles Label: 9 Mark: MARINE POLLUTANT Packing Group: III
ICAO/IATA	UN No. 3077 Proper shipping name: Environmentally hazardous substance, solid, n.o.s (Sodium Dichloroisocyanurate,dihydrate) Class: 9 Hazard label(s): Miscellaneous Packing group: III Marking: Environmentally hazardous substance



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15. Regulatory information

USA All the components of this substance are listed on or are exempt from the inventory

- EPA Registration no. 69470-20

- Emergency overview in accordance to EPA Master Label DANGER
Hazards to humans and domestic animals
Corrosive
Causes irreversible eye damage
May be fatal if inhaled
Harmful if swallowed or absorbed through skin
Strong oxidizing agent
This pesticide is toxic to fish and aquatic organisms.

- SARA (311, 312) This product is categorized as an immediate health hazard, and fire and reactivity physical hazard.

- Massachusetts Right-to-Know Hazardous Substances list Listed

- Pennsylvania Right-to-Know Hazardous Substances list Listed

- Waste Classifications If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.

- Workplace Classification This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

EU Reported in EINECS

Japan ENCS no. (5)-1043
ISHL no. (5)-1043

Australia Listed in AICS

New Zealand Inventory Listed in NZIoC

China
- China inventory Listed

Philippines Listed in PICCS



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16. Other information

This data sheet contains changes from the previous version in section(s)
2, 12, 13, 14, 15

The information in this Material Safety Data Sheet should be provided to all who will 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.

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, SOP Green Klean makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use. In no event will Clearon Corp. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. **NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.**

In an event of discrepancy between the contents of this SDS and the English version of it, the English version shall prevail.

End of safety data sheet