

## MATERIAL SAFETY DATA SHEET

Product Name	<b>CDB CLEARON</b>	
Product id	2007	
Revision date	21/11/2010	Revision: 6
Supersedes	23/06/2009	

### 1. Identification of the substance & the company

Chemical name	Sodium dichloroisocyanurate, dihydrate
Synonym(s)	Sodium dichlor; Sodium dichloroisocyanurate, dihydrate; Sodium dichloro-s-triazinetriene dihydrate; CDB Clearon; Troclosen sodium, dihydrate
Chemical formula	$\text{NaCl}_2(\text{NCO})_3 \cdot 2\text{H}_2\text{O}$
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
Supplier	Clearon Corp. 95 MacCorkle Ave. SW, South Charleston, WV 25303, USA Tel: (304) 746-3000
Emergency Telephone	Chemtrec (800)424-9300

### 2. Hazards identification

Emergency overview	<i>White granuls or tablet-form product</i> <i>Corrosive</i> <i>Causes irreversible eye damage</i> <i>May be fatal if inhaled</i> <i>Harmful if absorbed through skin or swallowed</i>
Potential Health Effects: - 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.

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**- 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.

**- 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.

**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.

### 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 advise.

**Skin contact**                      Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use.  
 Get medical attention immediately.

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<b>Inhalation</b>	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 advise.
<b>Ingestion</b>	Call poison control center, or doctor immediately for treatment advise. 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.
<b>Note to physician</b>	Probable mucosal damage may contraindicate the use of gastric lavage.

**5. Fire - fighting measures**

<b>Suitable extinguishing media</b>	Water
<b>Extinguishing media not to be used</b>	Do not use dry chemical extinguisher containing ammonia compounds.
<b>Fire fighting procedure</b>	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.
<b>Unusual fire and explosion hazards</b>	When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine and CO.

**6. Accidental release measures**

<b>Personal precautions</b>	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.
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**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.

- **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.
- **In 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 :**

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

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**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
- **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** Safety shower and eye bath should be provided. Do not eat, drink or smoke until after-work showering and changing clothes.

### 9. Physical and chemical properties

<b>Appearance</b>	White granules or tablet-form product
<b>Odour</b>	Mild chlorine-like
<b>Boiling point/range</b>	Not applicable
<b>Melting point/range</b>	Not applicable
<b>Flash point</b>	Not applicable
<b>Auto-ignition temperature</b>	Not self-ignitable
<b>Vapour pressure</b>	Not applicable under standard conditions
<b>Evaporation rate (ether=1)</b>	Not applicable under standard conditions
<b>Vapor density</b>	Not applicable under standard conditions
<b>Viscosity</b>	Not applicable
<b>Solubility:</b>	
- <b>Solubility in water</b>	24-25 mg/100ml
<b>Density</b>	Tap density = 0.974 g/mL pour density = 1.083 g/mL kg/L
<b>pH</b>	Not available
<b>Decomposition temperature</b>	Begins to lose 1 mole water at approximately 50°C; second mole water at 95°C; Decomposes at 240-250°C
<b>Partition coefficient (n-octanol/water)</b>	Log Pow - -0.0056 (estimated)
<b>Explosive properties</b>	Not available
<b>Oxidising properties</b>	Not oxidising
<b>Particle size:</b>	Non- inhalable

### 10. Stability and reactivity

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### 10. Stability and reactivity

<b>Stability</b>	Stable under normal conditions. Do not package in paper or cardboard. Begins to lose one mole of water at approximately 50°C
<b>Materials to avoid</b>	Organic materials, reducing agents, nitrogen containing materials, other oxidizers, acids, bases, oils, grease, sawdust, dry fire extinguishers containing monoammonium compounds.
<b>Conditions to avoid</b>	Heating above decomposition temperature
<b>Hazardous decomposition products</b>	Nitrogen trichloride, chlorine, carbon monoxide
<b>Hazardous polymerization</b>	Will not occur
<b>Summary of Reactivity:</b>	Oxidizer: Yes Organic Peroxide: No Pyroforic: No Water Reactive: No

### 11. Toxicological information

<b>Acute toxicity:</b>	
- 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
<b>Immediately Dangerous to Life or Health (IDLH)</b>	No level has been established for the components or the product itself.
<b>Chronic toxicity</b>	Chronic inhalation exposure may cause impairment of lung function and permanent lung damage.
<b>Mutagenicity</b>	Not mutagenic in five Salmonella strains with or without metabolic activation.
<b>Carcinogenicity</b>	Not classified by IARC, OSHA, EPA. Not included in NTP 11th Report on Carcinogens
<b>Reproductive toxicity</b>	Sodium dichloroisocyanuric acid when given orally to pregnant mice from day 6 to day 15 of gestation, did not induce any significant teratogenic effects.

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### 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

### 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.

### 14. Transportation information

**DOT**

NOT REGULATED FOR ROAD TRANSPORTATION

For Vessel only:

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

**IMO**

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

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<b>ICAO/IATA</b>	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

<b>USA</b>	All the components of this substance are listed on or are exempt from the inventory
<b>- SARA (311, 312)</b>	This product is categorized as an immediate health hazard, and fire and reactivity physical hazard
<b>- Massachusetts right-to-know list</b>	Listed
<b>- Pennsylvania right to know list</b>	Listed
<b>- Waste Classifications</b>	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.
<b>- Workplace Classification</b>	This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).
<b>EU</b>	Reported in EINECS
<b>Japan</b>	ENCS No. 5-1043X, 1-236
<b>Japanese METI</b>	ENCS Nos: 5-1043X, 1-236
<b>Australia</b>	Listed in AICS
<b>New Zealand Inventory</b>	Listed in NZIoC
<b>China inventory</b>	Listed
<b>Philippines</b>	Listed in PICCS

### 16. Other information

This data sheet contains changes from the previous version in section(s)  
2, 3, 9



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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. Additionally, if this Material Safety Data Sheet is more than three years old, you should contact Clearon at the phone number listed below to make certain that this sheet is current.

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

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**End of safety data sheet**