

MATERIAL SAFETY DATA SHEET

Product Name	CDB CLEARON	
Product id	2007	
Revision date	28/07/2003	Revision: 2
Supersedes	14/12/2000	

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; Troclosene sodium, dehydrate
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. Composition / information on ingredients

Components	Weight %	ACGIH-TLV Data	OSHA (PEL) Data
SODIUM DICHLOROISO CYANURATE, DIHYDRATE 51580-86-0	99-100	Not determined	Not determined
SODIUM CHLORIDE 7647-14-5	0-1	Not determined	Not determined

3. Hazards identification

Emergency overview	<i>Harmful if swallowed. Irritant to eyes and respiratory system.</i>
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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.
- 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.

4. First-aid measures

Eye contact	Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.
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.
Inhalation	In case of dust inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

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Ingestion If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately.

NOTE: Never give an unconscious person anything to drink.

Notes to the physician Corrosive
 No specific antidote. Treat symptomatically and supportively. In case of ingestion DO NOT induce vomiting.

Medical conditions aggravated by exposure Asthma, respiratory and cardiovascular disease.

5. Fire - fighting measures

Flash point Not applicable
Auto-ignition temperature Not applicable
Suitable extinguishing media Water
Extinguishing media not to be used Do not use dry chemical extinguisher containing ammonia compounds.
Fire fighting procedure Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) in positive pressure mode. Cool containers with water spray. 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.
Unusual fire and explosion hazards When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine and carbon monoxide.

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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.

- **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.

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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

Ventilation requirements	Use local exhaust ventilation to minimize dust and chlorine levels where industrial use occurs. Otherwise, ensure good general ventilation.
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Personal protective equipment:
A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

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|---|---|
| <ul style="list-style-type: none"> - Respiratory protection - Hand protection - Eye protection - Skin and body protection | <p>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.</p> <p>Neoprene gloves</p> <p>Use chemical safety glasses to avoid eye contact.</p> <p>Where industrial use occurs, chemical goggles may be required.</p> <p>Impervious body covering clothes, boots and neoprene apron</p> <p>Safety shower and eye bath should be provided. Do not eat, drink or smoke until after-work showering and changing clothes.</p> |
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9. Physical and chemical properties

Appearance	White granular solid or tablet-form product
Odor	Mild chlorine-like
Melting point/range	Not applicable
Boiling point/range	Not applicable
Vapour pressure	Not applicable under standard conditions
Vapor density	Not applicable under standard conditions
Evaporation rate (ether=1)	Not applicable under standard conditions
Solubility:	
- Solubility in water	25 g/100ml at 30°C
Bulk density	0.9-0.95 g/cc

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Specific gravity	0.96
pH	6-6.5 (1% solution)
Decomposition temperature	Begins to lose 1 mole water at approximately 50°C; second mole water at 95°C; Decomposes at 240-250°C

10. Stability and reactivity

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

11. Toxicological information

Acute toxicity:	
- Rat oral LD50	735 mg/kg
- Rabbit dermal LD50	>2000 mg/kg
- Rat inhalation LC50	>50 mg/m ³ /1 hour
- Eye irritation (rabbit)	Corrosive
- Dermal irritation (rabbit)	Corrosive
- Dermal sensitization --(guinea pig)	Not a sensitizer
Immediately Dangerous to Life or Health (IDLH)	No level has been established for the components or the product itself.
Target organ effects	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. There are no known or reported effects from repeated exposure. Toxicological investigation indicates it does not produce significant effects from chronic exposure.

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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 known to be a carcinogen. Not classified by IARC, OSHA, EPA. Not included in NTP 10th 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

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.
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14. Transportation information

DOT	Not regulated
IMO	Not regulated
ICAO/IATA	Not regulated

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15. Regulatory information

USA	Reported in the EPA TSCA Inventory
- Massachusetts right-to-know substance list -	Listed
- Pennsylvania right to know list	Listed
EPCRA (SARA title III)	
Sara (311, 312) hazard class	This product is categorized as an immediate health hazard, and fire and reactivity physical hazard
- 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).
EEC No.	220-767-7; 231-598-3
Japanese MITI	ENCS Nos: 5-1043X, 1-236
Australia	Listed in AICS
Philippines	Listed in PICCS

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16. Other information

This data sheet contains changes from the previous version in section(s)
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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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End of safety data sheet