



MATERIAL SAFETY DATA SHEET

Product Name **Azure Skimmer Sticks**
Product id 9716C-AZ
Revision date 23/03/2006

Revision: 1

1. Identification of the substance & the company

Chemical name Trichloro-s-triazinetriene

Synonym(s) Trichloroisocyanuric Acid; TCCA; Trichlor; Trichloro-s-triazinetriene; Symclosene

Chemical formula $C_3Cl_3N_3O_3$

Chemical family Chloroisocyanurate

Molecular weight 232.5

Type of product and use For disinfectant, sanitizers, fungicides, bactericides and algaecides for pools, spas and hot tubs

Supplier NAVA Water Products
95 MacCorkle Ave. SW, South Charleston, WV 25303, USA
Tel: (304) 746-3000

Emergency Telephone Chemtrec (800)424-9300
Medical 1-800-420-9236

2. Composition / information on ingredients

Components CAS	Weight %	ACGIH-TLV Data	OSHA (PEL) Data
Trichloroisocyanuric Acid 87-90-1	96-100	Not determined	Not determined
Dichloroisocyanuric Acid 2782-57-2	0-4	Not determined	Not determined

3. Hazards identification

Emergency overview *White granuls or tablet-form product*
Corrosive. Causes irreversible eye damage or skin burns
May be fatal if inhaled
May be fatal if absorbed through skin
Strong oxidizing agent



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Potential environmental effects The product is toxic to fish and aquatic organisms

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.
Repeated skin exposure may cause tissue destruction due to the corrosive nature of the product.

- 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 = 3, Fire = 0, Reactivity = 2.
Special Hazard Warning: OXIDIZER

HMS Ratings (Scale 0-4)

Health = 3, Fire = 0, Reactivity = 2.

4. First-aid measures

Eye contact

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Call a poison control center or doctor for treatment advise. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

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 advise.

Inhalation

Call a poison control center or doctor for further treatment advise. 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.



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Ingestion 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.

Note to physician Probable mucosal damage may contraindicate the use of gastric lavage.

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, nitrous oxides, cyanates, carbon monoxide and carbon dioxide.

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.



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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	Avoid bodily contact. Do not take internally. 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"). Product has an indefinite shelf-life limitation. Do not store at temperatures above 60°C/140°F. Available chlorine loss can be as little as 0.1% per year at ambient temperatures.

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.
Personal protective equipment:	
- 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	Body covering clothes and boots
Hygiene measures	Avoid contact with skin, eyes and clothing.



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9. Physical and chemical properties

Appearance White granuls or tablet-form product
Odor Sharp, chlorine-like, bleach odor
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 1.2 g/100ml at 25°C
Bulk density Granular-0.89-1.1 g/cc
Tablets - 1.16-1.9 g/cc
Specific gravity >1
pH 2.7-2.9 (1% solution)
Decomposition temperature 225 °C (437°F)

10. Stability and reactivity

Stability Stable under normal conditions Do not package in paper or cardboard.
NOTE: Contact with small amounts of water may result in an exothermic reaction with the liberation of toxic fumes.
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, nitrous oxides, cyanates, carbon monoxide, carbon dioxide.
Hazardous polymerization Will not occur

11. Toxicological information

Acute toxicity:
- Rat oral LD50 490 mg/kg
- Rabbit dermal LD50 >2000 mg/kg
- Rat inhalation LC50 Approx. 0.68 mg/l/4 hour - (nose only)
- Eye irritation (rabbit) Corrosive
- Dermal irritation (rabbit) Corrosive



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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.
Chronic toxicity	Prolonged exposure may cause damage to the respiratory system. Chronic inhalation exposure may cause impairment of lung function and permanent lung damage.
Mutagenicity	Not mutagenic in five Salmonella strains and one E.coli strain with or without mammalian microsomal activation.
Carcinogenicity	Not classified by IARC, OSHA, EPA. Not included in NTP 11th Report on Carcinogens.
Reproductive toxicity	There are no known or reported effects on reproductive function or fetal development. Toxicological investigation indicates it does not effect reproductive function of fetal development.

12. Ecological information

Aquatic toxicity :	
- 96 Hour-LC50, Fish	0.32 mg/l (Rainbow trout) 0.30 mg/l (bluegill sunfish)
- 48 Hour-LC50, Daphnia magna	0.21 mg/l
Avian toxicity:	
- Oral LD50, Mallard duck	1600 mg/kg
- Dietary LC50, Mallard duck	>10,000 ppm
- Dietary LC50, Bobwhite quail	7422 ppm

13. Disposal considerations



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13. Disposal considerations

Waste disposal Observe all federal, state and local environmental regulations when disposing of this material. If this product becomes waste, it will be a hazardous waste that is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.
Care must be taken to prevent environmental contamination from the use of this material.

14. Transportation information

UN No. 2468

DOT Proper shipping name: Trichloroisocyanuric Acid Dry
Class: 5.1 - Oxidizing substances
Label: OXIDIZER (5.1)
Packing Group: II
Emergency Guide No.140

IMO Proper shipping name: Trichloroisocyanuric Acid Dry
Class: 5.1 - Oxidizing substances
Label: OXIDIZING AGENT (5.1)
Packing Group: II

ICAO/IATA Label: OXIDIZER (5.1)
Class: 5.1
Packing group: II

15. Regulatory information

USA Reported in the EPA TSCA Inventory

Sara 313 Not listed
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 meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.



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- Workplace Classification	This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).
EU	Reported in EINECS
Australia	Listed in AICS
China inventory	Listed
Korea	KE-34101
Philippines	Listed in PICCS

16. Other information

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End of safety data sheet