



## MATERIAL SAFETY DATA SHEET

<b>Product Name</b>	<b>3" Chlorinating Tablets</b>	
<b>Product id</b>	9716-3C	
<b>Revision date</b>	21/11/2010	<b>Revision: 4</b>
<b>Supersedes</b>	01/11/2009	

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

<b>Chemical name</b>	Trichloro-s-triazinetriene
<b>Synonym(s)</b>	Trichloroisocyanuric Acid; TCCA; Trichlor; Trichloro-s-triazinetriene; Sycmclose
<b>Chemical formula</b>	$C_3Cl_3N_3O_3$
<b>Chemical family</b>	Chloroisocyanurate
<b>Molecular weight</b>	232.5
<b>Type of product and use</b>	For disinfectant, sanitizers, fungicides, bactericides and algacides for pools, spas and hot tubs
<b>Supplier</b>	NAVA Water Products 95 MacCorkle Ave. SW, South Charleston, WV 25303, USA Tel: (304) 746-3000
<b>Emergency Telephone</b>	Chemtrec (800)424-9300 Medical 1-800-420-9236

### 2. Hazards identification

<b>Emergency overview</b>	<i>White granuls or tablet-form product</i> <i>Oxidizer</i> <i>Corrosive to eyes, skin and mucous membranes.</i> <i>Harmful by inhalation and if swallowed.</i>
<b>Potential Health Effects:</b>	
- <b>Eye Contact</b>	Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.
- <b>Skin contact</b>	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.



## MATERIAL SAFETY DATA SHEET

**Product Name** 3" Chlorinating Tablets  
**Product id** 9716-3C  
**Revision date** 21/11/2010 **Revision: 4**  
**Supersedes** 01/11/2009

**- 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

**HMIS Ratings (Scale 0-4)** Health = 3, Fire = 0, Reactivity = 2

### 3. Composition / information on ingredients

Components	CAS No.	Weight %
Trichloroisocyanuric Acid	87-90-1	96-100
Dichloroisocyanuric Acid	2782-57-2	0-4

### 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** 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** 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.



## MATERIAL SAFETY DATA SHEET

<b>Product Name</b>	<b>3" Chlorinating Tablets</b>	
<b>Product id</b>	9716-3C	
<b>Revision date</b>	21/11/2010	<b>Revision: 4</b>
<b>Supersedes</b>	01/11/2009	

**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.

### 5. Fire - fighting measures

**Suitable extinguishing media** CO<sub>2</sub>, dry chemical or foam.

**Extinguishing media not to be used** Reacts with various metal powders, with risk of fire and explosion.

**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.

**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.



## MATERIAL SAFETY DATA SHEET

**Product Name** 3" Chlorinating Tablets  
**Product id** 9716-3C  
**Revision date** 21/11/2010  
**Supersedes** 01/11/2009

**Revision: 4**

- **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

#### Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
Trichloroisocyanuric Acid 87-90-1	Not determined	Not determined
Dichloroisocyanuric Acid 2782-57-2	Not determined	Not determined



## MATERIAL SAFETY DATA SHEET

**Product Name** 3" Chlorinating Tablets  
**Product id** 9716-3C  
**Revision date** 21/11/2010  
**Supersedes** 01/11/2009

**Revision: 4**

**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.

### 9. Physical and chemical properties

**Appearance** White granules or tablet-form product  
**Odour** Sharp, chlorine-like bleach odour  
**Boiling point/range** Not applicable  
**Melting point/range** Not applicable  
**Flash point** Not applicable  
**Auto-ignition temperature** Not applicable  
**Vapour pressure** Not applicable under standard conditions  
**Evaporation rate (ether=1)** Not applicable under standard conditions  
**Vapor density** Not applicable under standard conditions  
**Solubility:**  
**Bulk density** Granular-0.89-1.1 g/cc  
Tablets - 1.16-1.9 g/cc  
**Specific gravity** >1  
**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



## MATERIAL SAFETY DATA SHEET

Product Name **3" Chlorinating Tablets**  
Product id 9716-3C  
Revision date 21/11/2010  
Supersedes 01/11/2009

Revision: 4

### 11. Toxicological information

#### Acute toxicity:

- Rat oral LD50 809 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

#### 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 affect reproductive function or 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



## MATERIAL SAFETY DATA SHEET

**Product Name** 3" Chlorinating Tablets  
**Product id** 9716-3C  
**Revision date** 21/11/2010  
**Supersedes** 01/11/2009

**Revision: 4**

### 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: Oxidizing substances (5.1)  
Packing Group: II  
Emergency Guide No.140

Note: Inner packages containing 2.2 pounds [1kg] or less are renamed "Consumer Commodity" and reclassified as "ORM-D". Labeling and placarding are not required for these shipments.

**IMO** Proper shipping name: Trichloroisocyanuric Acid Dry  
Class: 5.1 - Oxidizing substances  
Label: Oxidizing substances (5.1)  
Packing Group: II  
Mark: MARINE POLLUTANT

**ICAO/IATA** Proper shipping name: Trichloroisocyanuric Acid Dry  
Label: Oxidizing substances (5.1)  
Class: 5.1  
Packing group: II  
Marking: Environmentally hazardous substance

### 15. Regulatory information

**USA** Reported in the EPA TSCA Inventory.  
**- SARA 313** Not listed



## MATERIAL SAFETY DATA SHEET

**Product Name** 3" Chlorinating Tablets  
**Product id** 9716-3C  
**Revision date** 21/11/2010  
**Supersedes** 01/11/2009

**Revision: 4**

**- SARA (311, 312)** 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.

**- 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

**This data sheet contains changes from the previous version in section(s)**

11

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, NAVA Water Products 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 NAVA Water Products 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 MSDS and the English version of it, the English version shall prevail.*

**End of safety data sheet**