



MATERIAL SAFETY DATA SHEET

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|---------------|-------------------------------------|-------------|
| Product Name | Azure Quick Dissolving Shock | |
| Product id | 2007PB-AZ | |
| Revision date | 05/12/2006 | Revision: 2 |
| Supersedes | 23/03/2006 | |

1. Identification of the substance & the company

| | |
|-------------------------|--|
| Chemical name | Sodium dichloroisocyanurate, dihydrate |
| Synonym(s) | Sodium dichlor; Sodium dichloroisocyanurate, dihydrate; Sodium dichloro-s-triazinetriene dihydrate; 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 disinfectant, sanitizers, fungicides, bactericides and algacides 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 |
|--|----------|----------------|-----------------|
| SODIUM DICHLOORISO CYANURATE, DIHYDRATE 51580-86-0 | 99-100 | Not determined | Not determined |
| SODIUM CHLORIDE 7647-14-5 | 0-1 | Not determined | Not determined |



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3. Hazards identification

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| Emergency overview | <i>White granuls or tablet-form product</i> <i>Corrosive. Causes irreversible eye damage</i> <i>May be fatal if inhaled</i> <i>Harmful if absorbed through skin or swallowed</i> <i>Strong oxidizing agent</i> |
| 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. 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. |



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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. |
| Ingestion | Call poison control center, or doctor immediately for treatment advise. 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

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|------------------------------------|---|
| 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 | 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. Cool containers with water spray. Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) in positive pressure mode |
| Unusual fire and explosion hazards | When heated to decomposition, may release poisonous and corrosive fumes of nitrogen trichloride, chlorine and CO. |



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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.

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.

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.

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

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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. |
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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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|-----------------------------------|--|
| - 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

| | |
|-----------------------------------|--|
| Appearance | White granuls 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

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|---|--|
| 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

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|------------------------------|-------------------------------|
| 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 | Not a sensitizer |

Immediately Dangerous to Life or Health (IDLH) No level has been established for the components or the product itself.

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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. |
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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 included in NTP 11th Report on Carcinogens. Not classified by IARC, OSHA, EPA. |
| 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

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|--------------------------------|---|
| 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

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| 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

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| DOT | Not regulated |
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15. Regulatory information

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

16. Other information

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

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Revision: 2

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 NAVA Water products at the phone number listed below to make certain that this sheet is current.

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End of safety data sheet