

**AQUAPULSE**  
**S Y S T E M S**

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EPA Approved Uses for

Item Numbers

BT01

IP20

DT20

BBT01



# DUTRION TABLET

To be used for generation of Dutrion Chlorine Dioxide 0.2%.

**DEODERANT / FUNGISTATIC / ALGAESTATIC / MILDEWSTATIC**

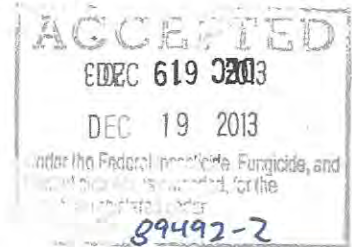
When used as directed, this one component tablet, chlorine dioxide generating product is proven effective as a deodorizer, fungistat, mildewstat, algaestat.

**KEEP OUT OF REACH OF CHILDREN  
DANGER**

(see additional precautionary statement on back panel)

**Active Ingredient:**

**Sodium Chlorite**..... 20 %  
**Other Ingredients:** ..... 80 %  
**Total:** ..... 100 %



To be used for generation of Dutrion Chlorine Dioxide 0.2% (see mixing instructions). Prepare with clean water identified on package

FIRST AID
<b>If in eyes:</b> 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 advice.
<b>If on Skin or Clothing:</b> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
<b>If Swallowed:</b> Call poison control center or doctor immediately for treatment advice. 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>If Inhaled:</b> Remove victim to fresh air. If person is not breathing, call 911 or an ambulance. Then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for treatment advice. Get medical attention.
<b>Hot line number:</b> Have the product packaging or label with you when calling the poison control center or doctor, or going for treatment. You may contact +31 88 0333 003 for emergency medical treatment information.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

EPA REG. No. 89492-2

EPA EST. No. 90133-CHN-001

## Precautionary Statements

### **HAZARDS TO HUMANS & DOMESTIC ANIMALS:**

**Danger: DRY ingredients.** Corrosive. Causes irreversible eye damage and causes skin burns. Do not get in eyes or on clothing. May be fatal if swallowed. Wear chemical resistant gloves. Wear protective eyewear (goggles, face shield or safety glasses) when handling dry ingredients. Wear coveralls worn over long-sleeved shirt and long pants. Chemical-resistant footwear and socks must be worn. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse.

**ACTIVATED solution:** May be fatal if swallowed. Do not get in the eyes or on clothing. Avoid contact with skin. Avoid breathing vapors. Wash thoroughly with soap and water after handling and before eating, drinking, chewing-gum, using tobacco or using the toilet. People must vacate the premises during any treatments; a one-hour restricted entry interval (REI) is required.

### **ENVIRONMENTAL HAZARDS:**

This product is toxic to fish, aquatic invertebrates, oysters, and shrimp. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

**PHYSICAL OR CHEMICAL HAZARDS:** Dry sodium chlorite is incompatible with acids, reducing agents, combustible materials, sulphur-containing rubber, solvents and paints. Keep Dutrion solution from light and heat. Chlorine dioxide gas may concentrate in open space of container after the Dutrion Tablet(s) have been added to the starting water. Always dilute activated product in a well-ventilated area.

**NOTE:** For use in the institutional or commercial applications discussed below. Not for residential use.

## **DIRECTIONS FOR USE:**

### **Storage and disposal**

Do not contaminate water, food, or feed by storage or disposal.

### **Storage:**

Store in original, tightly-closed container in area inaccessible to children or persons unfamiliar with use and away from food or feed. Keep tightly closed until ready to use. Store in original, unopened containers at or below 25 °C (77°F). This product has a minimum shelf life of 12 months after date of shipment.

### **Pesticide Disposal:**

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray, mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to the label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Plastic Container Handling:**

NON REFILLABLE PAIL OR JAR: Triple rinse as follows: Empty the remaining contents into application equipment of a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### **Paper and Plastic Bag Handling:**

DO NOT REUSE BAGS. Completely empty bag into application equipment. Discard bags in trash.

When used as directed, this product is an effective deodorant, fungistat, algastat, and mildewstat agent and general purpose antimicrobial. For all applications, clean surfaces before using product. Apply by mop, sponge, any dosing device or sprayer, ensuring visible wetness for times specified for these applications, or apply through immersion or clean-in-place application. Wear a NIOSH/MHSA approved respirator appropriate for chlorine dioxide when using a high-pressurized sprayer.

It is a violation of Federal Law to use this product in a manner inconsistent with the labeling. Contains a 0.4% chlorine dioxide oxidizing agent. Add Dutton Powder components A & B to clean water only. Do not mix both Powder components with vinegar, hydrochloric, nitric or acetic acid or cleaning agents.

## **WARRANTY STATEMENT**

The Company warrants the product to be free from defects in material and workmanship. THE COMPANY MAKES NO WARRANTY THAT THE GOODS SHALL BE MERCHANTABILITY. THE COMPANY MAKES NO WARRANTY, EXPRESSED OR IMPLIED, EXCEPT SUCH AS IS EXPRESSLY SET FORTH HEREIN. The Company shall not be liable for any incidental or consequential damages for any breach of warranty. The Company's liability for any breach of warranty shall be limited to the purchase price of the product.



**Preparation of a Dutrion 2,000 ppm chlorine dioxide concentrate (= 0.2%)**

Per 1000 ml of clean water use 20 gram of Dutrion Tablet. Prepare chlorine dioxide stock solution always with full packages. Use only Dutrion Tablet and clean water. Fill qualified container first with desired amount of clean water by multiplying weight of package Dutrion Tablet times 50.

Diluting ratio: 50 parts water X 1 part Dutrion Tablet (by weight)

Tablet size	Clean Water volume	Clean Water Volume	PPM Chlorine Dioxide solution
1 gram	50 ML	1.70 Oz	2000

Follow steps 1-3 from "Mixing Instruction for Dutrion Tablet"

**MIXING instructions for: chlorine dioxide solution with Dutrion Tablet**

The tablets and the liquid solution must be handled with care and all procedures must be followed according to the product label and the MSDS.

**General Safety Guidelines**

- Read MSDS GUIDELINES of DUTRION Tablet first
- Be aware of off-gassing and never dose tablets in open containers or buckets
- Use safety gear (respirator, goggles and gloves)
- Maintain ventilation in room during preparation and storage
- Ask questions to your supplier before opening the foils
- Follow the steps below to make the right amount of stock solution

**Preparation of the stock solution**

- Always read the MSDS and product label and handle according the safety instructions
- Write the date of production on the label of the container

**Step 1:**

- Fill qualified container for chlorine dioxide solution with exactly the amount of potable water
- Find the temperature of the water in the container (optimum is 20 degree Celsius)

**Step 2:**

- Add slowly all contents in the foil package to the amount of water in the container;  
*Do not inhale above open foils and do not inhale above open container*
- Close container quick and tightly
- Do not stir or mix the water or shake the container
- Wait according to timetable instructions:

**Step 3:**

- After reaction time; shake small containers gently, or stir/mix larger containers slowly
- Always be aware of CLO2 fumes during this mixing
- Stock solution with liquid chlorine dioxide is now ready for dosing.
- Store in cool, dark and vented room

WATER TEMP	FULL REACTION TIME	COMMENTS
40 °C / 104 °F	< 10 minutes	MAXIMUM TEMP.
30 °C / 86 °F	< 20 minutes	-----
20 °C / 68 °F	< 30 minutes	OPTIMUM TEMP.
10 °C / 50 °F	> 60 minutes (up to 6 hrs)	LONGER REACTION TIME

**1. GENERAL ALGAESTAT AND FUNGISTAT FOR HORTICULTURAL AND GREENHOUSE APPLICATIONS:**

For horticultural applications, this product may be used at (100ppm/10 minutes or 50 ppm/20 minutes or 20 ppm/30 minutes) on hard, non-porous surfaces; to treat, control, and prevent fungi (5ppm/1 hour) attendant slimes, rusts and leaf spot; and to remove slimes (50 ppm/12 hours-overnight) and inhibit re-emergence (max.1 ppm continuous treatment) in irrigation and other potable water systems. Beginning with a 2,000 ppm solution: for 100 ppm, use a dilution device or sprayer with a 1:20 dilution (or 1 part solution to 19 parts of water); for 50 ppm, use a 1:40 dilution (1 part solution to 39 parts water); for 20 ppm, use a 1:100 dilution (1 part solution to 100 parts water); for 5 ppm, use a 1:400 dilution (1 part solution to 400 parts water); for 1 ppm, use a 1:2,000 dilution (1 part solution to 2,000 parts water). Concentrations and contact times are application specific.

**2. APPLICATIONS FOR NON-POTABLE WATER SYSTEMS IN HORTICULTURAL SETTINGS:**

This product may be used to reduce microbial populations in non-potable water used with cut flowers to minimize microbial transfer from water to flower, thereby maintaining freshness and extending shelf-life of cut flowers. Make up Dutrion per label instructions to produce a 2,000 concentrate. To create a 5 ppm solution, use 1 part Dutrion concentrate and 400 parts clean water.

**3. INDUSTRIAL COOLING TOWER WATER TREATMENT**

For control of bacterial slime and algae in industrial re-circulating cooling systems, the required dosages will vary depending on the exact application and degree of contamination present. The required Dutrion residual concentrations range between 0.1 and 5.0 ppm. Dutrion may be applied either continuously or intermittently. The typical Dutrion residual concentration range is 0.1 – 1.0 ppm for continuous doses, and 0.1 – 5.0 ppm for intermittent doses. The minimum acceptable residual concentration of Dutrion is 0.1 ppm for a minimum one minute contact time.

**4. DIRECTION FOR USE IN WATER DISTRIBUTION SYSTEM**

Flush the water distribution system with Dutrion to wash off organic matter and algae. Back wash the water distribution system to increase yield and reduce turbidity. Use a Dutrion solution of 20 ppm as the backwash. After treating the water distribution system and completing the backwash add sufficient Dutrion solution to maintain a residual of up to 2.0 ppm. Use a chlorine dioxide test kit to monitor the residual level. Re-treat water distribution system if water samples are becoming biologically unacceptable. Begin by making up Dutrion as per the label instructions to produce a 2,000 ppm concentrate. Dilute Dutrion down to the required level between 20 ppm (1:100) and 1.0 to 2.0 ppm (1:2,000 to 1:1,000) to create a working solution. Residual disinfectant and disinfection by products must be monitored as required by the National Primary Drinking Water Regulations (40CFR Part 141) and State Drinking Water Standards.

**5. OIL & GAS INDUSTRY APPLICATIONS**

Dutrion is effective in the elimination of bacterial and sulphide contamination commonly found in down hole wells, oil field production, injection and disposal fluids, separators and pipelines. Eliminates odors caused by bacteria such as "iron eating bacteria" and bacteria that cause odor problems associated with hydrogen sulphide gas. The required dosage levels will vary according to site-specific conditions. Dutrion may be applied intermittently or continuously to oil well production water at the point where it is separated from oil, and prior to re-injection back into the well. For continuous feed, for oxidation of sulphides to sulphates and for biological control apply Dutrion at a dosage level slightly higher than the oxidative demand as determined by a demand study. For intermittent treatment, a dosage rate of 200 to 2,000 ppm. Begin by making up Dutrion as per label instructions to produce a 2,000 ppm stock solution. Dilute Dutrion down to the required level between 2,000 and 200 ppm to create a final working solution.

#### **6. DEODORIZING GARBAGE CANS AND WASTE BINS**

Make up Dutral as per label instructions to produce a 2,000 ppm stock solution. Dilute as necessary to make up a working solution of 200 ppm. If diluting by hand, use 1 part Dutral to 9 parts clean water. Clean before deodorizing garbage can, diaper pail, pet place or waste bin and rinse with potable water. Drain. Spray in working solution Dutral. Allow to stand for 2 minutes. Air dry. Repeat as necessary.

#### **7. FOAM SOLUTION**

To eliminate algae and odors caused by mold and mildew on surfaces in dark damp areas. Begin by making up Dutral as per the label instructions to produce a 2,000 ppm concentrate. Dilute Dutral down to a level of 100 to 200 ppm depending on the degree of odor control required to create a working solution. Add 1 part Dutral to 19 part clean water to produce a 100 ppm working solution; add 1 part Dutral to 9 parts water to produce a 200 ppm working solution.

#### **8. FOR USE IN INCUBATOR HUMIDIFICATION SYSTEMS**

Make up Dutral concentrate per label instructions of 2,000 ppm. For manual dilution: Dilute to a solution of 1.0 ppm by adding 1 part Dutral to 2,000 parts water. For automated dilution: use dosing pump at 1:2,000 to inject Dutral into humidification water supply.

#### **9. IRON AND MANGANESE REMOVAL**

Begin by making up Dutral as per the label instructions to produce a 2,000 ppm concentrate. Dilute Dutral down to the required concentration depending on the measured pH levels and remaining within the limits of all local, state and Federal Regulations for discharge. Precipitate both elements according to the following: inorganic compounds in a soluble state – 1.0 ppm manganese removed for every 2.45 ppm of Dutral above pH 7. 1.0 ppm iron removal for every 1.2 ppm of Dutral above pH 5.

#### **10. PHENOL DESTRUCTION**

Must stay within all local, state and Federal Regulations for discharge. 1.0 ppm of phenol removed for 1.5 ppm of Dutral above pH 10 to Benzoquinone. 1.0 ppm of phenol removed for 3.3 ppm of Dutral below pH 10 to Carboxylic Acids. Begin by making up Dutral as per the label instructions depending on the measured pH levels.

#### **11. CYANIDE DESTRUCTION**

Must stay within all local, state and Federal Regulations for discharge. 1.0 ppm of Cyanide Ion removed for 2.5 ppm Dutral below pH 10 to Cyanate. Continuous treatment rate at 0.1 to 1.0 ppm. Intermittent treatment rate at 0.1 – 5.0 ppm. System dependant. Begin by making up Dutral as per the label instructions to produce a 2,000 ppm concentrate. Dilute Dutral down to the required concentration depending on the measured pH levels.

#### **12. SLIME CONTROL IN PAPER MILLS**

Dutral is effective for use in controlling microbiological growth in water used in paper mills. Dosages may vary with the degree of microbiological and process contamination present. Depending on the specific requirements of the system, apply Dutral continuously or intermittently to achieve a chlorine dioxide residual concentration between 0.1 and 5.0 ppm. Repeat intermittent treatments as required to maintain control. Must stay within all local, state and Federal Regulations for discharge. 1.0 ppm of Aliphatic Amines removed for 10.0 ppm of Dutral at pH 4.5 to 9.0. 1.0 ppm of secondary aliphatic Amines removed for 5.0 ppm of Dutral above a pH of 7.0. Begin by making up Dutral as per the label instructions to produce a 2,000 concentrate. Dilute Dutral down to the required concentration level depending on the measured pH levels.

#### **13. AGRICULTURAL IRRIGATION AND FUNGICIDE**

Dutral is used in the irrigation system as algaestat and fungistat in horticultural and viticulture applications. Make up Dutral per label instructions to create a 4,000 ppm concentrate. Dilute Dutral concentrate (1:20,000 – 1:40,000) to prepare 0.1 – 0.2 ppm working solution and apply in the irrigation water.



#### **14. WELL WATER TREATMENT**

Flush the well casing with Dutrion to wash off organic matter and algae. Back wash the well to increase yield and reduce turbidity. Use a Dutrion solution of 20 ppm as the backwash. After treating the casing and completing the backwash add sufficient Dutrion solution to maintain a residual of up to 2.0 ppm. Use a chlorine dioxide test kit to monitor the residual level. Re-treat well if water samples are becoming biologically unacceptable. Begin by making up Dutrion as per the label instructions to produce a 2,000 ppm concentrate. Dilute Dutrion down to the required level between 20 ppm (1:100) and 1.0 to 2.0 ppm (1:2,000 to 1:1,000) to create a working solution. Residual disinfectant and disinfection by products must be monitored as required by the National Primary Drinking Water Regulations (40CFR Part 141) and State Drinking Water Standards.

#### **15. HYDROGEN SULPHIDE SCAVENGING**

Dutrion is an effective scavenger of hydrogen sulphide, whether the hydrogen sulphide is in a gaseous state or dissolved in water. Dutrion is also a powerful scavenger of inorganic or organic sulfides. Dutrion can be used in low temperature applications and in high temperatures (max. 160 °F). It is non corrosive to equipment and does not form chlorinated hydrocarbons. The dosage rate varies with each location and local criteria. Determination of the optimum dosage level requires site-specific trials. The average dosage rate is approximately 2.0 ppm. Make up Dutrion as per label instructions to create a 2,000 ppm concentrate. Dilute (1:1,000) to 2.0 ppm in the target water.

#### **16. NOX REDUCTION AND EMISSION SCRUBBING**

NOX is a precursor to ozone in the atmosphere, and is believed to be a major contributor to acidic deposition (acid rain). NOX is produced in a variety of different processes, including combustion equipment, gas turbines, incinerators, kilns and power plants. Dutrion can be used in a wet removal (stack scrubber) process. The use of stoichiometric amounts of chlorine dioxide eliminates approximately 95% of the NO in the gas, in concentrations of up to at least 24 ppm in short time. Make up Dutrion per label instructions to create a 2,000 ppm concentrate. Dilute to the required dosage level in the scrubber system water for the specific application as per manufacturer's instructions.

### **Directions for Use for Farm Premises**

1. Do not use in milking stalls, milking parlors, or milk houses Remove all animals and feed from premises, vehicles, and enclosures.
2. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes, and other facilities and fixtures occupied or traversed by animals.
3. Empty all troughs, racks, and other feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
5. Saturate all surfaces with the recommended disinfecting solution for a period of 10 minutes.
6. Immerse all halters, ropes, and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure.
7. Ventilate buildings, cars, boats, and other closed spaces. Do not house livestock or employ equipment until treatment has been absorbed, set, or dried.
8. Thoroughly scrub all treated feed racks, mangers, troughs, automatic feeders, fountains, and waterers with soap or detergent, and rinse with potable water before reuse.

#### **EPA Registrant information:**

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