

norweco[®]

BIO-NEUTRALIZER[®]

DECHLORINATION TABLETS

GENERAL SPECIFICATIONS

Bio-Neutralizer dechlorination tablets shall be formulated and produced to chemically neutralize both free and combined chlorine in water, wastewater and process water treatment systems. Bio-Neutralizer tablets shall be engineered to dissolve slowly and evenly, maintaining effluent quality without any loss of dissolved oxygen or increase in BOD₅. The tablets shall be 2⁵/₈" diameter, compressed to 1³/₁₆" thickness with an approximate weight of 5 oz. and incorporate beveled edges to stabilize chemical release and to minimize maintenance requirements. Sulfur dioxide gas or liquid sodium metabisulfite systems create serious health hazards and handling concerns and therefore shall not be considered for this application.

TABLET PROPERTIES AND USAGE

When used as directed, Bio-Neutralizer dechlorination tablets shall provide an environmentally safe dose of sodium sulfite capable of neutralizing free and combined chlorine present in treated water, wastewater or process water. Research shows that high concentrations of sodium sulfite will degrade beneficial dissolved oxygen in receiving environments, producing harmful effects on the ecosystem. Bio-Neutralizer tablets shall provide consistent reduction or elimination of residual chlorine without affecting water quality, dissolved oxygen or other discharge parameters. A unique combination of sustained release agents and sodium sulfite shall maintain a consistently uniform application rate regardless of flow, temperature or humidity. Bio-Neutralizer dechlorination tablets shall generally lower chemical consumption and provide reliable reduction of chlorine residual in a more thorough, safe and economical manner than simple compressed sodium sulfite. Therefore, the use of other tablets of similar composition shall not be considered for this application.

PRODUCT APPLICATION

The 2⁵/₈" diameter by 1³/₁₆" thick Bio-Neutralizer tablets shall be effective in the reduction or elimination of residual chlorine without releasing excess quantities of sodium sulfite into the receiving environment. Bio-Neutralizer tablets shall maintain a consistent application rate at intermittent peak flow factors as high as four and shall provide reliable reduction of residual chlorine even when the significant runoff period is six hours. Bio-Neutralizer tablets shall be considered non-hazardous under U.S. Department of Transportation (DOT), U.S. Environmental Protection Agency (USEPA), RCRA, CERCLA and SARA Title III listings and consist solely of commercial grade or technical grade ingredients. The following is a list of some common applications where Bio-Neutralizer dechlorination tablets may be utilized: home wastewater treatment plants, municipal wastewater plants, septic tanks – sand filters, extended aeration plants, wastewater treatment lagoons, package wastewater treatment systems, spray irrigation systems, potable water filtration backwash, municipal water plants and water towers.

DESIGN DATA

| | | | |
|---------------------------|--|----------------------------|-----------------------------|
| Tablet Size | 2 ⁵ / ₈ " diameter, 1 ³ / ₁₆ " thick | Inert Ingredient Content | 65% |
| Approximate Tablet Weight | 5 oz. (140 grams) | U.S. DOT Hazard Class | Non-hazardous |
| Active Ingredient | Sodium Sulfite – Na ₂ SO ₃ | Appearance Characteristics | Green Tablet with Mild Odor |
| Active Ingredient Content | 35% | Special Design Features | Beveled Edges |

SPECIAL INSTRUCTIONS

Read the entire product container label, the Material Safety Data Sheet and the Bio-Neutralizer Safety and Tablet Properties and Usage instructions before handling or use. Always wear rubber gloves and either safety goggles or a face shield when handling Bio-Neutralizer tablets or working with a tablet feeder or chemical feed tube. Refer to tablet feeder manufacturer's instructions to determine the correct number of tubes to fill with Bio-Neutralizer tablets. Store Bio-Neutralizer dechlorination tablets only in their tightly sealed original container. Do not store in direct sunlight or areas where temperature may exceed 140° F. Bio-Neutralizer dechlorination tablets are a strong reducing agent containing sodium sulfite. Contact with oil, petroleum products or oxidizing agents, such as Bio-Sanitizer disinfecting tablets or any tablet used for chlorination, is extremely dangerous. Do not mix with swimming pool chemicals. Bio-Neutralizer dechlorination tablets should be stored in a cool, dry, well-ventilated area for maximum shelf life. To prevent moisture contamination, exercise care when removing tablets from the container or filling feed tubes. Avoid contact with skin, eyes, mouth, respiratory system or clothing.

PRODUCT STORAGE

Bio-Neutralizer dechlorination tablets are a strong reducing agent. Tablets should be stored in a cool, dry, well-ventilated area, away from heat or flame. Avoid storage in areas subject to direct sunlight or temperature in excess of 140° F. Stock should be rotated on a first-in, first-out basis. Bio-Neutralizer dechlorination tablets must be stored in their original container with lid tightly closed. Do not allow moisture to enter the pail during storage or while removing tablets for use. Moisture contamination may affect tablet integrity and performance. Do not reuse the empty container.

SAFETY INSTRUCTIONS

Before handling Bio-Neutralizer tablets, carefully read the container label and the Product Storage, Tablet Handling, Caution and First Aid sections of these instructions. Do not add Bio-Neutralizer tablets to a feed tube containing any other product, particularly oil and petroleum products or swimming pool chlorine. Such action may cause a violent reaction leading to fire or explosion. Do not contaminate food or feed during the use, storage or disposal of Bio-Neutralizer tablets or the cleaning of chemical feed equipment. Always wear rubber gloves and either safety goggles or a face shield when handling Bio-Neutralizer tablets or working with any tablet feeder or feed tube. Avoid contact with skin, eyes, mouth, respiratory system or clothing. Keep this product only in its tightly closed original container. Store only in a cool, dry, well-ventilated area.

TABLET HANDLING

Use only clean, dry utensils. Do not add Bio-Neutralizer dechlorination tablets to any device containing remnants of any other product – contact with oxidizers, such as Bio-Sanitizer disinfecting tablets or any other tablets used for chlorination can cause fire and the release of toxic gas. Read the entire Bio-Neutralizer tablet container label and these instructions carefully before handling this product. Use only in well-ventilated areas. Bio-Neutralizer tablets are not rated a hazardous substance by the U.S. DOT or USEPA, but necessary care should be taken in the use and handling of the tablets. Collected material can be dissolved in water, exercising caution as the solution can get hot. Dispose of dissolved material in any appropriate industrial waste collection system. Consult local, state and federal regulatory agencies before disposing of any material.

FEED TUBE LOADING INSTRUCTIONS

1. Remove feed tube from dispenser housing.
2. Remove protective cap from feed tube; place cap in a clean, dry area.
3. Remove any tablet residue by gently tapping feed tube on concrete or stone surface. If tablets other than Bio-Neutralizer have been used, rinse tube and cap with fresh water until clean and allow to dry before proceeding.
4. Hold tube, slotted end up, at a 45° angle and slide Bio-Neutralizer dechlorination tablets into the tube, one tablet at a time.
5. Ensure that all tablets lie flat, on top of one another, in the feed tube.
6. Use your gloved hand to retain tablets inside the open end of the inverted tube while filling.
7. Carefully return tube to upright position.
8. Replace the cap securely.
9. Place tube back into housing, slotted end down.
10. Be sure feed tube is fully engaged and rests evenly on the floor of the housing.
11. If the tablet feeder incorporates multiple feed tubes, consult the manufacturer's instructions to determine the correct number of tubes to be filled and their placement.



CAUTION

Do not mix Bio-Neutralizer dechlorination tablets with acids or oxidizing agents such as Bio-Sanitizer disinfecting tablets or other tablets used for chlorination – fire or explosion could result. Keep out of the reach of children. Avoid contact with skin, eyes, mouth, respiratory system or clothing – failure to do so may cause irritation on contact. Wear rubber gloves and either safety goggles or a face shield when handling this product. Product will form sodium sulfide at 600° C. At 900° C sulfur dioxide is formed. Inert ingredients could support combustion. Use self-contained breathing apparatus for fire fighting.

FIRST AID INSTRUCTIONS

If contact with skin occurs, wash with water for 15 minutes. If irritation persists, seek medical attention.
If eye contact occurs, flush with water for at least 15 minutes. Get immediate medical treatment.
If swallowed, promptly drink large quantities of water or milk. Induce vomiting. Avoid alcohol. Call physician immediately.
If inhaled, move victim to fresh air. If difficulty in breathing persists, get immediate medical attention.
In case of fire, immediately evacuate the area and notify the fire department.

MATERIAL SAFETY DATA SHEET

BIO-NEUTRALIZER® DECHLORINATION TABLETS

EMERGENCY TELEPHONE: (800) 424-9300

CHEMTREC #16012

DATE PREPARED: JANUARY 2012

NOTE: THIS PRODUCT IS NOT RATED A HAZARDOUS MATERIAL BY THE U.S. DEPARTMENT OF TRANSPORTATION OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY. THE FOLLOWING DATA IS FOR INFORMATIONAL PURPOSES ONLY.

I. PRODUCT IDENTIFICATION

| | |
|------------------------------|--------------------------------------|
| TRADE NAME | Bio-Neutralizer® |
| CHEMICAL | Sodium Sulfite |
| CHEMICAL ABSTRACT SYSTEM NO. | CAS #7757-83-7 |
| CHEMICAL DESCRIPTION | Reducer |
| FORMULA | Na ₂ SO ₃ |
| U.S. DOT SHIPPING NAME | Non-hazardous tablets, Item NM503401 |
| U.S. DOT HAZARD CLASS | Non-hazardous |

II. INGREDIENTS

| | |
|---------------------------|---|
| HAZARDOUS INGREDIENTS | None |
| NON-HAZARDOUS INGREDIENTS | Sodium Sulfite 35% |
| | Inert Ingredients 65% (Includes sustained release agents) |

III. PHYSICAL DATA

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|---|-----------------------------|
| BOILING POINT AT 760 mm Hg | Decomposes at 900° C |
| FREEZING/MELTING POINT | Not Applicable |
| SOLUBILITY IN H ₂ O; % BY WEIGHT | 25% at 80° C |
| SPECIFIC GRAVITY OF TABLET | 2.63 (H ₂ O = 1) |
| APPROXIMATE TABLET DENSITY | 125 lbs./ft ³ |
| pH OF SOLUTION | Alkaline |
| VOLUME % VOLATILE | Not Applicable |
| APPEARANCE AND ODOR | Green Tablet with Mild Odor |

IV. FIRE AND EXPLOSION DATA

| | |
|----------------------------------|---|
| FLASH POINT | Not Applicable |
| FLAMMABLE LIMITS IN AIR | Not Applicable |
| EXTINGUISHING MEDIA | Use extinguishing media appropriate for burning material. Compatible with water fog, spray foam or CO ₂ . |
| SPECIAL FIRE FIGHTING PROCEDURES | NIOSH/MSHA-Approved, positive pressure, self-contained breathing apparatus with full face piece. |
| UNUSUAL FIRE & EXPLOSION HAZARD | At 600° C, Sodium Sulfide is formed. At 900° C, Sulfur Dioxide is formed. Inert ingredients could support combustion by burning, yielding carbon dioxide and water. Use self-contained breathing apparatus for fire fighting. |

V. HEALTH HAZARD DATA

ACUTE TOXICITY DATA (ANIMAL)

| | |
|------------------|---|
| LC 50 INHALATION | See effects of overexposure. |
| LD 50 ORAL | 2825 MG/KG (Rabbit) |
| LD 50 DERMAL | See effects of overexposure. |
| LC 50 AQUATIC | Very high concentrations will chemically deplete dissolved oxygen necessary for aquatic life. |

CHRONIC TOXICITY

Sodium Sulfite may cause allergic reactions in sensitive individuals. Contact with strong acids or high temperatures may generate Sulfur Dioxide, which is toxic, corrosive and hazardous.

VI. EFFECTS OF OVEREXPOSURE

PERMISSIBLE No permissible exposure limits have been established by OSHA.

ACUTE

| | |
|------------|--|
| INHALATION | Inhalation of product dust or solution may cause respiratory tract irritation. |
| EYE | Dust or solution may burn eyes on contact. |
| SKIN | Product dust or solution may result in skin irritation upon prolonged contact. |
| INGESTION | Ingestion may irritate gastrointestinal tract. Toxic if taken in large doses. |

VII. EMERGENCY AND FIRST AID PROCEDURES

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|---------------------|--|
| INHALATION | Remove to fresh air. If not breathing, resuscitate and administer oxygen if readily available. Seek medical attention immediately. |
| EYE CONTACT | Immediately flush with large amounts of water for fifteen (15) minutes, rinsing eye thoroughly. Get medical attention. |
| SKIN CONTACT | Wash with plenty of soap and water for fifteen (15) minutes. Remove contaminated clothing. If skin irritation occurs, get medical attention. Wash clothing before reuse. |
| INGESTION | If <u>conscious</u> , drink large quantities of water or milk and induce vomiting. Call a physician immediately. Avoid alcohol. If <u>unconscious</u> , or in convulsions, seek medical attention immediately. Do not give anything by mouth to an unconscious person. |

VIII. STEPS FOR MATERIAL SPILL

Spills exceeding 100 pounds should be reported to the local authorities.

1. Contain all spilled material, wearing appropriate protective equipment.
2. Place spilled material in clean, dry containers for disposal. Do not flush to surface water.

WASTE DISPOSAL METHOD

Not rated a hazardous substance by USEPA. Collected material can be dissolved in water, exercising caution. Dissolved material may be discharged into an appropriate industrial waste collection system but consult local, state and federal regulating agencies before disposing of any material.

IX. SPECIAL PROTECTION INFORMATION

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|----------------------------|---|
| RESPIRATORY PROTECTION | If dusty conditions are encountered, use NIOSH/MSHA respirator with acid gas cartridge and dust pre-filter. |
| VENTILATION | Store and use in a well-ventilated area. |
| EYE PROTECTION | Chemical safety goggles. |
| GLOVES | Natural or synthetic rubber. |
| OTHER PROTECTIVE EQUIPMENT | Boots, aprons or chemical suits as required to prevent skin contact. |

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ADDITIONAL CHEMICAL PRODUCTS FROM NORWECO

BIO-DYNAMIC® TABLET FEEDERS

Bio-Dynamic tablet feeders are a technological advancement in self-contained tablet dosing systems for water or wastewater treatment. A low cost, low maintenance and effective method of chemical treatment, Bio-Dynamic feeders have no mechanical components and require no electricity. The safety, accuracy and reliability of Bio-Dynamic feeders outperform gas, liquid and ultraviolet systems. With fifteen different models, Bio-Dynamic feeders accommodate a wide range of flows and plant conditions. Installation flexibility including direct burial, inline and contact chamber mounting provides many options for locating the feeder. Complete 24" riser assemblies are available for Series 2000 and 4000 tablet feeders, while the LF Series uses 4" PVC pipe and Norweco's remote removal system to allow service from grade. No model of Bio-Dynamic feeder will ever require confined space entry equipment under OSHA regulations. Molded inlet and outlet hubs allow the Bio-Dynamic feeder to be directly connected to treatment system piping without the need for a separate drop box. The tiered flow deck of the Bio-Dynamic feeder accommodates variable, intermittent and surge hydraulic flows into the system. The flow deck directs liquid to the feed tubes during low flows and disperses liquid velocity throughout the feeder during peak flows, resulting in consistent chemical application. In many models, chemical dosage is further controlled by interchangeable weir plates or an optional sluice that can be completely adjusted from a 1" to 3" outlet width. The sluice can be adjusted during tablet feeder operation using only a standard socket wrench with extension.



All models are backed by a ten year limited warranty. Standard components include one-piece feed tubes with twist lock caps, molded inlet and outlet hubs, molded mounting feet and Norweco's tiered flow deck.

BIO-SANITIZER® DISINFECTING TABLETS

Bio-Sanitizer disinfecting tablets are uniquely formulated to provide efficient and reliable disinfection of water or wastewater treatment system flows. Bio-Sanitizer tablets provide treatment plant operators a consistent means to meet disinfection standards without exceeding new and stringent limits for total residual chlorine. Produced from a proprietary grade of calcium hypochlorite and containing a minimum of 70% available chlorine, Bio-Sanitizer tablets are registered by the U.S. Environmental Protection Agency and the Ministry of the Environment. With a unique beveled edge, Bio-Sanitizer tablets dissolve slowly and evenly, providing effective, economical bacteria killing power. Bio-Sanitizer disinfecting tablets are packaged in easy to open, resealable 10 lb., 25 lb., 45 lb. and 100 lb. Department of Transportation approved containers.

BIO-GEM® ORGANIC DIGESTER

A blend of bacteria, enzymes and natural growth accelerators, Bio-Gem organic digester effectively digests grease, fats and oils in wastewater treatment systems, lift stations, septic tanks, sand filters, drain lines and commercial grease traps. When used as directed, Bio-Gem liquid will quickly and effectively convert common grease, fats and oils into carbon dioxide and water. This organic digestion process is much more effective and reliable than compounds that merely emulsify the grease, fats and oils, sending the problem to downstream treatment processes. Regular use of Bio-Gem liquid will reduce odors, stabilize effluent quality, reduce system maintenance and minimize tank pump-out frequency. Packaged in one or five gallon containers and 55 gallon drums, Bio-Gem organic digester is environmentally safe and works in aerobic or anaerobic conditions.

norweco®

*Engineering the future of water
and wastewater treatment*

220 REPUBLIC STREET
NORWALK, OHIO, USA 44857-1156
TELEPHONE (419) 668-4471
FAX (419) 663-5440
www.norweco.com

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