

BIO CLEANING SOLUTIONS

Bio Tech GTX 10 FF Concentrate

Multi-Purpose Probiotic cleaning formulation concentrate

IMPORTANT NOTICE

Green Worx CS contends that this product is manufactured according to and conforms to the terms and conditions as stipulated in SABS/TC 1006/SC 02 "Detergents, soaps, cleaners, degreasers and oil spill dispersants and absorbents" including SANS CD 1604ED1.1:Biologically enhanced cleaning and degreasing products. Bio Tech has been accredited with SANS 1604 as of 2022.

Green Worx Cleaning Solutions offers new ground breaking patented environmentally friendly pre-treat water technology to replace and outperform any wetting agent. This environmentally friendly additive is a solvent, ammonia and glycol free replacement product where powerful wetting performance is required for cleaning and dispersion of particles into solutions or suspensions; it prevents flocking and agglomeration; The additive product performs extremely well and is a replacement for conventional wetting agents to increase environmental acceptance; This new water technology is primarily used in the pre-treatment of water. The quality of water and its properties are manipulated in an entirely natural way. This natural product neutralizes the magnetic charges of particles in water thus reducing surface and interfacial tension resulting in:

Increased adhesion of the liquid to a solid particle thus resulting in a powerful wetting agent.

Allows for water and oil-based droplets to break down into finer globules and to stay in suspension for longer, resulting in powerful emulsification.

The addition of this new technology allows for the transfer of our microbes / probiotics into nooks and crannies resulting in a more effective distribution of probiotics for better degradation of organics ensuring more visible cleaning and deodorising power.

Bio Tech GTX 10 as a probiotic consortium that demonstrates superior enzyme performance for use in multiple applications. It exhibits a broad range of degradation capabilities needed for a multi-purpose product efficacious in maintenance of drain line and grease traps, improving septic and waste degradation and cleaning and odour control making this product technologically the most advanced on the South African market.

In their natural environment, probiotics/bacteria produce hundreds of enzymes in response to the organics present in their environment. They produce extracellular enzymes that break down proteins, starches, fats, oils, greases, urine, esters and toilet tissue into smaller particles outside the bacterial cell. The bacteria then transport the smaller particles across their cell membrane for use as an energy source and for building of new cellular components. Since bacteria detect the organics present as potential food and produce specific enzymes to breakdown these organics, it is a very efficient system. Many different enzymes are required to completely breakdown a substrate.

The seven strain Probiotic consortium in *Bio Tech GTX 10* produces seven separate enzymes to ensure a swift degradation of key organic contaminants to ensure drain lines, grease traps, septic systems and surfaces are biologically cleaned and odours controlled. Although many bacteria can utilise these organics as food sources, it is the bacteria with the most rapid production of these enzymes that provide the most dramatic effects.

Safety of Bio Tech GTX 10 Consortium:

Bio Tech GTX 10 contains a blend of safe probiotics/Bacillus microorganisms. Toxicity studies done by an independent laboratory shows that the consortium has no acute oral toxicity, no acute dermal toxicity, and no acute inhalation toxicity at maximal test dose. Acute dermal irritation and acute eye irritation studies classify ***Bio Tech GTX 10*** consortium as non-irritating, the consortium does not elicit a skin sensitisation reaction.

DATA SHEET

| Benefits | Features |
|---|--|
| <ul style="list-style-type: none">• Drain lines – degrades and eliminates organics found in drain lines. Regular addition of <i>BIO TECH GTX 1</i> maintains a cleaner and odour-free system.• Septic and waste treatment – maintains effective activity in septic systems, eliminating the need for excessive pumping. Eliminates odours caused by incomplete digestion of malodorous volatile fatty acids.• Hard Surface and Bathroom cleaning and odour control – penetrates cracks, crevices and pores of surfaces where organics accumulate, removing the organics leaving a visually cleaner surface. Provides long term odour control by removing the organics that cause odours and prevents their return. | <ul style="list-style-type: none">• A stable consortium of safe <i>Bacillus</i> spores• Production of multiple enzymes providing a wide range of degradation capabilities• A synergistic blend that works in concert to provide superior performance across multiple applications• Excretion of high levels of amylase, cellulase, lipase, protease, urease, esterase & xylanase enzymes• Ability to work under aerobic and anaerobic conditions• Single product simplicity for multi-application flexibility |

PRODUCT CHARACTERISTICS

- **Bacteria Counts** : 1 X 10⁹ /ml
- **Bacteria Type** : Bacterial Consortium:
- Bacillus cereus strain B002
- Bacillus cereus strain TS101
- Bacillus subtilis including strain D014

Bacillus consortium is designed to produce enzymes on demand: Active natural bacteria incorporated into the product produce the following waste degrading enzymes:

- ✓ **Protease** – breaks down proteins (e.g. meat, excreted/secreted proteins) into amino acids
- ✓ **Lipase** – breaks down fats/grease into fatty acids & glycerol. If not broken down, fats can go rancid and lead to off-odours and blocked drains/fat grease traps.
- ✓ **Amylase** – starch acts as a glue for dirt – amylases catalyse the break-down of starch into sugars which are then further used as a food source by the bacillus
- ✓ **Cellulase** – breaks down cellulosic material
- ✓ **Urease** - catalyzes the hydrolysis of urea into break-down products.
- ✓ **Esterase** - splits esters into an acid and an alcohol in a chemical reaction with water called hydrolysis. Esters have characteristic odours most of which are pleasant/fruity, however can also include onion/garlic and worse odours
- ✓ **Xylanase** – help in breaking down plant cell walls.
 - What this means – the bacillus use the multitude of enzymes produced to break down the components of malodour and staining to provide microbial cleaning at the smallest level of dirt/contamination.

- **Salmonella** : Not detected
- **Appearance** : Clear liquid
- **Fragrance** : Pleasantly perfumed

Safety:

- ☐ Non-hazardous.
- ☐ Non-carcinogenic.
- ☐ Non-genetically modified.
- ☐ Non-pathogenic

Key Features:

- ☐ Ingredients Readily Biodegradable (OECD 301)
- ☐ Biological active (contains active natural bacteria)
- ☐ Compatible and enhances water treatment and water re-use systems
- ☐ Packaging minimized, re-useable and recyclable
- ☐ Global Green Tag Certified
- ☐ Long lasting

Dilution rates:

Bio Tech GTX 10 FF is diluted 1:9 to produce an effective ready to use product, blend with soft water for 30 minutes and packaged under agitation. Label the RTU “Shake before use” as the biological spores may settle over time. The diluted **Bio Tech GTX 10 FF** conc. can be further diluted dependant on application to an additional maximum of 1:9 and needs to be used on the day – do not store. No need to rinse, leave to air dry.

Other suitable applications for Bio Tech GTX 10 FF:

- FOOD WASTE – DOMESTIC & INDUSTRIAL:** reducing blockage of drains, pipes: treatment of effluent not on main drainage: reduction of odours and general purpose cleaning

| Area | Dilution | Initial Dose Rate | Regular Maintenance Rate | Method of Application |
|------------------------------|----------|------------------------|--------------------------|---|
| Effluent tanks and Cess Pits | As is | 400g per typical house | 100g per month | Through any convenient access point e.g. toilet |
| Cess Pits | As is | 400g per typical house | 100g per month | Through any convenient access point e.g. toilet |
| Urinals | As is | | Spray twice daily | |
| Bathroom | 1:9 | | Daily cleaning | As per cleaning method |
| Drains | As is | 15g | 15g/month | Direct |

- AGRICULTURE WASTE:** reduction of high solids/crusting of waste: liquefaction and cleaning (i.e. cowsheds, piggeries, poultry farms etc.)

| Area | Dilution | Initial Dose Rate | Regular Maintenance Rate | Method of Application |
|----------------------|----------|-------------------------------|---|-----------------------|
| Buildings | | 1kg per 10 tons animal weight | Weekly for two weeks, then 500gm per week | Spray over surfaces |
| Floors | 1:9 | 1kg / 120m ² | 1kg / 120m ² | Spray over surface |
| Effluent Pits | | 1kg / 250 000 litres | Weekly | Spray over cone |
| Ponds & Slurry Tanks | | 1kg / 250 000 litres | Weekly | Spray over cone |

- SEWAGE PLANTS:** general aid to processing.

| Area | Dilution | Initial Dose Rate | Regular Maintenance Rate | Method of Application |
|---------------------|----------|--------------------------|------------------------------------|------------------------------|
| Trickling filters | | 1kg / 4,5 million litres | 500g / 4.5 million litres per week | Add to primary settling tank |
| Anaerobic digesters | 1:9 | 500g / 45 000 litres | Repeat for 3 days then per week | Add to inflow pipe |
| Retention ponds | | 500g / 45 000 litres | Repeat for 3 days then per week | Add to inflow pipe |
| Activated sludge | | 500g / 45 000 litres | Repeat for 3 days then per week | Add to inflow pipe |

- ABATTOIRS:** for easier handling of high protein/fats in concentrated areas

| Area | Dilution | Initial Dose Rate | Regular Maintenance Rate | Method of Application |
|----------------|----------|------------------------------|---|-----------------------|
| Total effluent | 1:9 | 4kg / 450 000 litres per day | Repeat for 3 days, then ½ kg / 450 000 litres | Add manually |
| Grease traps | 1:9 | 100g / 500 litres capacity | 50g / 500 liters per week | Pour through drain |

Bio Tech GTX 10 Concentrate is designed as a bio-technical aid to treatment of organic waste material offering liquefaction and reduction of solids, reduction of odour, easier disposal of waste, aids general cleaning of soiled areas, safety in operation of effluent systems, offers a viable alternative to current processing techniques using a bio-technical approach.

Always maintain effective dosage.

Usage considerations:

- Control pH ~ 7.00
- Ensure that treatment system is properly mixed.
- Ensure system has sufficient retention time for the waste load to be treated.
- Ensure sufficient oxygen supply
- Do not use non-biodegradable detergents
- Do not use anti-bacterial or biocidal (kill the good bacteria) products, as this will prevent the treatment from working.
- Do not use any harsh chemicals such as strong acids or bases as this will kill the bacteria.

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