

BIO CLEANING SOLUTIONS

Bio Tech Ultra Bio-Floor & Tile Manual Cleaning Concentrate 10 X FF

Multi-Purpose bio-formulation & Multi-Action Microbial Consortium

IMPORTANT NOTICE

Green Worx CS contends that this product is manufactured according to and conforms to the terms and conditions 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.



The bacillus/probiotics consortium in Bio-Tech Ultra Floor produces 7 separate enzymes to swiftly degrade key organic contaminants, ensuring surfaces are biologically cleaned and odors controlled. Although many bacteria can utilize these organics as food sources, the bacteria with the most rapid production of these enzymes provide the most dramatic effects.

Bio-Tech Ultra Floor is a bio-enzymatic / probiotic product specially formulated to digest oils, grease, and other dirt (organic waste) on floors to leave an invisible film that continues to digest the fats and grease even after regular cleaning. Following the in-depth cleaning of floors will leave them cleaner, less slippery, and with no malodours. Bio-Tech Ultra Floor is a powerful formulation of nutrients, stimulants, and surface agents producing excellent performance.

Most chemical cleaning products emulsify organics allowing for even distribution of dirt on floor surfaces, thus not cleaning anything by contrast to the residual cleaning effects of microbes in Bio Tech Ultra Floor. The microorganisms in Bio-Tech cleaning products work during and after the initial cleaning is done. They penetrate cracks and crevices of floor surfaces to degrade and digest spills, grease, and other accumulated organic material, leaving floors visibly cleaner.

- Common applications include cleaning floors for quick service, restaurants, schools, industrial cafeterias, long-term care and hospitals, grocery store floors (behind the counter), and floors in food processing plants
- Displaces unknown, potentially "pathogenic" (disease-causing) bacteria with known, healthy microorganisms and, in this way, contributes to better human health
 - While not a biocide, a side benefit is that it eliminates the feeding and breeding sources for pests (insects) and will out-compete other potentially harmful bacteria and viruses for the same food source. For these reasons, international research has intensified regarding sanitation methods based on the biological principle of competition. This involves the use of non-pathogenic microbial products that can colonize the surfaces on which they are applied to counter the proliferation of other bacterial species. This is based on the competitive exclusion principle (Gause's law).

This approach to the sanitation problem is a complete reversal of the objectives of traditional procedures,

where disinfection is defined by a minimal presence of microorganisms on surfaces of any kind. While the conventional approach seeks control of pathogenic strains, it does so without tolerating the presence of microorganisms that are not harmful to human health.

These new procedures can be defined as "bio-stabilization techniques" of one species over another, thus implying no general biocidal action except as a final effect against certain microbial species.

The principle of action is that two different species (bacterial and/or fungal) seeking to live in the same ecological microcosm cannot coexist in a stable equilibrium if they require the same nutritional substrates; ultimately, one of the two will become dominant over the other and even cause extinction.

The use of these products with a non-pathogenic microbial load can also inhibit transcriptional regulation (quorum sensing) among pathogenic bacteria, i.e., information exchange activities that are spread even among microorganisms belonging to different strains. This is a method of defense against environmental pressure (sanitizers, disinfectants, and antibiotics).

- With routine cleaning, the effect is enhanced with each application until floors are indeed deep cleaned

Safety of *Bio-Tech Ultra Floor Consortium*

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

In summary

- Reduced operational spending.
- Reduced labour costs due to fewer man hours needed to clean the floors – working action of the bio enzymes can last up to 3 days.
- Improved asset preservation as the reduced manual scrubbing reduced the amount of abrasion and wear and tear on the surface.
- Improved quality and cleanliness of mop water and mop head
- using green solutions that have zero environmental impact due to Green Worx Cleaning Solutions' microbial and eco-benign technology.

Features

- A stable consortium of safe *Bacillus* 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

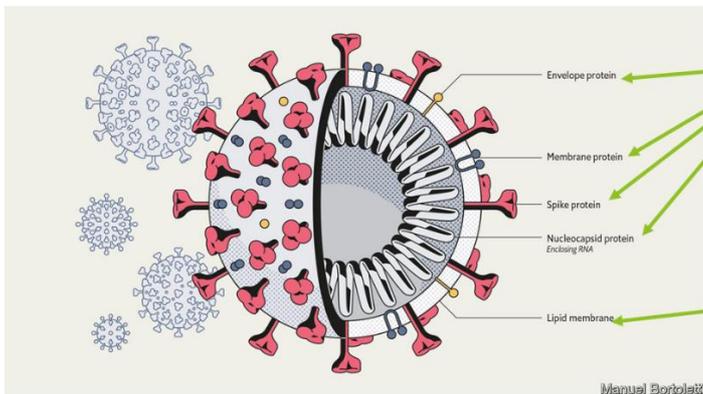
- Bacteria Counts: - 1×10^9 /ml.
- Bacteria Type: - *Bacillus* consortium producing the following enzymes:-
 - *Protease* – breaks down proteins (e.g., meat, excreted/secreted proteins) into amino acids.
 - *Lipase* breaks down fats/grease into fatty acids and glycerol. If not broken down, fats can go 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 & 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 & staining to provide microbial cleaning at the smallest level of dirt/contamination.

- Salmonella: - Not detected
- Appearance: - Clear liquid
- Fragrance: - Pleasantly perfumed
- Shelf-life: - Two years; maximum loss of 1.0 log at recommended storage conditions

Bacillus Subtilis produces enzymes



The enzyme protease breaks down protein - thus breaking down the cell wall

The enzyme lipase breaks down lipid / fat - thus breaking down the lipid membrane

Bio Enzymes are special proteins that can break large molecules into small molecules. Different types of enzymes can break down different nutrients: ... protease enzymes break down proteins into amino acids. Lipase enzymes break down lipids (fats and oils) into fatty acids and glycerol.

Spectrum of activity for Bio Tech GTX products

TEST REPORT

Issued to: M/S Green Worx Cleaning Solutions Unit 1, New Port Business Quarts Rd, Kya Sand Bus. Park Kya Sand, South Africa	Report No.	MS- 071220-01
	Report date:	12/ 12/ 2020
	Sample Received:	07/12/2020
	Analysis date:	07/12/2020 to 12/12/2020
	Sampled By:	Customer

Sample Description: Bio Tech GTX Probiotic Surface Cleaner & Sanitiser.

P-1/2

Brand Name: - Bio Tech GTX

Condition of Sample: Received in Sealed & Marked Plastic container.

RESULTS

Sr. No.	Product	Unit	Test Method	Result	Remark
1	Minimum Inhibitory Count (MIC)	-	AOAC/SRTL SOP	Yes	Passed
2	Minimum Bactericidal Count (MBC)	%	ASTM E1153/AOAC	>99.9	Passed
3	Quantitative kill-time test for Bacteria	%	ASTM E1153/AOAC	>99.0% reduction in 30 sec	Passed
4	Quantitative kill-time test for Virus (including HINI and common flu virus)	%	ASTM E-1153/AOAC	>99.0% reduction in 30 sec	Passed
5	Lead (as Pb)	ppm	GIMEFCC/SRTL SOP/01	Not Detected	Passed
6	Chromium Element s	ppm	GIMEFCC/SRTL SOP/01	Not Detected	Passed
7	Sanitizer Base (solvent)	%	GIMEFCC	Natural Enzymes, Plant Based Surfactants, D.M. water, Combined with pleasant Odour.	Passed
8	Anti - Corona Virus Effect	%	ASTME1153	99.90	Passed
9	Human Safe		GIMEFCC	Yes	Passed
10	Toxicity	-	GIMEFCC	Not Detected	Passed
11	Eye Safe & Skin Safe	-	GIMEFCC	Passed the test	Passed
12	Food Safe	-	GIMEFCC	Yes	Passed
13	Animal Safe	-	GIMEFCC	Yes	Passed
14	Vegetation Safe	-	GIMEFCC	Yes	Passed

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Sample Description: Bio Tech GTX Probiotic Surface Cleaner & Sanitiser.

Brand Name: - Bio Tech GTX

Sr. No.	Product	Unit	Test Method	Result	Remark
15	Water Solubility	%	OCED (Method 301G)	99.0%	Passed
16	Acute dermal Toxicity	-	GIMEFCC	Negative	Passed
17	Acute Oral Toxicity	-	GIMEFCC	Negative	Passed
18	Bioaccumulation	-	GIMEFCC	None	Passed
19	Efficiency	%	ASTME1153	99.80	Passed
20	UTL Layering	Micron	GIMEFCC/AOAC	0.80	Passed
21	Ingestion Effect	-	GIMEFCC/ AOAC	Absent	Passed
22	Biodegradable	%	OCED (Method 301G)	99%	Passed
23	pH at 20-c	-	SRTL/SOP/01	6.20	Passed
24	Hazardous Polymerization	%	GIMEFCC/SRTL SOP/01	Not Detected	Passed
25	Anti Bacterial Effect	%	GIMEFCC/SRTL SOP/01	99.90	Passed

END OF REPORT

TESTED BY



 AUTHORIZED SIGNATORY

From the above analysis it can be clearly seen that Bio Tech GTX 1 is effective against

- Anti Covid Virus Effect at 99.9% within 30 seconds – international test method applied ASTME1153 measured at 99.9%

Bio Tech Ultra Floor Cleaner - Antimicrobial activity by ASTM E 2315

Organisms used:

1. Methicillin-resistant Staphylococcus aureus Strain No. ATCC 6538 (Gram Positive Bacteria)
2. Klebsiella pneumoniae Strain No. ATCC 4352 (Gram Negative Bacteria)
3. Escherichia coli Strain No. ATCC 10799 (Gram Negative Bacteria)
4. Pseudomonas aeruginosa Strain No. ATCC 19154 (Gram Negative Bacteria)

Antibacterial Activity Results for 5 mins contact time

Sample Identification	Test Culture	No. of colonies recovered at '0' hr [B]	No. of colonies recovered at '30 mins [A]	Reduction of Microorganisms [R]
1. Floor cleaner	Methicillin-resistant <i>Staphylococcus aureus (MRSA)</i>	1.05 X 10 ⁵	1.5 X 10 ³	95.42%
	<i>Klebsiella pneumoniae</i>	1.09 X 10 ⁵	2.2 X 10 ³	95.22%
	<i>Escherichia coli</i>	1.15 X 10 ⁵	2.7 X 10 ³	95.71%
	<i>Pseudomonas aeruginosa</i>	1.11 X 10 ⁵	3.5 X 10 ³	95.25%

Antibacterial Activity Results for 30 mins contact time

Sample Identification	Test Culture	No. of colonies recovered at '0' hr [B]	No. of colonies recovered at '30 mins [A]	Reduction of Microorganisms [R]
1. Floor cleaner	Methicillin-resistant <i>Staphylococcus aureus (MRSA)</i>	1.05 X 10 ⁵	3.4 X 10 ²	99.67%
	<i>Klebsiella pneumoniae</i>	1.09 X 10 ⁵	4.5 X 10 ²	99.58%
	<i>Escherichia coli</i>	1.15 X 10 ⁵	4.9 X 10 ²	99.57%
	<i>Pseudomonas aeruginosa</i>	1.11 X 10 ⁵	5.4 X 10 ²	99.51%

Antibacterial Activity Results for 1 hr contact time

Sample Identification	Test Culture	No. of colonies recovered at '0' hr [B]	No. of colonies recovered at '30 mins [A]	Reduction of Microorganisms [R]
1. Floor cleaner	Methicillin-resistant <i>Staphylococcus aureus (MRSA)</i>	1.05 X 10 ⁵	1.9 X 10 ²	99.81%
	<i>Klebsiella pneumoniae</i>	1.09 X 10 ⁵	2.2 X 10 ²	99.79%
	<i>Escherichia coli</i>	1.15 X 10 ⁵	2.5 X 10 ²	99.78%
	<i>Pseudomonas aeruginosa</i>	1.11 X 10 ⁵	1.9 X 10 ²	99.82%

Bio Tech GTX Probiotic at a 1:4 dilution and 24hours contact time

Surviving microorganisms (cfu) and % kill at 1:4 dilution and 24hours contact time

First Run Contact Time: 24hours			
Organism challenged with	Control sample	Test sample	% Kill (1)
<i>S. aureus</i>	2.0E+09	1.0E+02	99.9%
<i>E. coli</i>	2.3E+08	5.0E+03	99.9%
<i>P. aeruginosa</i>	3.0E+07	1.0E+02	99.9%
<i>P. vulgaris</i>	1.1E+08	1.0E+02	99.9%
<i>E. aerogens</i>	6.0E+08	4.2E+04	99.9%

<i>E. faecalis</i>	1.4E+08	1.1E+04	99.9%
<i>A. faecalis</i>	7.0E+08	1.0E+03	99.9%
<i>C. albicans</i>	2.1E+06	1.0E+01	99.9%
<i>S. epidermidis</i>	2.8E+06	5.0E+03	99.8%
<i>M. luteus</i>	9.0E+07	1.1E+04	99.9%

Study conducted by Mirochem Specialised lab services – full study available on request

All test results are available on request – please email info@greenworx.eco

DOSE RATES (Follow dilution rate)

General:

1. Before use, thoroughly clean the detergent compartment, always using new or dedicated to this product other cleaning supplies such as a mop head or towel.
2. Mix proper dilution and fill the container. Stir well.
3. Do not add bleach or other chemical cleaning agents to the product.
4. Food-contact surfaces must be rinsed with potable water after cleaning and preferably disinfected. Do not store in food processing or food storage areas. Do not contaminate food products.

In-Depth Deep Cleaning & Degreasing:

Dilute 1 part concentrate to 50 parts clean water (100 ml to 5 liter cool clean water).

Depending on your observation of how dirty the floor is, it may be necessary to scrub/brush/mop solution into joints, crevices, grout lines, etc. Allow to penetrate for a few minutes. Dry mop well. If necessary, rinse with clean water.

Daily Maintenance Cleaning:

Dilute 1 part concentrate to 100 parts cool, clean water (100 ml to 10 liters cool, clean water) for regular maintenance use.

Depending on the application, bio-Tech Ultra Floor can be further diluted to a maximum of 1:100.

CONCLUSION: Bio-Tech Ultra Floor Concentrate is designed as a biotechnical aid to the treatment of organic waste material, offering the following advantages: Liquefaction and reduction of solids, reduction of odor, more straightforward disposal of waste, aids general cleaning of soiled areas, safety in operation of effluent systems, and offers a viable alternative to current processing techniques using a biotechnical approach.

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