

BIO CLEANING SOLUTIONS

Bio Tech GT X 10 FF Concentrate : Mortuary Deep Clean (DC)

Application for - Multi-Purpose deep cleaning, removal of organics and deodorising in Mortuaries

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.



Mortuary D.C Concentrate microbial consortium 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.

In their natural environment, 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 bacillus consortium in *Mortuary D.C Concentrate* 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 Mortuary D.C concentrate Consortium:

Mortuary D.C in-use concentrate contains a blend of safe Bacillus microorganisms. Toxicity studies done by an independent laboratory show that it 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 ***Mortuary D.C Concentrate*** consortium as non-irritating, it does not elicit a skin sensitisation reaction.

DATA SHEET

Benefits	Features
<ul style="list-style-type: none">• Degrades and eliminates organics - Regular addition of Mortuary D.C Concentrate maintains a cleaner and odour-free system• Cleaning and odour control - Penetrates cracks, crevices and pores of surfaces where organics accumulate, removing the organics and 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** : 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 & 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

Dilution rates:

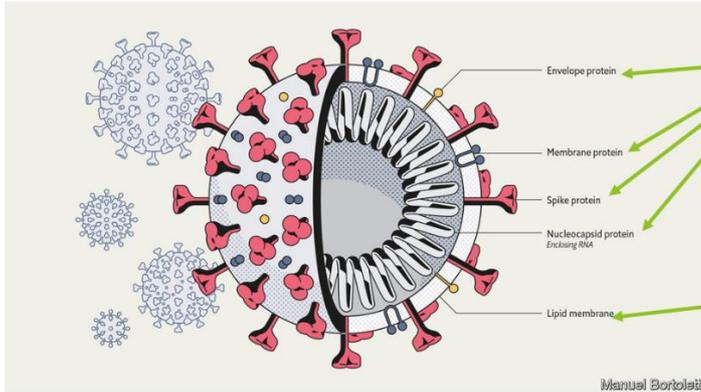
Mortuary D.C concentrate can be diluted dependant on application to a maximum of 1:9. For both domestic and industrial applications, it delivers on the elimination of odours and offers general purpose deep cleaning. Product to be used as is for heavily soiled areas. For maintenance cleaning, dilution of 1:9 with water is suggested.

Mixing and dilution guidelines.

Most formulators can produce liquid products. This product allows formulators to be present in the lucrative biological cleaning product market without extensive specialist knowledge.

- The most common 'bio' products in the industrial, institutional, and consumer markets are liquids - the Bio Tech GTX concentrate series are designed specifically for this use.
- Simple format that is easily dilutable in clean water.
- Concentrates are easy to handle and store.
- Simple dilution format for easy calculation in formulation – follow the guidelines for dilution and mixing. Always ensure you work in a hygienically clean environment free from contaminants. When decanting the concentrate into a mixing vessel, ensure the vessel is hygienically clean, and the mixing apparatus is clean before use. Once you have achieved the desired dilution, ensure that any container to be decanted in is hygienically clean and that the closing cap is clean and free of any contaminants.

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.

See table below.

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%

ANTIMICROBIAL ACTIVITY RESULTS

Table 1: Antibacterial Activity Results for 1 min contact time

Sample Identification	Test Culture	No. of colonies recovered at '0' hr [B]	No. of colonies recovered at 5 mins [A]	Reduction of Microorganisms [R]
1. Floor cleaner	Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	1.05 X 10 ⁵	4.4 X 10 ³	47.57%

	<i>Klebsiella pneumoniae</i>	1.09 X 10 ⁵	5.4 X 10 ³	41.12%
	<i>Escherichia coli</i>	1.15 X 10 ⁵	6.1 X 10 ³	48.24%
	<i>Pseudomonas aeruginosa</i>	1.11 X 10 ⁵	6.9 X 10 ³	37.06%

Table 2: 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</i> (MRSA)	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%

Table 3: 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</i> (MRSA)	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%

Table 4: 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</i> (MRSA)	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%

Mortuary D.C 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.

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