

BIO CLEANING SOLUTIONS

Bio Tech GTX Probiotic Surface Cleaner & Sanitising Spray

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.



Green Worx Cleaning Solutions introduces a new age surface cleaning and hygiene sanitising probiotic bio-enzyme technology. The definition of sanitising is - *make (something) more palatable by removing elements that are likely to be unacceptable or controversial.*

Keeping surfaces clean through improved hygiene methods is one of the most important steps we can take to avoid getting sick and spreading germs. Many

diseases and conditions are spread by not practising proper hygiene protocols such as COVID, H1N1, common flu virus and SARS that are caused by the coronavirus. The virus that causes SARS is known as SARS-CoV, while the virus that causes COVID-19 is known as SARS-CoV-2. Together with a host of other common bacteria.

Bio Tech GTX Probiotic Surface Cleaner & Sanitiser spray have proven in a Quantitative kill-time test for Bacteria a 99.0% reduction in 30 sec. In a Quantitative kill-time test for Virus (including H1N1 and common flu virus) a reduction of 99.0% within 30 seconds and a 99.9% Anti - Corona Virus Effect.

When should you apply Bio Tech GTX Probiotic Surface Cleaner & Sanitising Spray?

- Before entering a restricted or controlled health risk area
- Before, during, and after preparing food
- Before eating food
- Before and after caring for someone who is sick or at risk
- After using the toilet
- After changing diapers or cleaning following the use of the toilet
- After blowing your nose, coughing, or sneezing
- After touching an animal, animal feed, or animal waste
- After handling pet food or pet treats
- After touching garbage or any surface that may harbour germs or viruses

- And you face mask on at least a daily basis

How should you apply Bio Tech GTX Probiotic Surface Cleaner & Sanitising Spray?

Spray and wipe for effective cleaning and sanitizing control.

Disinfectants stop working as soon as they have dried or evaporated from any surface. Bio Tech GTX Enzymes / Probiotics keep working, cleaning and protecting surfaces, for up to three days after each application. However, since surfaces and skin are a dynamic environment that is constantly being touched and are touching many different surfaces, repetitively being contaminated and washed, the Bio Tech GTX Probiotic Bio Enzymes should be used several times per day on skin surfaces.

Bio Tech GTX Probiotic Surface Cleaner & Hygiene Sanitising Spray forms a healthy and protective micro flora on surfaces.

PRODUCT CHARACTERISTICS for Bio Tech GTX Probiotic Surface Cleaner and Sanitiser (Ready to Use)

- **Bacteria Counts** : 1 X 10⁸ /ml
- **Bacteria Type** : Six Strain Bacillus consortium producing the following enzymes:
 - ✓ **Protease** – breaks down proteins into amino acids – but importantly it has the potential of breaking down the protein shell of bacteria and viruses when in contact long enough. Unlike alcohol sanitisers which evaporate almost immediately Bio Tech GTX Probiotic Spray will remain on surfaces up to several days.
 - ✓ **Lipase** – breaks down fats into fatty acids & glycerol. Importantly it has the potential of breaking down the lipid envelope of bacteria and viruses if in contact long enough. * Virus are very fragile; the only thing that protects it is a thin layer of fat and protein. This is why probiotics are the best remedy, because the surfactant has the potential to dissolve the fat. By dissolving the fat layer, the protein molecule disperses and decomposes on its own.

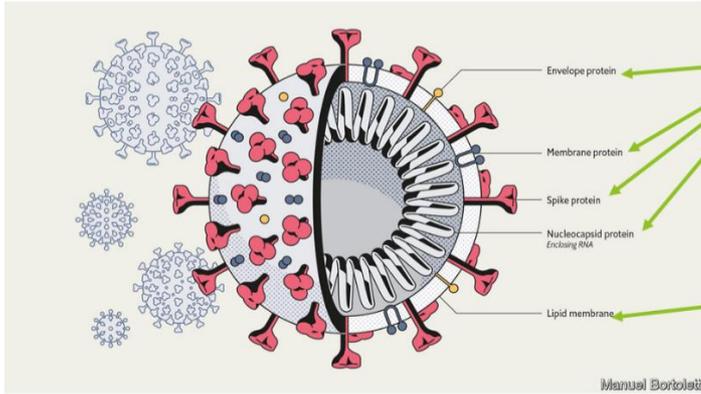
Additional Enzymes within the formulation add greater beneficial effect -

 - ✓ **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** : Dark Green Liquid
- **Fragrance** : Pleasantly perfumed
- **Shelf-life** : Two years; maximum loss of 1.0 log at recommended storage condition

We know that *Bacillus* strains are some of the most active in terms of producing extracellular metabolites that influence the growth of other organisms. These go by a wide range of exotic names like butirosin, lichenicidin, macrolactin, bacillaene which have all been extensively characterized as broad spectrum anti- bacterials

Bio Tech GTX Probiotic Surface Cleaner and Sanitising Spray contains well known Bacillus stains that produce surfactin, one of the most potent emulsifying agents ever identified This has a function of emulsifying non aqueous substrates like fats, oils and grease converting them to the ideal form for biodegradation. Targeted surfactin production in situ by Bacillus spores may reduce the need for chemical surfactants within a formula. Concentrated surfactin may also have significant membrane disruption effects and may be a further mechanism for anti- microbial effects. The simplest mechanism for their effect is simply “competitive exclusion”. There is only a limited amount of food (or other limiting growth requirement) within any environment. Those organisms that reach the buffet first and grab the most food will squeeze out the slower reacting organisms and starve them of food or other environmental factors and eventually dominate the environment. This is probably the simplest mechanism to explain to a layperson and is also welcomed by regulators as there is no direct anti- microbial affect and no mediating metabolites that need to be considered

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 H1N1 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%

In addition to the above it has been proven that Bio Tech GTX has a positive kill of 99% on the following microorganisms within 30 minutes

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. Bio Tech GTX Probiotic 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%

In further testing Bio Tech GTX Probiotic at a 1:4 dilution and 24hours contact time showed surviving microorganisms (cfu) and % kill at 1:4 dilution at 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

Dilution and Application

Cleaning and sanitising

Use as is – pour into an appropriate bottle with foam / trigger spray - spray onto required surfaces to be cleaned and sanitised, allow a few minutes to activate, wipe with clean cloth – allow to air-dry – no rinsing required.

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.

For fogging and or misting / sanitizing of other surfaces

Mix 1 liter Bio Tech GTX per 10 liters of clean water into the holding container of a fogging machine – spray the area(s) required for fogging/misting. Repeat every 3-5 days.

Sanitising of hand as a surface - Mix 1 liter Bio Tech GTX per 10 liters of clean water into the holding / spray container One squirt on each hand is sufficient to be spread on all areas of your hands, fingers and wrists.

Caution. Please see Material Safety Data Sheet for a more detailed safety profile

Do not spray directly into eyes, nose, and mouth or onto open wounds

Do not mix with other conventional chemicals

Product Availability

Bulk Pack Sizes – 25 liter and 5 liter Containers

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