

M101- 40 In Use Concentrate.

Multi-Purpose bioformulation concentrate

Bio Cleaning Solutions



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M101 - 40 In use Concentrate

Multi-Purpose bioformulation & Multi-Action Microbial Consortium

M101 - 40 In use concentrate microbial consortium demonstrates superior enzyme performance for use in multiple applications. *M101 - 40 In use concentrate* 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 *M101 - 40 In use concentrate* produce 7 separate enzymes to ensure a swift degradation of key organic contaminants to ensure drain lines, grease traps, septic systems and surfaces are biologically cleaned & odours controlled. Although many bacteria can utilize 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 *M101 - 40 In use concentrate* Consortium

M101 - 40 In use concentrate contains a blend of safe *Bacillus* microorganisms. Toxicity studies done by an independent laboratory shows that *M101 - 40 In use concentrate* 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 *M101 - 40 In use concentrate* consortium as non-irritating. *M101 - 40 In use concentrate* consortium does not elicit a skin sensitization reaction.

Product Data Sheet

Benefits

- *Drain lines* – degrades and eliminates organics found in drain lines. Regular addition of *M101 - 40 In use concentrate* 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.
- *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.

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: - 6.9×10^7 /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 & lead to off-odours & 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

DOSE RATES (Follow dilution rate)

M101 - 40 In use concentrate can be further diluted dependant on application to a maximum of 1:9

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

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

2. **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 | 1:9 | 1 litre per 10 tons Animal weight. | Weekly for two weeks, then 500ml per week | Spray over surfaces. |
| Floors | | 10 litres diluted / 120 m ² | 5 litres diluted /120 m ² | Spray on surface. |
| Effluent pits Ponds & Slurry tanks | | 1 litre / 250 000 litres | Weekly | Spray over cone. |

3. **SEWAGE PLANTS** - general aid to processing.

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

CONCLUSION: *M101 - 40 In use concentrate* is designed as a bio-technical aid to treatment of organic waste material offering the following advantages: - Liquefaction & reduction of solids, reduction of odor, 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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