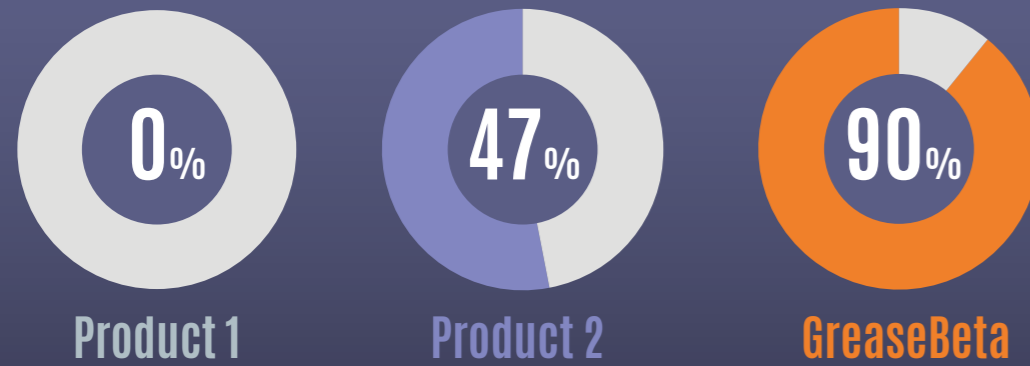


**Grease Beta fluid does not contain any emulsifying agents, caustic or solvents, solely using bacteria for the biological breakdown of FOG making it impossible for FOG to reform downstream**

Results of a 2016 Cranfield University study of GreaseBeta against 2 other commercially available products



Product 1 showed 0% fat degrading ability, whereas Product 2 degraded 47%.

**Grease Beta showed the most impressive performance, having degraded 90%.**

## The GreaseBeta Edge

Grease Beta fluid consists of a blend of naturally occurring bacterial strains that have been isolated from the environment for their ability to break down FOG and organic matter from all the major food groups.

### Grease Beta Dosing Systems

The GreaseBeta pump ensures that the product is dosed in correct quantities at specific times during the day. The unit is self contained, does not need any operation/support by local staff and is serviced every 3 months by an engineer.

**GreaseBeta**  
Grease Management System

Fully managed systems for the degradation of fats, oils and greases

- GreaseBeta **Bio GRU**
- GreaseBeta **Food Solid Strainer**
- GreaseBeta **Dosing Unit**
- GreaseBeta **Aer8**
- GreaseBeta **Bio Blocks**

For more information:

[www.cbiouk.com](http://www.cbiouk.com)

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Tel: 029 2067 4098 | Fax: 029 2067 4091 | Company Registration: 02775682



# Keep your drain lines blockage free

How nature's smallest organisms solve the biggest grease management problems



**GreaseBeta**  
Grease Management System

# How GreaseBeta bacteria degrade fats, oils, grease and other kitchen waste

## Bacteria

Bacteria are single celled, living organisms that have developed over billions of years. They were the first life forms to appear on Earth and are Nature's own 'cleaners and degraders' – without them, we would be overwhelmed with organic waste! The ultimate survivors, they can be found everywhere – when scientists talk about finding life on other planets, they mean bacteria! There are more of them on a person's hand than there are people on the entire planet!

Bacteria are in the air we breathe, the ground we walk on, the food we eat—they're even inside us! We couldn't digest food without them, plants couldn't grow, waste wouldn't decay and there would be a lot less oxygen to breathe.

As wonderful as bacteria are, the challenge is to find the right bacteria to carry out the right task. GreaseBeta fluid has been continually developed over the last 30 years specifically to degrade the waste products found in commercial kitchens to prevent blockages, ensure legislative compliance and reduce reactive costs. Applied through a GreaseBeta Dosing Unit providing a set amount of fluid to the drains. CBio engineers carry out a quarterly service so no staff maintenance is required.



## To work commercially, all bacteria must be:

- ▶ Safe
- ▶ Adaptable and resilient
- ▶ Effective

## ▶ GreaseBeta fluid is safe:

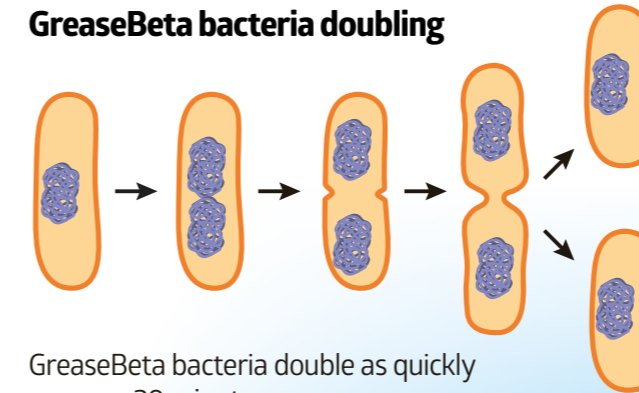
- All strains used are Class 1 bacteria and are safe for human and kitchen use.
- Fermented under sterilised conditions to remove any chance of harmful contamination or incorrect strains.
- Contains preservatives to ensure that the bacteria remain inactive until use and prevent product contamination once dispatched.

## ▶ GreaseBeta fluid is adaptable and resilient

- Consists of spore forming bacteria which have a number of advantages:
  - Spore formation allows survival in extreme environments (temperature, pH etc.) for years. The strains chosen work within a wide range of pH, temperature and oxygen levels.
  - The spore coat is highly resistant to temperature, physical and chemical challenges.
  - Spores are highly stable in liquid and solid formulations
  - Spores germinate and flourish in the right conditions, i.e. when warmth, nutrients and water are present. The bacteria revert to the spore form when conditions deteriorate, germinating when conditions become favourable once more. This provides valuable residual protection.

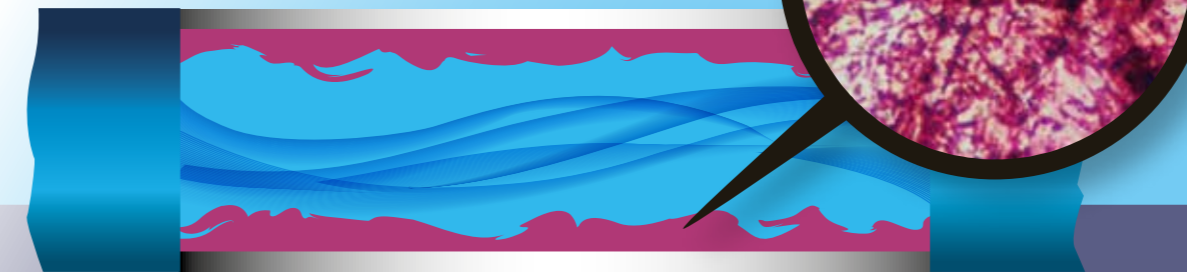
- The bacteria in GreaseBeta fluid can double as quickly as every 20 minutes, using enzymes to break down organic matter for energy and growth, allowing them to overcome the many challenges within drain lines.
- Forms biofilms on the interior surfaces of grease traps and wastewater pipework, providing a continuous and renewable source of enzymes for the removal of FOG and other organic matter.
- Daily dosing ensures that a thriving biofilm is maintained while allowing the bacteria to spread with the flow of water.

## GreaseBeta bacteria doubling

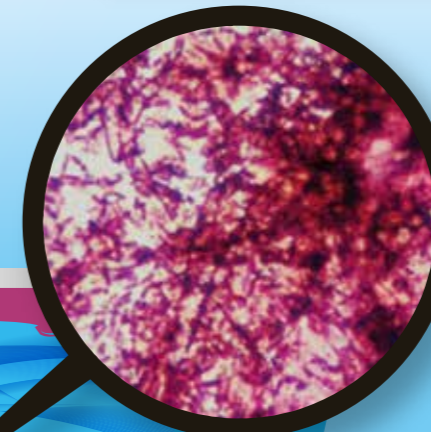


GreaseBeta bacteria double as quickly as every 20 minutes

## The GreaseBeta process



GreaseBeta bacteria create a biofilm on interior surfaces of pipework



The GreaseBeta bacteria

## ▶ GreaseBeta fluid is effective

All bacteria are not the same! Bacteria produce enzymes that break down specific waste into smaller compounds so they can be absorbed by the cells to allow them to grow and flourish. If the wrong enzymes or less effective enzymes are produced, they will have no or little impact on the waste.

## Species and strain is vital to how products behave and what they can do

### Species:

- *Bacillus subtilis* can be used as a probiotic, ingested by humans and animals.
- *Bacillus cereus* causes food poisoning.
- *Bacillus anthracis* causes anthrax!

### Strain:

- *Bacillus subtilis* GB03 is used as a bio-pesticide.
- *Bacillus subtilis* DS098 is used for the industrial production of amylase enzyme.
- *Bacillus subtilis* DSM 5750 is used as probiotic for farm animals.



Hundreds of strains were analysed and tested by CBio to identify those that produced the most effective enzymes for the degradation of fats, starch, cellulose and protein:

<b>Lipase</b>	breaks down fats, oils and greases
<b>Amylase</b>	breaks down starch, e.g. potatoes, pasta
<b>Cellulase</b>	breaks down cellulose, e.g. vegetable matter
<b>Protease</b>	breaks down proteinaceous matter, e.g. meats, cheeses.

## Examples of issues caused by FOG

FOG causes fat bergs to form in public sewers resulting in environmental damage and significant clean up costs



Blockages can become so severe that fat seeps into the surrounding infrastructure



## Why choose a GreaseBeta system?

High performing products reduce costs and on site problems

Ensures compliance with legislation and health and safety

Safe and environmentally friendly systems

Cutting edge technology developed from nature



Fully managed and maintained systems deliver peace of mind