Type: Biological grease and fat trap treatment	**Mechanism:** High-lipase producing bacterial and microbial consortium — rapid enzymatic F.O.G. digestion	**Primary Outcome:** F.O.G. permanently converted to water and carbon dioxide; trap pump-out cost and odour eliminated

GEARTH BioTrap is an odour-reducing grease and fat trap treatment built on an intelligent bacterial and microbial consortium that delivers rapid enzymatic digestion of fats, oils and greases in fat traps and drain lines. The advanced cultures produce the specific enzymes required to break down the fats, oils, greases, proteins and starches present in a trap environment, then use those components as food sources. BioTrap is a proprietary super-high-lipase (fat-digesting) enzyme producing bacteria, which is the source of its consistent performance.

Regular dosing removes the underlying problem rather than relocating it: the grease is permanently converted into water and carbon dioxide. South Africa's sewer and stormwater reticulation networks are under severe stress from grease loading — the sewer network is engineered to accept human waste and the stormwater network rainwater only. Anything else, grease and fat in particular, degrades both systems and ultimately causes blockages. BioTrap addresses that load at the trap, where it is cheapest to solve.

1 WHY GREASE TRAPS MATTER

A grease trap slows the flow of greasy wastewater so that grease and water separate: the water continues to the sewer while the grease floats and is retained in the trap. Untreated, that retained grease reduces sewer capacity through the formation of greasy solids, causes blockages and pump failures, and produces sewer overflows that constitute a direct public health hazard. It also reduces wastewater plant efficiency, driving up operating and maintenance costs and degrading the quality of effluent discharged into water bodies.

All premises engaged in cooking and preparing food for other people are required to install and maintain an adequately sized grease trap. This includes, but is not limited to, restaurants, takeaway outlets, hospitals, hotels, bakeries, butcheries, schools and supermarkets.

2 THE COST CASE

A fat trap not treated with BioTrap progressively congeals under the excess and constant daily inflow of hot fats, oils and greases. As that mass cools it coagulates into a solid mass that can no longer flow into municipal lines, at which point a licensed waste oil collector must physically remove it — a recurring cost running into many thousands of Rands. The removed grease still requires remediation offsite, which moves the problem out of sight rather than resolving it.

Worse still, traps merely cleaned with conventional chemical products can appear to work while the fat has only temporarily changed state, converting straight back to fat downstream where it blocks drain lines, causes costly blockages and creates significant challenges for effluent sewer treatment plants. GEARTH BioTrap digests the F.O.G. instead of relocating it.

3 ODOUR CONTROL

Grease and fat traps that are not treated with bio-enzymes are generally a major source of repulsive odour, presenting owners of food processing plants, kitchens and canteens with a serious problem. The odour problem is badly exacerbated in warmer summer periods. GEARTH BioTrap provides an immediate improvement in odour control which improves markedly with time, often to the point of total odour elimination.

4 WASTEWATER BYLAWS & COMPLIANCE

Effluent water leaving a fat trap and entering the general waste stream headed for sewer plants must comply with the effluent limits set by the local municipality, including but not limited to pH and C.O.D. Waste oil, grease and fats must be collected by a licensed waste oil collector at regular intervals, and a copy of the waste transfer certificate must be kept for at least two years and made available for inspection as required by the applicable Wastewater By-Law. This material may not be disposed of into general waste.

Where a grease trap is not properly maintained, the occupier may be held liable for damage caused to the sewer system, the industrial effluent permit may be withdrawn, and the entire industrial effluent discharge may be blocked off from the municipal sewer — with severe consequences for the business concerned. Regular BioTrap dosing keeps the trap under biological control and supports these maintenance obligations.

5 WHEN TO DOSE

Grease traps must not be dosed during operating hours, when hot oils and hot water impair bacterial survival and enzyme function. Dose after hours or at kitchen closing to minimise dilution from the constant inflow and discharge of water, and to work with the cooler trap temperatures that favour bacterial growth and enzyme production.

Use with the GEARTH Advanced Dosing System to fully automate after-hours trap treatment — reliable, unattended dosing at the optimum time, every day, without relying on kitchen staff.

6 DOSE RATE PER TRAP

Trap Size	Typical Sites	Grade	Dose
Up to 50 L	Restaurants, canteens, hotels, lodges	BioTrap RTU	833 ml daily (25 L per month)
Above 50 L	Communal shared traps, outdoor traps, food processing plants, butcheries	BioTrap 10X	833 ml daily (25 L per month)

7 GREASE TRAP MAINTENANCE & GOOD PRACTICE

- The kitchen occupier should regularly collect all food solids accumulated in the grease trap food separator — a SANS 10252-2 requirement — and dispose of them with general waste to keep the trap functioning correctly. This should ideally happen daily.
- Wipe and scrape plates, pans and utensils before washing, and put the food waste into the bin.
- Fit strainers in all sink plug holes and empty their contents into the bin rather than the drain.
- Maintain grease traps and related equipment regularly with GEARTH BioTrap.
- Do not apply bleach, disinfectants, caustics or high-chlorine cleaners into a treated trap — these destroy the active cultures.

8 KEY FEATURES & BENEFITS

- Proprietary super-high-lipase enzyme producing bacteria for consistent fat digestion
- Rapid enzymatic digestion of fats, oils, greases, proteins and starches in traps and drain lines
- Converts F.O.G. permanently into water and carbon dioxide
- Eliminates or greatly reduces licensed waste-oil pump-out costs
- Prevents the downstream re-congealing that conventional chemical trap cleaners cause

- Immediate odour improvement, progressing toward total odour elimination
- Protects sewer capacity and reduces blockage and pump failure risk
- Reduces load and operating cost at the downstream wastewater treatment plant
- Supports compliance with municipal wastewater bylaw maintenance obligations
- Compatible with the GEARTH Advanced Dosing System for fully automated after-hours dosing
- Available as a super concentrate for simple self-manufacturing

9 APPLICATIONS

- Restaurants, takeaway outlets and coffee shops
- Hotel, lodge and conference centre kitchens
- Hospital, school and hostel canteens
- Bakeries, butcheries and supermarkets
- Food processing plants and industrial canteens
- Communal shared and outdoor fat traps
- Kitchen drain lines and gullies upstream of the trap

10 TECHNICAL SPECIFICATIONS

Formulation Type	Bio-enzymatic — intelligent bacterial and microbial consortium producing high levels of lipase
Target Contaminants	Fats, oils, greases, proteins and starches in fat traps and drain lines
Degradation By-Products	Water and carbon dioxide
Odour Performance	Immediate improvement, progressing toward total elimination with continued dosing
Application Points	Grease and fat traps, kitchen drain lines and gullies
Dosing Window	After hours or at kitchen closing — never during operating hours
Grades	RTU (traps up to 50 L), 10X (traps above 50 L)
Automation	GEARTH Advanced Dosing System for automated after-hours dosing
Downstream Effect	Reduces greasy solids formation, blockage risk, pump failure and wastewater plant load
Chemical Incompatibility	Bleach, disinfectants, caustics and high chlorine concentrations destroy the active cultures
Country of Manufacture	South Africa

11 PACKAGING, STORAGE & SHELF LIFE

Packaging	5 L and 25 L containers, and 1 000 L flow bins. Super concentrate available for simple self-manufacturing.
Shelf Life	Stable for 12 months at ambient temperature, out of direct sunlight.
Storage Conditions	Store sealed at ambient temperature, out of direct sunlight and away from moisture.
Handling	Formulated with bio-based, low-toxicity ingredients. Wear appropriate PPE during dosing and avoid eye contact.

This Technical Data Sheet reflects GEARTH's current product specification and application guidance at the date of issue. GEARTH (Pty) Ltd continually develops its formulations and reserves the right to revise specifications without prior notice. Because site conditions, substrates and effluent loads vary, the user remains responsible for confirming suitability for a specific application — GEARTH technical staff are available to assist with site-specific dosing and trial protocols. Handle all products in accordance with the applicable Safety Data Sheet and South African health, safety and environmental legislation.