High Grease Food Processing

BIO-SYSTEMS INTERNATIONAL

Specifications

Form:	Free-flowing granular powder
Color:	Brown
Nutrient Content:	Biological nutrients & stimulants
Plate Count:	5 billion per gram

Packaging

250 grams water soluble packages protected by a foil overwrap. 10 kilo per plastic pail.

Storage

DO NOT FREEZE! Store in a cool dry location. Do not inhale dusts, avoid excessive skin contact. SEE M.S.D.S.

Application Instructions

Open the foil packet and add the water soluble pouches directly to the system.

Sewers

Flow Rate	Initial Dosage	Maintenance**
Up to 25,000gpd	1lb. per week	½ lb. per week
Up to 50,000gpd	1lb. 2x week	1 lb. per week
Up to 100,000gpd	1lb. every other day	1 lb. 2x week
Up to 250,000gpd	1lb. per day	1 lb. 3x week

Treatment Plants

Flow Rate	Initial Dosage *	Maintenance**
Up to 250,000 gpd	15 lbs.	¼ lb./day
Up to 500,000 gpd	25 lbs.	½ lb./day
Up to 1 mgd	50 lbs.	1 lb./day
Up to 5 mgd	50 lbs. per mgd	1 lb./day per mgd
Up to 12 mgd	50 lbs. per mgd	¾ lb./day per mgd
Up to 100 mgd	30 lbs. per mgd	½ lb./day per mgd

*** Spread this initial dosage out over the course of 10 days.**
**** Add as regularly as possible. If it is required to miss one day, add that day's product with the next dosage.**

Dosage rate will vary with flow rates, retention times and system variations. The rates above are for a typical, well maintained system.

Activated Sludge Systems

Activated Sludge Systems include various process flow sheets for example: Extended Aeration, Contact Stabilization, Step Aeration, Oxygen Activated Sludge, SBR. The application rate for all products is based on the average daily flow rate to the aeration basin, excluding the return sludge stream.

Trickling Filter and Rotating Biological Contactors

The application rate for all products is based on the average daily flow rate to the filter or contactor, excluding any recirculating process stream.

Lagoon Systems

For aerated lagoon systems, the application rate is based on the average flow to the lagoon.

Case History 836

This 1.5 MGD waste treatment plant pumped F.O.G. from the scum pits directly into the digester. Over the years build up accumulated in the digester, decreasing digestion efficiency and methane production while increasing the amount to be wasted. They began feeding BioBug F.O.G. Free microorganisms directly into the scum pits to liquefy and degrade the F.O.G. being pumped into the digester. In this state, further digestion of this material in the digester occurs easier. BioBug product also helped in reducing total volatile solids in the digester. The use of BioBug product in water soluble bags make application easy, and dosage rates accurate.

Upon annual internal inspection, the digester looks cleaner with less build up. Application of BIO-SYSTEMS product has been ongoing for several years.

Case History 961

City of Boston, Massachusetts has used BIO-SYSTEMS product since 1993 for routine, cost effective sewer maintenance.

Your local Distributor is:

1-800-232-BUGS
2847
www.BIOBUGS.com

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Product Description
BioBug FP contains a specially formulated range of adapted high performance microorganisms developed for use in the biological wastewater treatment of greases, fats and oils. As well as microorganisms, BioBug FP contains surface tension depressants and penetrants which loosen and liquefy heavy grease deposits, thereby assisting in their biodegradation.

When used as directed BioBug FP is safe and harmless to people, clothing and the environment and is completely biodegradable. When applied to effluent treatment facilities, the formulated product BioBug FP assists in:

- Helping to establish a biomass capable of handling these difficult wastes.
- Reducing the accumulation of unsightly deposits of grease and fat. Increasing the efficiency of overloaded treatment systems.
- Preventing the blocking, ponding and possible collapse of filter-bed media.
- Significantly reducing odor problems.
- Enhancing BOD and COD removal while improving sludge settlement.

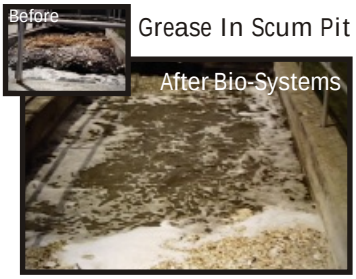
EFFECT
The range of microorganisms contained in BIO-SYSTEMS consists of aerobic and facultative anaerobic bacteria. Selected from their natural environment, these bacteria have been adapted to give optimum performance in degrading greases, fats and oils by providing the normal mechanism for the selection of the biomass population with the opportunity to change its make-up in a matter not usually available.

APPLICATIONS
Typical uses of BioBug FP include:
- Start-up of aerobic biological treatment systems handling wastewaters from milk, processing, cheese-making and food processing.
- Removal of grease deposits and prevention of scum formation in holding tanks, sewers, drains and aeration basins.
- Acceleration of the biological degradation of wastewaters containing high levels of fats, greases and oils.
- Reduction in the unpleasant odors often associated with treatment plants handling fatty wastes.

In addition to the bacterial element of BioBug FP, a number of free enzymes are produced by and are present within the product. The presence of a complex of amylases and lipases, in conjunction with the bacteria, provides the capacity to degrade extra cellular polymers, (which cause foaming), and suppress the growth of the filamentous organisms by affecting the structure of the filaments.

Benefits of BioBug FP:

- **Improve Treatment Plant Performance**
- **Control Filamentous Growth**
- **Reduces Foam**
- **Lower Sludge Production**
- **Controls Grease Build-up**



Case History 951

1500 cubic feet of grease had accumulated in the scum pit and 35 cubic feet was being added each week. Disposal involved manual removal for transporting to a landfill.

A month after adding Bio-Systems products, operators were beginning to notice subtle improvements in floc formation and in the biological community as a whole. The 1500 cubic feet of grease accumulation was beginning to degrade and two months later it was gone.

Bacterial Formulation
Plus
Bio-Enhancer
Plus
Micronutrient

Other benefits include:

- Regular application lowers maintenance costs for grease blockages in treatment plant.
- Controls sulfide odors.
- Treatment is effective for controlling foam.
- Prevents grease buildup in digesters.
- Improves performance in the treatment plant.

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