# Anaerobic Digesters

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 resealable overwrap. 10 kilos 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 resealable overwrap and add the water soluble pouches directly to the anaerobic digester.

### Treatment Plants

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

### Anaerobic Lagoon Systems

For anaerobic lagoon systems, the application rate is based on the total volume of the anaerobic lagoon:

| | lbs/5,000 gallons |
|---|---|
| Anaerobic lagoons < 100,000 gallons | 1.0 twice a week |
| Anaerobic lagoons > 100,000 gallons | 0.3 daily |

### Anaerobic Lagoon Systems

BIO-SYSTEMS product is applied to the primary digester of an anaerobic sludge digestion plant, at a rate based on the volume of the primary digester. Contact your local BIO-SYSTEMS Wastewater Specialist before applying product to digester which has stopped methane production.

NOTE: Application rates and locations will vary with climate, current biological conditions within the plant, and other plant functions. A BIO-SYSTEMS Wastewater Specialist will be happy to provide individual consultation. Please contact your local Distributor or contact BIO-SYSTEMS Technical Support at the tol-free number provided below.

## Case History 836

This 5 MGD waste treatment plant pumped F.O.G from the scum pits directly into the digesters. Over the years build up accumulated in the digesters, 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. The product also helped in reducing total volatile solids in the digester. The use of the BioBug in water soluble bags make application easy, and dosage rates accurate.

Upon annual internal inspection, the digesters look cleaner with less build up. Use of the BIO-SYSTEMS product has been ongoing for several years.

## Case History 1149

This Ohio municipality has used BIO-SYSTEMS product since 1998 for routine, cost effective scum blanket control and increased gas production.

Anaerobic Environments

**Your local Distributor is:**

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1-800-232-BUGS
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**Product Description**
BioBug AD contains a specially formulated range of adapted high-performance microorganisms developed for use in the biological wastewater treatment of greases, fats and oils in anaerobic digesters. As well as microorganisms, BioBug AD contains surface tension depressants and penetrants which loosen and liquefy heavy grease deposits, thereby assisting in their biodegradation.

When used as directed BioBug AD is safe. It is harmless to people, clothing and the environment and is completely biodegradable. When applied to effluent treatment facilities, BIO-SYSTEMS product 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 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 AD include:
- Start-up of anaerobic biological treatment systems handling tough wastewaters from high-grease industries.
- 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 AD, 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 AD:

- **Improve Treatment Plant Performance**
- **Reduces Foam**
- **Lower Sludge Production**
- **Controls Grease Caps and FOG Build-up**
- **Improves Methane Production**

Improves methane production by changing fats, oils and grease into carbon dioxide and small volatile acids.

Reduces and often eliminates grease caps which form inside the anaerobic digestor. This saves you time and money on disposal fees incurred from physical removal, as well as maximizes digester capacity and efficiency

***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.
- Improves recovery after toxic or load related upsets
- Improves performance in the treatment plant.

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