

Chlorinated Organics



BIO-SYSTEMS
INTERNATIONAL

BioBug Series - Chlorinated Organics

BioBug CO contains a specially formulated range of adapted, high performance microorganisms for use in biological wastewater treatment plants treating chlorinated organics.

BioBug CO, with its aerobic and facultative anaerobic microorganisms establishes and maintains a biomass which provides greater resistance to the effects of organic inhibitors present in wastewater. BioBug CO ensures that the natural mechanism for the selection of the biomass population is presented with a range of selected microorganisms. These aerobic and facultative anaerobic bacteria have been taken from their natural environment and then adapted to give optimum performance.

BioBug CO will degrade chlorinated organics and increase the performance of the treatment plant and waste handling capacity of the biomass by:

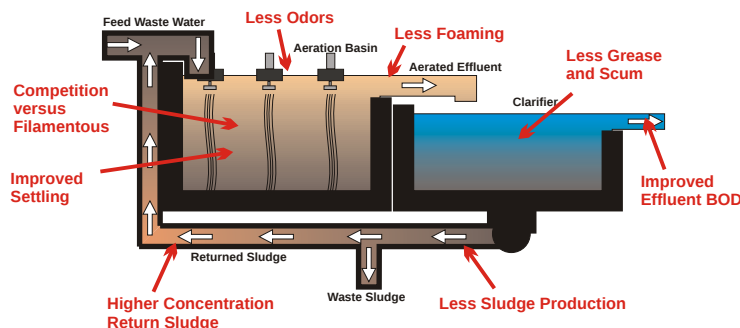
- stimulating the rapid establishment of the biomass.
- increasing the efficiency of BOD and COD removal.
- combating the hydraulic and organic overloading in treatment plants.
- stabilizing the process of biological degradation.
- improving sludge settlement by liquefying and breaking down low density organic material.
- reducing the foaming of aerated basins and lagoons.

Benefits of BioBug CO:

- Helps start-up in new plants
- Improves effluent quality
- Reduces plant upsets
- Increases overall efficiency
- Controls filaments
- Lowers odors and foam

Bacterial Formulation **Plus** **Bio-Enhancer** **Plus** **Micronutrient**

- Enhance organic removal efficiency of biological systems, providing lower effluent BOD, COD, and TSS.
- Enhance solids settling where it has been disturbed by loading fluctuations.



- Accelerate the start-up of new systems and aids recovery after upsets.
- Improve cold weather operation.
- Mitigate effects of chlorinated related loadings and toxic shocks.
- Reduce sludge production.
- Lower operating costs by reducing chemical consumption.
- Competes against filaments.



1-800-232-BUGS
2 8 4 7
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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 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

Treatment Plants

Flow Rate

Up to 1,000 gpd
Up to 5,000 gpd
Up to 20,000 gpd
Up to 50,000 gpd
Up to 250,000 gpd
Up to 500,000 gpd
Up to 1 mgd
Up to 5 mgd
Up to 12 mgd
Up to 100 mgd

Initial Dosage

½ lbs. per day for 3 days
½ lbs. per day for 3 days
5 lbs.*
8 lbs.*
15 lbs.*
25 lbs.*
50 lbs.*
50 lbs. per mgd*
50 lbs. per mgd*
30 lbs. per mgd*

Maintenance**

½ lb. per week
1lb. per week
1½ lb. per week
2 lb. per week
¼ lb. per day
½ lb. per day
1 lb. per day
1 lb. per mgd per day
¾ lb. per mgd per day
½ lb. per mgd per day

* 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. The application rate for all products is based on the average daily flow rate to the aeration basin, excluding the return sludge stream. For seasonal or widely fluctuating flows, contact your BIO-SYSTEMS technical representative.

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. For seasonal or widely fluctuating flows, contact your BIO-SYSTEMS technical representative.

Lagoon Systems

- For aerated lagoon systems, the application rate based on the average flow to the lagoon.
- For facultive lagoon systems, the application rate is based on the lagoon surface area:

Day 1 through Day 5 20 lbs. per acre per day
Day 6+ 2 lbs. per acre per week

- For anaerobic lagoons, the application rate is based on the total volume of the anaerobic lagoon.

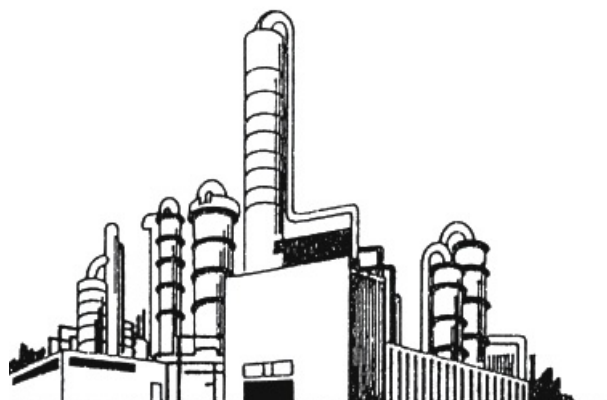
<100,000 gallons 1 lb. - 2x per week per 5,000 gal.
>100,000 gallons ½ lb. - 1x per day per 5,000 gal.

- For lagoons in cold climates, commence program when the water temperature is a least 50°F



Case History 1004

A Chemical Manufacturer operates a batch production system for intermediate chlorinated organics. The waste water is highly variable with both biodegradable and non-biodegradable organics. A powdered carbon-supplemented activated sludge system is used to treat the waste. To monitor the biological performance aspect of the system the operators measure Ortho Chloro Aniline (OCA) in the effluent. Before the regular use of BIO-SYSTEMS the OCA level averaged 132 mg/l with peaks up to 1673 mg/l. After the addition of BIO-SYSTEMS the average OCA was 18 mg/l with peaks to 489 mg/l.



Your local Distributor is:

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