

BIOLOGICAL CLEANER AND MARINE SEWAGE PLANT TREATMENT BIO PC-20

PRODUCT DESCRIPTION

A powerful biologically active powdered formulation containing a blend of patented bacterial strains, specifically developed to deal with sewage wastes.

Directions for use.

BIO PC-20 is designed to degrade excess residual waste products in shipboard sanitation pipework systems, holding tanks and marine sewage treatment plant. The specialised strains in **BIO PC-20** will digest grease, fats, sewage, starch and other organic compounds. The degradation of paper, protein and waste product residuals is greatly increased and the odours that these produce are reduced.

The bacteria in **BIO PC-20** will colonise the waste 'soil', which lines the pipework/tank system, and degrade the waste until the system is clean. The biological activity in the marine sewage treatment plant is greatly increased so improving its ability to deal with more waste. The obnoxious smells in toilet areas and scuppers normally associated with overloaded or blocked systems are eliminated.

AREAS OF USE

* *Pipe cleaning*- Maintenance dosing will keep galley and sewage pipes clean and clear of organic residual wastes.

* *Tank Cleaning*- Holding tanks and sewage treatment plant can be cleaned periodically or prior to entry without the use of dangerous toxic chemicals and men having to enter tanks.

* *Sewage Treatment Plant*- Direct dosing to the sewage treatment plant or via the nearest toilet will greatly enhance the biological activity and keep the plant at peak operating efficiency.

Detailed Applications

Pipe cleaning - A liquid solution should be prepared by mixing 0.25 kg. of **BIO PC-20** in 20 litres of hand hot (35 C) fresh water and left for 15 - 30 mins (stirring periodically) for the bacteria to activate. Whilst constantly agitating this solution 0.5 litre should be dosed into sinks, scuppers, showers, drains waste disposal units etc. each evening until the blockage is cleared. A maintenance dose once or twice a week can then be applied to keep the pipes in clean condition. Acid/caustic/toxic type cleaners should not be used as these will kill off the bacterial action in the pipes. Alternatively, the pipes should be isolated and filled with the solution and left for up to forty-eight hours before draining. If necessary further applications should be made until the drainings run clear.

Tank Cleaning - Tanks and sewage treatment plant should be flooded and pumped empty to clear excess soil before cleaning. Holding tanks must be fitted with an air manifold connected to a low pressure air line of sufficient volume to gently turn the mass of water within the tank. In sewage treatment tanks the normal air supply will suffice. The tank should be filled to 75% capacity with fresh or seawater and the air supply turned on. Approximately 0.5kg. of **BIO PC-20** per gallon of fresh hand hot (35 C) water should be mixed and left for 10-15 minutes before dosing the tank. Dosing can be either direct or via the nearest toilet. The tank should then be filled and left with the air on for at least 48 hours. The dose rate should be approximately 0.5kg. per 400 litres tank capacity with a minimum dose of 5kg. Although **BIO PC-20** is designed for use in cold (4C minimum) seawater, performance will improve with hot (35 C) fresh or seawater.

Sewage Treatment Plant - Ineffective or septic sewage treatment can be re-activated and maintained on peak operating efficiency by dosing **BIO PC-20** direct into the tank or via the nearest toilet. To re-activate the plant, 0.5 - 1kg of **BIO PC-20** should be mixed with 4-8 litres of hot (35 C) fresh water, left for 10-15 minutes for the bacteria to activate, and then dosed into the tank. 0 Maintenance dosing of 0.1 - 0.25kg will keep the system operating effectively.

FEATURES AND BENEFITS

* Clears pipes and systems blocked by organic water matter.

* Cleans sewage holding tanks with out the need for entry of personnel.

* Re-activates biological activity in systems which have been turned septic by the use of

aggressive cleaning products.

* Eliminates the odours associated with systems which use of aggressive cleaning

have been turned septic by the products.

* Extremely cost-effective, saves time, money and manpower.

* Eliminates the need for hazardous chemicals.

* Keeps systems in optimum operations condition.

Applications

* For cleaning blocked pipes and systems where the pipes 'fall' is insufficient or the system is overloaded.

* Cleaning sewage holding tanks without the need of entry.

* Restarting septic sewage treatment plant.

BIO PC20-BIOTREATMENT OF ORGANIC WASTE

INTRODUCTION

Organic wastes contain a mixture of complex products which usually have to be degraded to simple compounds before natural assimilation of safe disposal. If time allows, nature can carry out the necessary hydrolysis of such complex materials by the action of enzymes derived from micro-organisms present in the sewage. Due to demands made on modern processing units, however, insufficient time can severely limit the natural breakdown cycle, resulting in excess waste having to be physically removed to a safe disposal area. Modern cleaning systems and hygiene aids also tend to create adverse conditions, reducing natural flora to such a level that functional hydrolysis is considerably reduced or ceases altogether. This interruption to a natural cycle can be rectified by the addition of a bio-product assuring sufficient concentrations of enzyme/bacteria to replace natural micro organisms so destroyed.

BIO PC20-MODE OF ACTION

The nutrient salts in Bio PC20 create a perfect medium for the growth of the bacteria present. These organisms will secrete enzymes capable of attacking proteins, carbohydrates and fats. Such hydrolysis and the continued application of BIO PC20 will maintain a liquefied waste and reduce offensive odours.

PRODUCT TYPE/ACTIVITY

Bio PC20 is a standardised blend of enzymes, non-harmful bacteria and nutrient salts to the following specification:-

Form: Buff coloured, free flowing powder

Enzyme derivative: Bacillus subtilis

organisms:

Bacteria: 1.7×10^7 organisms/gm

OPTIMUM pH/TEMPERATURE

pH optimum: 5.0 - 7.5

Temperature: Up to 35C

tolerance:

Effluent pH outside this range is usually either very acidic or alkaline and in practice requires pre-treatment before disposal.

INACTIVATION OF BIO PC20

High concentrations of heavy metals will inhibit the activity of the system. The presence of chlorine bleaches etc, can also have a detrimental effect and neutralisation of these inhibitors is necessary before application of Bio PC20.

PRODUCT AVAILABILITY

Bio PC20 is readily available in powder form packed in 25kg containers. However we normally pack to a customers requirements.

The material should be stored in cool, dry conditions at no more than 15°C for a shelf life of 24 months.

APPLICATIONS

Due to the similarity in composition of organic wastes and the universal action of Bio PC20 many different areas of application are suggested for the product. In this aspect the material can be used for domestic waste, industrial and for agricultural effluent problems, allied with aiding in the cleaning of heavy soiled buildings etc.

The addition rate of Bio PC20 will vary depending on the severity of the problem and some flexibility in dose rate may be necessary due to local conditions. Various uses for the product are exemplified in the tables which follow.

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1. AGRICULTURAL WASTE - reduction of high solids/crusting of waste; liquefaction and cleaning (i.e. cowsheds, piggeries, poultry farms etc.

AREA	INITIAL DOSE RATE	REGULAR MAINTENANCE RATE	METHOD OF APPLICATION
BUILDINGS FLOORS	1KG PER 10 TONNES ANIMAL WEIGHT	WEEKLY FOR TWO WEEKS, THEN 500GM PER WEEK	SLURRY IN 10 GALLONS OF WATER AND SPRAY OVER SURFACES
EFFLUENT PITS PONDS	1 KG/5000 GALLONS	½ KG/5000 GALLONS PER WEEK	SLURRY IN 10 GALLONS OF WATER AND SPRAY ON SURFACE
SLURRY TANKS	1 KG/50,000 GALLONS	REPEAT FOR 3 DAYS, THEN 500GM/50,000 GALLONS PER WEEK	SLURRY IN WATER AND SPRAY
MANURE	100 GM/10,000 BIRDS	WEEKLY	SLURRY IN 5 GALLONS UNDER OF WATER AND SPRAY CAGES OVER CONE.

2. SEWAGE PLANTS - general aid to processing

AREA	INITIAL DOSE RATE	REGULAR MAINTENANCE RATE	METHOD OF APPLICATION
TRICKLING FILTERS	1 KG/1,000,000 GALLONS	500 GM/1,000,000 GALLONS PER WEEK	ADD TO PRIMARY SETTLING TANK
ANAEROBIC DIGESTERS RETENTION PONDS ACTIVATED SLUDGE	500 GM/10,000 GALLONS	REPEAT FOR 3 DAYS THEN PER WEEK	ADD TO INFLOW PIPE

3. ABBATOIRS - for easier handling of high protein/fats in concentrated areas.

AREA	INITIAL DOSE RATE	REGULAR MAINTENANCE RATE	METHOD OF APPLICATION
TOTAL EFFLUENT	4 KG/100,000 GALLONS PER DAY	REPEAT FOR 3 DAYS THEN ½ KG/100,000 GALLONS PER DAY	ADD POWDER MANUALLY
DRAINS GREASE TRAPS	100 GM/100 GALLONS CAPACITY	50 GM /100 GALLONS PER WEEK	SLURRY IN 1 GALLON OF WATER, POUR THROUGH DRAIN

4. FOOD WASTE - DOMESTIC & INDUSTRIAL - reducing blockage of drains, waste pipes; treatment of effluent not on main drainage; reduction of odours.

AREA	INITIAL DOSE RATE	REGULAR MAINTENANCE RATE	METHOD OF APPLICATION
EFFLUENT TANKS, CESS PIT, SEPTIC TANKS	400 GM PER TYPICAL HOUSE	100GM PER MONTH	THROUGH ANY CONVENIENT ACCESS POINT e.g. TOILET
GREASE TRAPS	100GM	50GM PER MONTH	DIRECT
DRAINS	15GM(2 TEASPOONS)	15GM PER MONTH	DIRECT
PORTABLE TOILET	15GM(2 TEASPOONS)	15GM EVERY EMPTYING	DIRECT

CONCLUSIONS

Bio PC20 is designed as a bio-technical aid to treatment of organic waste material offering the following advantages:-

Liquefaction and reduction of solids

Reduction of odour.

Allows easier disposal of waste.

Maintains natural cycle of reaction.

Aids general cleaning of soiled areas.

Safety in operation of effluent processing.

Offers a viable alternative to current processing techniques using a bio-technical approach.

TECHNICAL SERVICE

The information contained on this leaflet is to the best of our knowledge, true and accurate, but any recommendations or suggestions, which may be made, are without guarantee since the conditions of use are beyond our control. No licence of immunity under any patents is granted or implied.

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