

# Marine Environment



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## Specifications

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

## Packaging

4, 8 & 16 oz. water soluble packages protected by a resealable overwrap. 25 lbs. 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	Initial Dosage	Maintenance**
Up to 1,000 gpd	½ lbs. per day for 3 days	½ lb. per week
Up to 5,000 gpd	½ lbs. per day for 3 days	1 lb. per week
Up to 20,000 gpd	5 lbs.*	1½ lb. per week
Up to 50,000 gpd	8 lbs.*	2 lb. per week
Up to 250,000 gpd	15 lbs.*	¼ lb. per day
Up to 500,000 gpd	25 lbs.*	½ lb. per day
Up to 1 mgd	50 lbs.*	1 lb. per day
Up to 5 mgd	50 lbs. per mgd*	1 lb. per mgd per day
Up to 12 mgd	50 lbs. per mgd*	¾ lb. per mgd per day
Up to 100 mgd	30 lbs. per mgd*	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 local 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 local 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 lagoons in cold climates, commence program when the water temperature is a least 50°F



## Case History 1004

### Chemical Processing

A batch chemical production facility operates a 20,000 gpd package activated sludge system treating waters containing 6% salt solution. 937 was used to aid recovery after high chemical loads adversely affected performance.



## Case History 978

937 was used for beach and rocky shore clean-up after a spill of crude oil covered the shores of this South American coast.

*Petroleum Compounds, Phenol, Polynuclear Aromatics, Sulfides, Alcohols and Similar Solvents*



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# Marine Environment

## Description

937 contains a specially formulated range of adapted high performance microorganisms. 937 was developed for use in the biological wastewater treatment of refinery and petrochemical wastes in a marine environment. The 937 product also contains a complete micronutrient blend for microbial growth in all conditions. This is particularly important for industrial waste waters. In addition to the bacteria element of 937, a number of free enzymes are present within the product. The presence of a complex of cellulases, hemicellulases, amylases and lipases provide 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.

## Effect

937, with its aerobic and facultative anaerobic microorganisms establishes and maintains a biomass which by providing greater resistance to the effects of organic inhibitors present in waste waters with a high salt content, is able to perform more effectively than the naturally occurring biomass. 937 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.

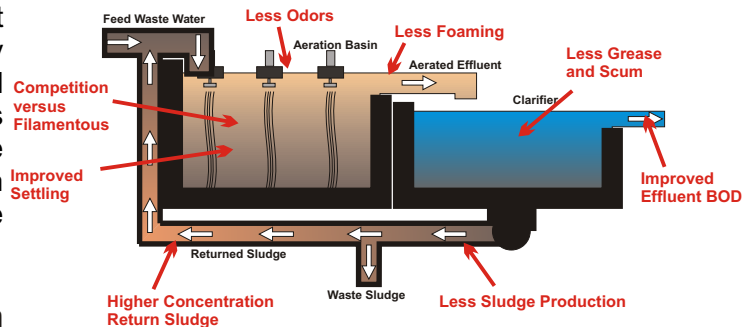
**937 is approved for use under for the classification of drain cleaners by the Canadian Food Inspection Agency.**

## Benefits of 937:

- Enhance BOD and COD removal, while improving sludge settlement.
- Removes oil deposits and prevent scum formation in holding tanks, sewers, drains and aeration basins.
- Accelerates breakdown of unpleasant odors associated with handling oily wastes.
- Increases the efficiency of overloaded systems.
- Reseeds after plant upset.

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

- Enhance organic removal efficiency of biological systems, providing lower effluent BOD, COD, and TSS at high salt levels.
- 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.
- Resistant to sulfides & chlorides
- Aids nitrification by lowering toxicity
- Improves effluent quality
- Reduce sludge production.
- Lower operating costs by reducing chemical consumption.
- Competes against filaments.