

# Advance Biotechnologies of Canada

“Advanced Microbiology for a Clean, Safe Environment”

## ADB 570

### Pulp and Paper Waste

ADB570 contains a specially formulated range of adapted high performance microorganisms and fungi. ADB570 was developed to increase efficiency and decrease costs in biological treatment of pulp and paper wastes. The range of microorganisms selected for the ADB570 products are chosen for their cellulose degradation abilities under both aerobic and anaerobic conditions. To ensure optimal performance of these organisms under the toughest conditions, they are blended together with “high potency” nutrients and stimulants. The production of enzymes including 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.

ADB570, 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 pulp and paper waste waters, is able to perform more effectively than the naturally occurring biomass. ADB570 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.

#### Application Instructions:

##### Treatment Plants

| <i>Flow Rate</i> | <i>Initial Dosage</i>    | <i>Maintenance**</i>      |
|------------------|--------------------------|---------------------------|
| Up to 0.1 lps    | ½ kg. per day for 3 days | ½ kg. per week            |
| Up to 0.5 lps    | ½ kg. per day for 3 days | 1kg. per week             |
| Up to 2 lps      | 5 kg.*                   | 1½ kg. per week           |
| Up to 5 lps      | 8 kg.*                   | 2 kg. per week            |
| Up to 25 lps     | 15 kg.*                  | ¼ kg. per day             |
| Up to 50 lps     | 25 kg.*                  | ½ kg. per day             |
| Up to 100 lps    | 50 kg.*                  | 1 kg. per day             |
| Up to 500 lps    | 50 kg. per 100 lps*      | 1 kg. per 100 lps per day |
| Up to 1200 lps   | 50 kg. per 100 lps*      | ¾ kg. per 100 lps per day |
| Up to 10,000 lps | 30 kg. per 100 lps*      | ½ kg. per 100 lps 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 facultative lagoon systems, the application rate is based on the lagoon surface area:
  - Day 1 through Day 5 20 kg. per 10,000 cubic meters per day
  - Day 6+ 2 kg. per 10,000 cubic meters per week
- For anaerobic lagoons, the application rate is based on the total volume of the anaerobic lagoon.
  - <200,000 liters 1 kg. - 2x per week per 10,000 liters
  - >200,000 liters ½ kg. - 1x per day per 10,000 liters
- For lagoons in cold climates, commence program when the water temperature is a least 50oF (11oC)

#### Benefits of ADB570:

- Accelerates degradation of unpleasant odors associated with handling pulp and paper wastes.
- Increases the efficiency of over-loaded treatment systems.
- Improves BOD and TSS in effluent.
- Reseeds after plant upset.

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