

Advance Biotechnologies of Canada

"Advanced Microbiology for a Clean, Safe Environment"

ADB 500ns

Ammonia Reducing Bacteria Aid

This series of products contain a special blend of microorganisms to provide a consistent seed of both types of nitrifiers for ammonia conversion. The nitrifying bacteria are composed of two groups; Nitrosomonas spp. and Nitrobacter spp. The Nitrosomonas spp. convert ammonia to nitrite and the Nitrobacter spp. convert the nitrite to nitrate. Nitrifying bacteria are autotrophic (able to use carbon dioxide as the sole source of carbon) and are relatively slow growing.

Typical doubling times may be 8 to 16 hours. They are also highly oxygen sensitive, requiring relatively high aerobic conditions for maximum growth rates. Variations in pH, temperature, and the concentrations of organic material also influence the activity and growth rates of nitrifying bacteria. As a result the nitrifying population of many wastewater facilities is frequently destroyed or washed out of the system because of its inability to competitively reproduce at a sufficient rate.

By utilizing selected strains of both Nitrosomonas spp. and Nitrobacter spp., it has been possible to adapt the bacterial cultures to function over a wider range of pH values than those normally encountered in the nitrifying population. Similar adaptation and selection techniques have been employed to increase the toxic threshold limiting concentrations of ammonia, nitrate, and nitrite which may inhibit the growth of these extremely sensitive microorganisms. NS500 series have demonstrated the ability to remove ammonia, nitrite and nitrate.

Specifications:

Form: Free-flowing liquid
Color: Dark Red
pH range: 6.5-8.5
Temperature range: 5C - 43C (40F - 110F)

Application Instructions:

Treatment Plants

<i>Flow Rate</i>	<i>Initial Dosage</i>	<i>Maintenance**</i>
Up to 0.5 lps	½ kg. per day for 2 days	1kg. per week
Up to 5 lps	2 kg.*	2 kg. per week
Up to 25 lps	5 kg.*	¼ kg. per day
Up to 50 lps	10 kg.*	½ kg. per day
Up to 100 lps	20 kg.*	1 kg. per day
Up to 500 lps	15 kg. per lps*	1 kg. per lps per day
Up to 1200 lps	15 kg. per lps*	¾ kg. per lps per day
Up to 10,000 lps	10 kg. per lps*	½ kg. per lps per day

* Apply this amount in one dosage.

** 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 3 10 kg. per ten acres
 - Day 4+ 1 kg. per ten acres
- For lagoons in cold climates, commence program when the water temperature is a least 60oF (16oC)

Benefits of ADB 500ns and ADB550:

- Accelerate the establishment of nitrification in newly commissioned or seasonally operated plants.
- Assist in the maintenance of satisfactory nitrification in plants with a history of inconsistent performance.
- Provide a reseeding mechanism.
- Reseed when adverse biochemical conditions limit or stop nitrification.

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