

Wastewater Solutions

Novozymes BioAid™ 5700

Application Sheet

BioAid 5700 is an algae-based product applied to biological treatment systems to build healthy floc particles and promote settling. By providing a medium for biological growth, it not only aids clarification, but also helps increase biological activity. It is applied with BioRemove™ products to further enhance the performance of the biological system.

Benefits

Building healthy floc particles is the key to good settling in biological treatment systems. Whether in activated sludge or lagoon systems, floc particles need to settle to end up with an effluent low in total suspended solids (TSS). In a healthy system, bacteria will stick together and form floc particles. These floc particles often contain a low, but healthy, abundance of filamentous bacteria that can act as a skeleton for the floc's structure.

Poor flocculation can happen for several reasons. Sometimes a complete lack of filaments can lead to weak floc particles that easily break apart. Floc particles may disperse in the presence of certain toxic chemicals, for example some phenolics and surfactants. If there is an overabundance of monovalent cations and an underabundance of divalent cations in the wastewater, there are often flocculation problems as well. Finally, a microbial community may not contain enough floc formers to develop healthy floc particles.

BioAid 5700 is applied to a biological treatment system with poor floc formation. It provides a backbone for floc formation, improving the separation of the sludge, and thus the sludge volume index (SVI), and preventing sludge bulking. This eliminates the need to add polymer to a treatment system as a clarification aid.

By providing a growth medium, the treatment system is better able to withstand shock loads. Used in combination with BioRemove products, the overall performance of a treatment system can be improved.

Performance

BioAid 5700 has been successfully used in seasonal production campaigns. At the start of a seasonal campaign, the microbial community is not ready to handle the incoming waste stream. As the campaign starts, the biological treatment system has to be enhanced to take the load from the washwater and the effluent from the product processing. Approximately 1 week before the campaign begins, BioAid 5700 is added to the front of a lagoon system or to an activated sludge basin to begin stimulating biological growth within the system. With the start of the campaign, BioAid 5700 is added daily along with a BioRemove product to establish a microbial community and begin COD degradation.

Recommended use

To enhance sludge growth and settling, BioAid 5700 is added to the influent flow of the aerated biological treatment unit. Depending on the system operation, BioAid 5700 is applied daily for a once-through system or periodically for a system where sludge is recycled.

Exact dosage guidelines vary depending on the flow, the type of wastewater, and the system parameters. A typical dose is 8–20 g/m³ (60–150 pounds per million gallons of flow). The dosing frequency can vary depending on the operating conditions at the plant.

These dosages are only guidelines and may require modification for particular treatment situations.

Product characteristics

BioAid 5700 is a gray–beige powder.

Safety, handling, and storage

The product must be stored in a dry place at temperatures above 0 °C, avoiding prolonged exposure to temperatures above 40 °C. After the product is used, the package must be resealed. After handling, wash hands with soap and water.

Novozymes Biologicals FR

Phone: + 33(0) 1 30 15 28 40
Parc Techno. des Grillons
60, route de Sartrouville – Bât 6
78232 Le Pecq Cedex
France
wastewater@novozymes.com

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