

BFL 4400AN

The anaerobic digestion process consists of two separate phases - Phase I and Phase II. In Phase I organic molecules in the influent are converted into simple organic acids such as acetic and propionic acids. This process is known as acetogenesis. In Phase II these simple organic acids are converted to methane. This part of the process is known as methanogenesis. Since the end products of Phase I provide the food for Phase II it is essential that it functions efficiently. Phase I can function under facultative conditions while Phase II is strictly anaerobic. In many cases it is the poor functioning of Phase I that gives rise to problems in anaerobic digestion. Typical situations in which the use of BFL 4400AN is beneficial include: -

- Digester start up**
- Overloaded plants**
- Poor final effluent**
- Poor methane production**
- Re-seeding**
- Shock recovery**
- Poor solids removal**

BioFuture harnesses the power of environmental biotechnology to solve the problems by converting the organic materials into simple organic acids in an exceptionally efficient manner. BFL 4400AN uses harmless, natural micro-organisms and enzymes that control the problem by converting the organic matter to organic acids and thus improving the conversion to methane in a highly effective and environmentally acceptable way.

What is BFL 4400AN?

BFL 4400AN is a bioenzymatic formulation which consists of a specially selected blend of natural micro-organisms (facultative anaerobes, yeast and fungi) and degradative enzymes (cellulose, amylase, protease and

lipase) that have the ability to efficiently convert a wide range of organic material to simple organic acids. Organic materials in the influent such as proteins, carbohydrates and fats are converted to provide a feed stock for Phase II.

The enzymes in the formulation work to speed up the digestion process until the added microbes become active. The facultative strains in BFL 4400AN grow at a relatively fast rate so that they become dominant in the biological population. The wide range of strains has been specially chosen for their ability to produce the broad range of enzymes required to convert the organic matter. The strains in the product work in harmony with the existing biomass and increase its overall efficiency so that plant performance both in terms of methane production, solids removal and final effluent quality is restored as quickly as possible.

The types of systems in which BFL 4400AN can be used include: -

- Anaerobic digesters**
- Anaerobic ponds**
- Anaerobic sludge stabilisation**
- Facultative ponds**
- Municipal landfills**

The microbial strains are produced as single pure cultures, harvested, stabilised on a cereal base and blended together to produce the final product. Extensive checks are conducted throughout the process to ensure purity and quality of the product.

Directions for use

The product as supplied is on a cereal base so it is important that the bacteria are rehydrated before use. This is achieved by adding the required quantity of

product to lukewarm (~30°C) water in a suitable container. Add 1 part product to 10 parts water, stir well and allow to stand for 1 hour before application. Apply the rehydrated product at the entry point to the digester or pond.

Since each application is different and has different characteristics it is important to assess the site before deciding on a dosing programme. The Technical Department provides assistance in assessing the site and devising a treatment programme.

Product safety

The micro-organisms in BFL 4400AN have all been isolated from natural environments. They have not been genetically modified in any way. These microbial strains have been classified as being harmless to humans, animals and plants in accordance with EU and WHO guidelines. The product is subjected to independent testing to ensure that it is free of *Salmonella* and other contaminants.

For further information on dosing programmes and product application please

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