FUCHS NitriStar

EASY UPGRADE FOR NITRIFICATION

FUCHS NITRISTAR SYSTEM

- Pond volumes and surfaces are often not designed for nitrification.
- A higher sludge age, respectively a larger surface area, is required for nitrification.
- The NitriStar system from FUCHS offers a simple and inexpensive system to add additional surface area and oxygen to existing ponds.

BENEFITS

- Large surface area for the nitrifiers (increasing the sludge age)
- Vertical and horizontal flow through NitriStar modules possible
- Perfect for combination with aerated and non-aerated ponds
- For retrofitting and renovation of existing systems in case of overload or strict outlet requirements
- The system is individually sized to pond depth and treatment goal
- High aerator efficiency, independent of water depth
- Aerators are working at the water surface far away from accumulating sludge
- Flexible system due to modular design
- Easy maintenance due to individually removable modules
- Sturdy aerators with many years of operating experience

PROCESS DESCRIPTION

The process objective is to convert ammonia into nitrate. This is an aerobic process.

The FUCHS NitriStar system consists of two components:

- FUCHS OxyStar® Aerator
- Several FUCHS NitriStar modules

The FUCHS OxyStar® Aerator supplies the oxygen required for nitrification. The OxyStar® Aerator introduces the oxygen into the wastewater and provides for thorough mixing of the wastewater. The sophisticated arrangement of the aerator and NitriStar modules ensures that the wastewater-air mixture is optimally transported to the NitriStar modules.

The FUCHS NitriStar modules have the required growth area for the nitrifying, aerobic bacteria. They convert ammonia into nitrate. Excess sludge detaches from the surface and can settle without clogging the modules. A major advantage is the possibility of vertical and horizontal flow through the NitriStar modules. This means that FUCHS NitriStar modules are not as limited by the pond depth as other makes.

Enlarged biofilm surface for nitrification

TECHNICAL DETAILS

The FUCHS OxyStar® Aerator is a sturdy aerator with an excellent aeration efficiency and mixing capability. In ponds it is float mounted, making it easy to install and adapt to fluctuating water levels. It is a virtually maintenance-free aerator. A detailed description can be found in our OxyStar® Aerator brochure.

Each aerator includes several NitriStar modules. The module consists of several parts:

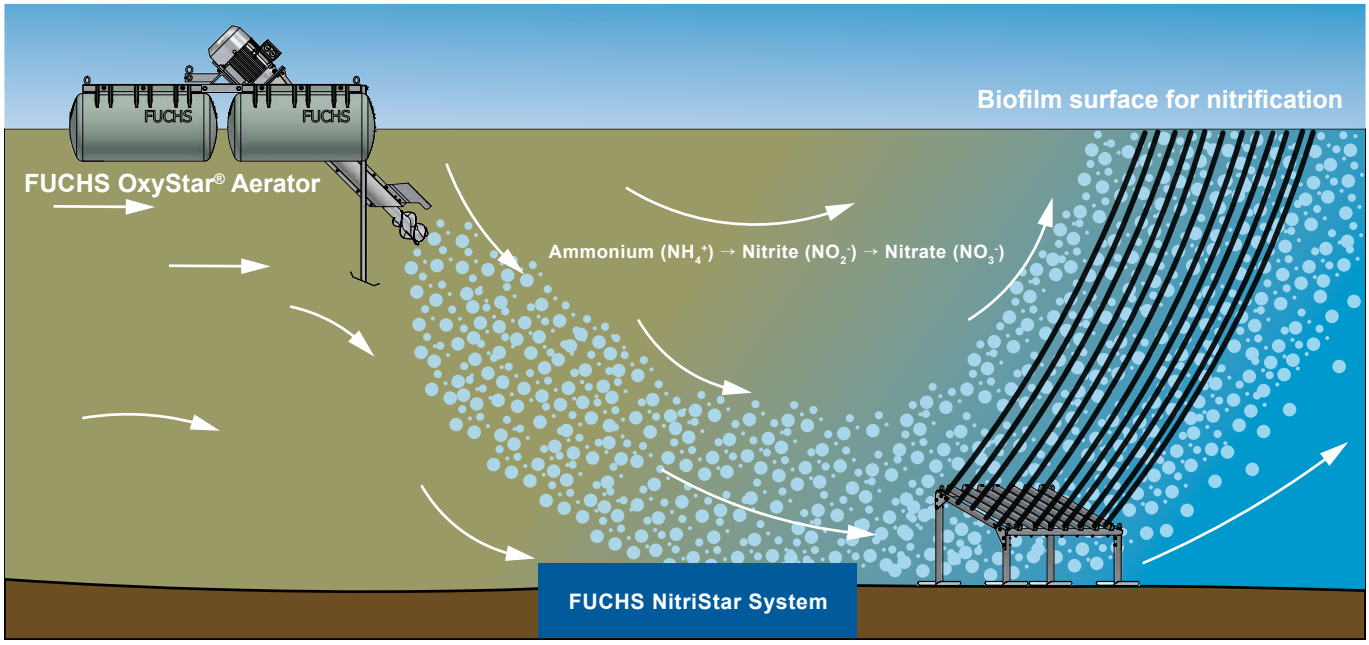
- **Ground mounting**
- **Flexible surface for the nitrifiers**
- **Device for easy installation and later removal of the modules**

Preparing the NitriStar modul for installation

The ground mounting is used to anchor the biofilm surface to the ground. It is made of stainless steel and can be easily lifted by hand. It is placed on the pond ground and does not need to be anchored. The attachment is angled to the ground to allow optimal flow of the air/water mixture through the flexible surface (nitrifiers).

The flexible surface is the core component of the NitriStar modules. It is constructed of clog-proof plastic filaments. The filaments are reinforced for a longer life. Depending on the pond depth, the filament length can be adapted to the project. The number of modules together with the length of the filaments determines the surface area of the entire system and its performance for nitrification. Depending on the application, the surface area of the NitriStar modules is in the range of 100 - 250 m²/m³.

For easy installation and removal, each NitriStar module is equipped with a lifting device. Floats are located on the water surface to indicate the position of the modules and the lifting device.



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A Metawater Company

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