Natrix™

ANOXKALDNES

AnoxKaldnes™ MBBR Technology

Highlights

General characteristics:

- Compact design, small foot-print
- Easy to operate
- Versatile
- Efficient COD removal
- Tolerates very high organic loading
- Handles high levels of suspended solids
- Robust to toxicity
- Recovers rapidly after disturbances
- Single or multistage design possible
- Can be operated at high temperature

Treatment for:

- Pulp and paper mills

Applications:

- COD and BOD removal
- Detoxification

Natrix™ biological process

The Natrix™ biofilm process is AnoxKaldnes implementation of the AnoxKaldnes™ MBBR technology for treatment of pulp and paper industry wastewaters. The first Natrix™ treatment process was introduced in 1994 at Wargön, a Swedish pulp and paper mill close to Lake Vänern. This successful, sturdy, compact and easy-to-operate process has since then been implemented at many pulp and paper wastewater treatment plants all over the world.

The Natrix™ biological process is based on the MBBR technology, which means that bacteria and other microbes are growing on protected surfaces in plastic carriers. The carriers used in the Natrix™ process are designed to promote microbial growth and to handle large amount of suspended solids such as fibers in the wastewater. A Natrix™ process can often be operated without pre-treatment through primary clarification.

A Natrix™ biological process is characterized by simple operation and great tolerance to variations and disturbances. Whether the process is designed in one or several stages depends on the strength and nature of the wastewater and of the effluent discharge limits. When very strict discharge limits are employed, a process comprising two or more stages is usually preferred since it enhances the overall efficiency. Two- or multistage Natrix™ biological processes are designed without making the overall footprint of the system noticeably larger.

The Natrix™ process has been applied successfully for removing specific compounds such as EDTA and for removal of toxicity to fish or other organisms.

Many pulp and paper industry wastewaters are hot, in which case a thermophilic treatment may be of interest. High-temperature Natrix processes, with operating temperatures up to 60°C, have been operated successfully in full scale for many years

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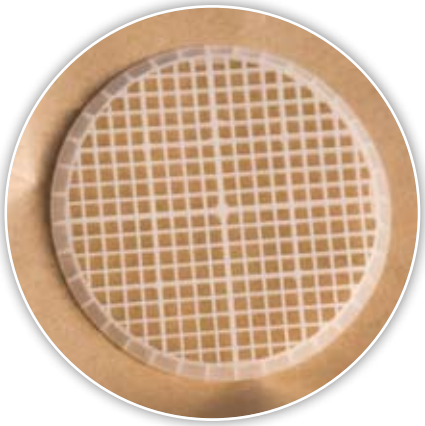
An thermophilic Natrix™ biofilm process was installed at Irving Pulp&Paper in Saint John, Canada. It is operated between 57-60° C and the soluble BOD_5 reduction has been approximately 90%.



The two types of carriers normally used in the Natrix™ biofilm process is the AnoxKaldnes™ carrier media type BiofilmChip P (to the left) and F3 (to the right).

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