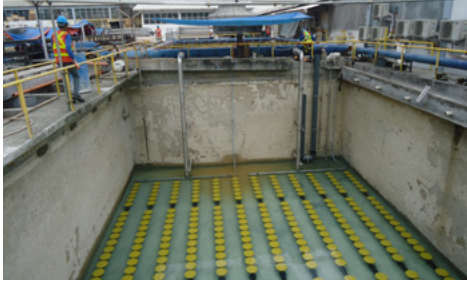




NIJHUIS BIOCTOR

Aerobic Wastewater Treatment Solutions



Reduce surcharge costs by removing COD

Aerobic treatment systems are based on a biological process operated and controlled under aerobic conditions (with aeration) that effectively treats COD, BOD and VSS into water, carbon dioxide and new biomass.

Nijhuis aerobic treatment experts have vast experience and know-how to properly select, design, build and operate aerobic processes providing clients with the best treatment solution that is sustainable with the lowest cost of ownership.

Nijhuis BIOCTOR solutions come in a variety of proven options allowing Nijhuis to offer the best for a customer application. Whether you are interested in separation of your wastewater with membrane technology, need to reduce industrial wastewater pollutant load to very low effluent requirements, or treat industrial wastewater for water recycling, Nijhuis can incorporate the proper BIOCTOR technical approach, applied to a mixture of substances in the wastewater.

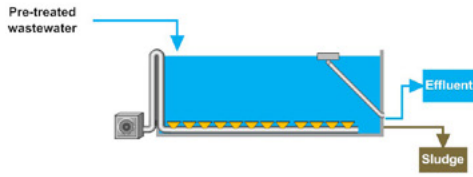
APPLICATIONS

- (Craft)Breweries, distilleries and wineries
- Soft drink, liquid food, coffee and beverage producers
- Convenience and food processing
- Potato and crisps processing
- Milk and liquid milk processing
- Edible oil processing
- Fish, meat and poultry processing
- Agricultural waste, manure and digestate and biogas processing

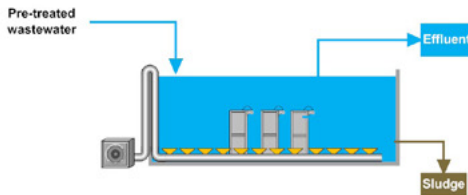
CUSTOMER BENEFITS

1. Reduce surcharge costs by removing COD
2. Flexible selection of aeration solutions, surface or bottom
3. Proven Nijhuis experience of applications
4. Proven Nijhuis experience in several industries
5. Effluent to be discharged or suitable for polishing and reuse requirements

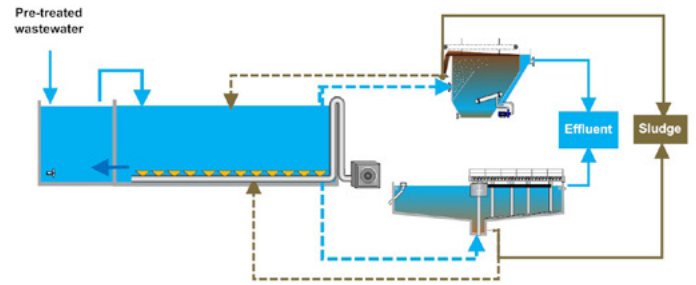
BIOCTOR-SBR



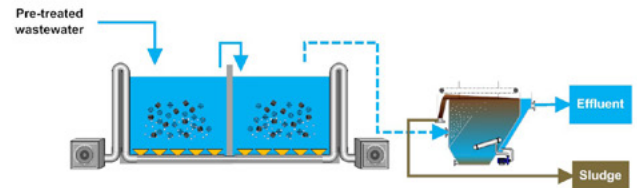
BIOCTOR-MBR



BIOCTOR-CONTINUOUS



BIOCTOR-MBBR



BIOCTOR-SBR

The Nijhuis BIOCTOR-SBR is an easy and flexible to operate **single tank solution**. All operations required in the process take place in one Sequence Batch Reactor tank. Consisting of a selector tank and aeration/denitrification tank, the proven technology has a very small footprint in comparison with the continuous biological systems. The BIOCTOR-SBR can be executed with surface or bottom aeration.

BIOCTOR-MBR

The Nijhuis BIOCTOR-MBR is a continuous sludge water separation by membranes, using flat plate or hollow fibre membrane modules and can be installed either in the aeration tank or in a separate membrane tank. Consisting of a selector tank and bottom aeration/denitrification tank, the solution can reach **very low effluent discharge values** and has no sludge return flow.

BIOCTOR-CONTINUOUS

The Nijhuis BIOCTOR-CONTINUOUS is a **24/7 system** where water flows by gravity through the required steps of treatment, with a clarifier or DAF for sludge and water separation.

Compared to the traditional clarifier, using a DAF for sludge and water separation, makes the biological reactor more compact since a higher concentration of bacteria in the aeration tank can be maintained and a better effluent can be guaranteed.

Consisting of a selector tank and aeration/denitrification tank, the system is suitable for high flows. The BIOCTOR-CONTINUOUS can be executed with surface or bottom aeration.

BIOCTOR-MBBR

The Nijhuis BIOCTOR-MBBR is using carrier material to have a more effective growth of bacteria, whereby a compacter aeration reactor can be used. The solution is **easy to maintain and has flexible upgrade possibilities**. In case there is a strict suspended solids discharge limit, a flocculation-flotation system will be included to remove the solids.

Depending on your wastewater capacity, composition and effluent requirements the optimum MBBR concept can be designed.

Consisting of a selector tank and bottom aeration/denitrification tank, biomass growing on the MBBR carriers converts organic matter to water, carbon dioxide and new biomass.

FLEX-AERATION system

We offer a wide range of surface and bottom aeration solutions for aerobic biological treatment, Nijhuis FLEX-AERATION, resulting in flexible and custom-made configurations which we **design, realize and maintain**.

For surface aeration, we offer Low Speed and High Speed aerators.

For bottom aeration, we offer Fine Bubble and Coarse Bubble aeration systems with tubes or discs.



Further treatment of the effluent and the sludge

In order to treat the effluent after the BIOCTOR process to discharge or reuse requirements, Nijhuis offers several polishing, reusing and recovery solutions. For example, the effluent can be polished and reused with **Sand Filtration (CSF), CarboPure (CP), membrane, ozone (NOS) and UV (NUV) technologies**. The sludge can be treated with the Nijhuis sludge management solutions such as **drum filter (NDF), decanter or chamber filter press** and/or turned into biogas with our **anaerobic digestion solutions (AECOMIX™)**.