

Revolutionary wastewater treatment that produces no sludge and can treat persistent substances.

MSABP™ Multi-Stage Activated Biological Process

Features

- Supresses the generation of excess sludge. Reduces the disposal cost of sludge with no sedimentation pond and no sludge return process (saves the footprint and running cost).
- Treats wastewater with high concentration pollutants (COD_{Cr} < 50,000 mg/L). No dilution treatment (saves the footprint and running cost of purification facilities).
- Decomposes persistent substances (BOD/COD_{Cr} ≥ 0.15). Decomposes detergents as well.

Overview

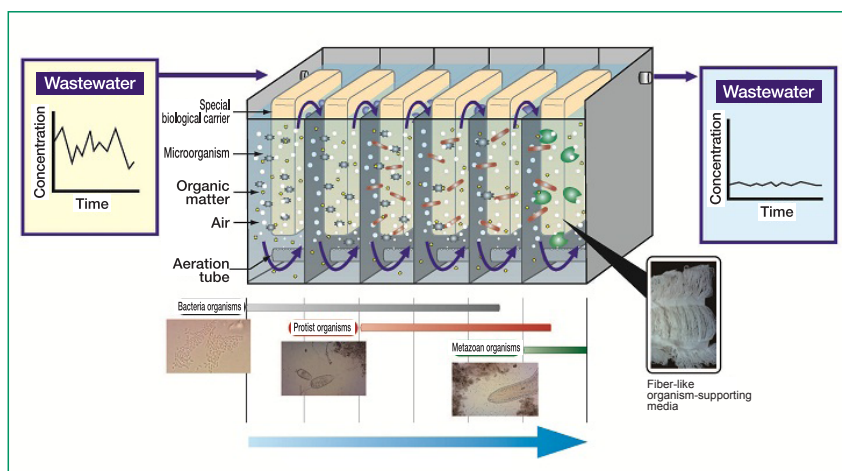
(Technical principles, actions, etc.)

MSABP™: Multi-Stage Activated Biological Process

The Multi-Stage Activated Biological Process (MSABP) is an innovative biological treatment system that reduces sludge, facilitates maintenance, saves energy and reduces costs. The system incorporates a biological reaction tank divided into 8 to 12 aeration tanks, and each aeration tank contains special fibers laden with microorganism carriers that constitute a food chain system in the reaction tank. The system can be downsized to the container's size to facilitate transportation and address the need for distributed treatment.



External appearance of MSABP



Overview of MSABP Technology

Introductory Track Record

- Manufacturing plant of cosmetic intermediate materials (Osaka prefecture)
- Modification to existing contact-oxidation vessels used at dye works (China)
- Application to domestic wastewater treatment in earthquake disaster recovery (Kesennuma City)
- Through joint research with the Japan Sewage Works Agency, it was revealed that the system reduced excess sludge by 44% and saved energy by up to 8% compared with a standard treatment system. Compared with an oxidation ditch, the system reduced excess sludge by 77% and saved energy by up to 12%.
- Distributed sewage treatment plant (China)
- Wastewater from textile mills (Angola)
- Treatment of domestic sewage
- High COD level wastewater from the chemical industry (chemical plant, pharmaceutical plant, cosmetic plant)
- Treatment of refractory wastewater, such as preservatives and pesticides
- Reduction of excess sludge produced from food factory wastewater when treated by a standard water treatment system
- Treatment of high salinity wastewater

Effects

◎ Less sludge: Saves the footprint and running cost of purification facilities

A natural food chain is reproduced by letting diverse microorganisms coexist inside the multi-stage tanks to create a mechanism in which virtually no sludge is produced. Therefore, the system does not require equipment to treat excess sludge. Furthermore, the special biological carrier in each tank prevents the microorganism in the tank from flowing out.

◎ Removal of wastewater with high concentrations of pollutants: Saves the footprint and running cost of wastewater treatment plant

The system treats wastewater with high concentrations of pollutants without dilution.

◎ Removal of persistent organic substances

The multi-stage tanks creates a plug flow of water, which maintains a sufficient quantity of microorganisms and oxygen supply in each tank. Furthermore, the diversification of biota increases microorganisms suitable for decomposing persistent organic substances, thus making it possible to obtain treated water of good quality from wastewater with high concentrations of persistent organic substances.

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