

SBP Capsules

Bio Castle developed the SBP capsules (Small Bioreactor Platform) as a method for bio-augmentation in waste water treatment.

SBP Capsules are micro-membranes that work as a MBR (Membrane Bioreactor) and keep the bacteria inside, separated from the treated water.

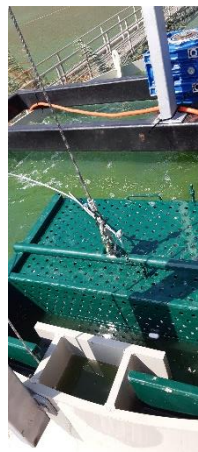
Water & contaminants will go through the membrane while the bacteria inside will treat the water from the designated contaminant.



How are they implemented?

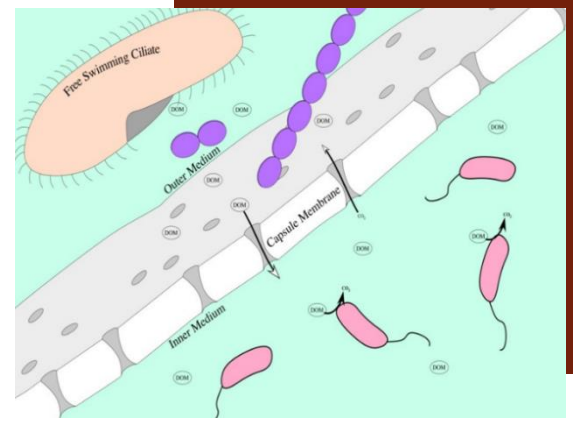
According to your water analysis, BioCastle experts will determine the type and amount of capsules needed for implementation.

The capsules will be introduced to the water from within a perforated box. The only operational activity needed will be to add capsules monthly as the old ones break down into sugar, leaving no environmental foot print.



How do SBP capsules work?

- The implemented biomass is secure from predators & water dilution.
- Contaminants will always flow into the capsule as long as the bacterial culture digests the contaminants (basic law of diffusion).
- Biofilm will not clot the membrane since it is equipped with strong negative charge that is rejecting biofilm.



Product specification (per capsule)

Length	2.5 cm (1 inch)
Volume	1.5-2 ml
Polymer	Cellulose Asetate

Shelf Life	3 Years in Room Temperature
MCRT (sludge age)	Up to 60 days
Pore size	Nanometric mesh (30-50nm) having a pore size of 0.2 μm

Advantages

Biological treatment can be operated in one chamber:

- No need for growing biomass, separating the biomass from effluents and circulating back.
- CAPEX reduction of up to 70% and OPEX up to 50% (compared to others).
- Starts working immediately. No need of inoculum and or a long build up period.
- Fastest recovery after toxic attack.
- Easy to use, no need for professional manpower to operate
- Can treat the challenging contaminants and refractory organics
- Most Eco-friendly and economically viable approach for enhanced pollutant degradation.

Applications

- Industrial heavy load wastewater
- Food and Beverage wastewater
- Retrofit of existing WWT plants with limited footprint
- Biological pre-treatment of drinking water
- Small & average size facilities in remote area

Best Use

- For nitrate removal no matter sludge age
- For treating additional organic and hydraulic load
- As additional biomass to existing facilities
- To enhance existing sanitary facilities by up to 20%
- To Increase the plant efficiency
- For back up in stress cases.
- To assist in stabilizing treatment processes.

About Us

Bio Castle Water technologies was established in 2013 by Dr. Ofir Menashe, Ph.D. in Biotechnology & Food Engineering & M.Sc. in Medical Science from the Technion- Israel Institute of Technology.

Dr. Menashe is a senior lecturer and faculty member in the Water Industry Engineering Department at Kinneret Academic College, specializing in water and waste water microbiology and bio-treatment.

The company was commenced to commercialize the SBP capsules, invented by Dr. Menashe. 16 peer articles were written based on research with the capsules. 3 patents were submitted, and one already granted.