



Memthane®

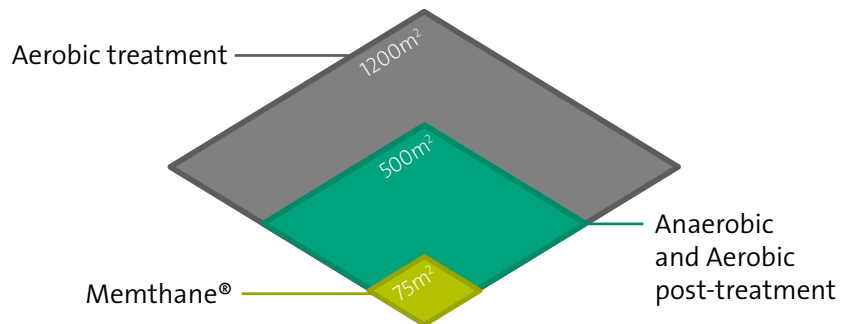
The preferred solution for high-strength wastewaters
resulting in crystal clear effluents



Solutions & Technologies

■ State-of-the-art solution

Memthane® is an Anaerobic Membrane Bio-Reactor (AnMBR) which **maximizes renewable energy production** while producing **superb quality effluent that can be reused** or discharged directly to sewer. The new leading-edge technology, developed by Veolia Water Solutions & Technologies' delivers a unique, small footprint solution that offers **an array of benefits**, reducing disposal costs while generating valuable biogas.



■ Economical and easy to operate

In addition to its performance advantages, Memthane® delivers a significant total **operating costs reduction** compared to conventional technologies, taking into account all elements, including membranes, chemicals, sludge disposal and overall energy savings. The **simple, single, fully automated reactor system** offers the possibility of remote control.

■ Sustainable and profitable

Memthane® opens the door to treatment of high-strength and high-solid streams found in industries like **distilleries, dairies, bio-ethanol producers, instant coffee plants**, etc.

The suspended solids free effluent also **facilitates easy recovery of nutrients** for fertilizer production and water recycling to the plant.

The **valuable methane-rich biogas** produced can cover a significant part of the production plant's energy and heat demand, up to 100% in distilleries, for example.

Due to the favorable investment and operating costs and the system's simplicity in combination with robustness, **clients are increasingly choosing Memthane®** as their preferred wastewater treatment solution.



Innovative and yet already proven

Memthane® combines two proven technologies: **Veolia's anaerobic biological wastewater treatment** and Pentair's X-Flow **ultrafiltration membrane** separation process.

Anaerobic biological treatment

Anaerobic treatment is the proven and energy efficient method to convert industrial wastewater into biogas. Low energy requirements, a smaller reactor footprint, lower chemical usage and reduced sludge handling costs are among the technology's advantages. Biogas produced through anaerobic treatment can make the plant energy neutral or even a renewable energy producer.

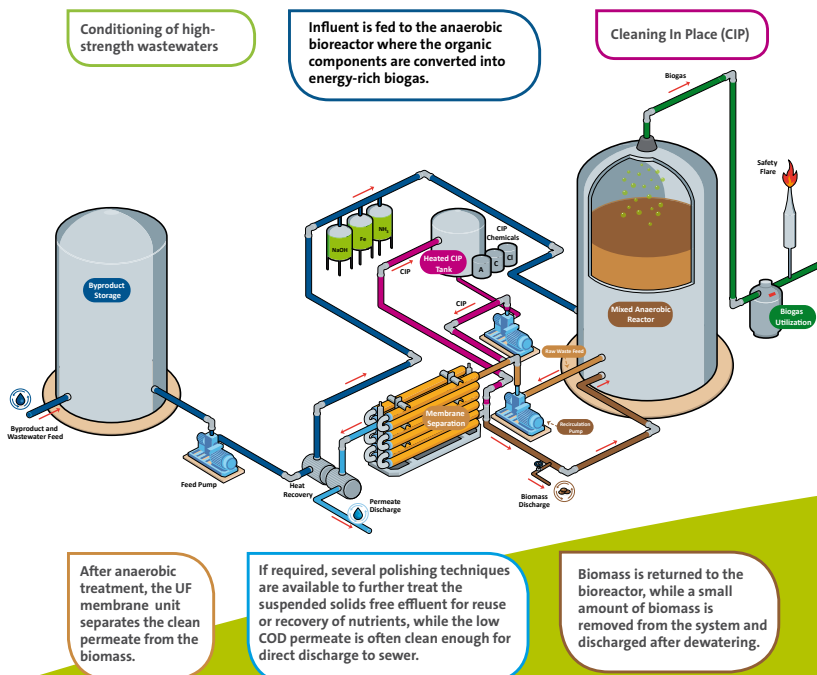
Membrane separation (UF)

The ultrafiltration membrane unit provides a solution that is robust, reliable and flexible. Memthane® minimizes the surplus sludge production by applying long sludge retention times. The membranes are placed outside the reactor, offering a simple and easily maintainable stand-alone system that is fully enclosed, preventing odor release.



Memthane® step-by-step

Anaerobic digestion plus cross-flow membranes



2 proven technologies:
Anaerobic biological treatment
+
Membrane separation
=
1 innovative solution

- › Maximizes COD + TSS removal
- › Eliminates disposal costs
- › Generates methane-rich biogas
- › 98% COD removal

A world of advantages

- › Reduces costs
- › Superb effluent quality
- › Maximizes green biogas energy
- › Robust and easy to operate
- › Easy recovery of nutrients for reuse
- › Reduces carbon footprint
- › Proven track record
- › Avoids biogas scouring
- › Odor free

A proven track record

- › 6 full-scale contracts
- › 4 years of full-scale industrial operation
- › 14 pilot plant tests
- › Dairy industries in the U.S.
- › Bioethanol plant in Europe
- › Cellulosic Bioethanol plant in the U.S.
- › Biodiesel plant in the U.S.
- › Food processing in the UK

Memthane®, the perfect solution for:

- › High concentrated streams
 - COD 15,000 ~ 250,000 ppm such as Dairies whey
- › Ethanol Facilities
 - Stillage type streams: Pot Ale, Spent Wash, Thin Stillage and Vinasse
- › Fat Oil and Grease (FOG) containing streams
 - Ice cream and Biodiesel
- › Starch slurries
- › High COD chemical applications

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Veolia Water Solutions & Technologies offers turn-key solutions for anaerobic wastewater treatment, process water make-up, biogas utilization, nutrient recovery and water recycling. Operational services and complete outsourcing can also be provided.

Your local contact:

