A Membrane Bio Reactor (MBR) is a compact wastewater treatment step that combines biological degradation and membrane filtration. MBR is often used to achieve high quality effluent, that can be re-used.

**Principle**
UNIBRANE™ is Keppel Seghers’ proprietary MBR system. It offers the highest performing MBR system in terms of effluent quality, system availability, low capital and operation at costs, and small footprint.

The membrane can be either submerged in the biomass or mounted externally. It allows for an advanced biological and/or phosphorus removal. And additionally, it produces less excess sludge than a conventional system.

**Application**
UNIBRANE™ can be applied for both industrial and municipal wastewaters.

The modular concept allows for phased construction of wastewater treatment plants and makes it adaptable to a wide range of sizes and flow rates.

**Process Description**
The UNIBRANE™ submerged system uses flat sheet membranes, immersed in the process tank and in direct contact with the mixed liquor.
Air is fed-in below the membranes to keep the surface of the membranes clean and to supply oxygen for biological growth. UNIBRANE™ is equipped with a high level of automation, ensuring the plant's simple operation and low maintenance cost.

UNIBRANE™ also exists in an external version instead of a submerged system.

Due to the higher energy consumption, the external version is mainly used for lower capacities or where higher temperatures cross the tolerable limits for the submersible membranes.

Similarly to the submerged system, it can operate under circumstances where dry solids contents in the biology are extremely high.

UNIBRANE™ can be delivered as a containerised unit. This solution has some advantages such as:
• No construction works on-site
• Short delivery-times

Features
• Pre-engineered containerized system available
• Internal or external membranes
• Low maintenance cost and simple operation
• High level automation
• Modular
• Excellent effluent quality
• Extremely compact

UNIBRANE™ Flat sheet submerged membranes.

UNIBRANE™ Membrane module.

Containerised UNIBRANE™ unit.