

BioFlow System - Clarifying liquids with a relatively high solids content

The Berghof external **BioFlow** MBR concept, based on the crossflow principle, is the most widely used form of membrane filtration.

Due to continuous optimization of the Berghof membrane and module configuration, the **BioFlow** MBR concept has led to an energy optimized process for reliable and economic treatment of high strength waste water.



■ Berghof membrane and modules

The Berghof external **BioFlow** MBR concept is equipped with the standard **HyperFlux** module program.

- High performance polymers PES and PVDF
- Excellent anti-fouling behaviour
- High chemical and excellent pressure stability
- Available in different molecular weight cut offs
- Modules with high packing density

■ Advantages

- Easy fouling control
- Robust and compact
- High fluxrates
- Turbulent flow
- Reliable treatment
- Low cleaning frequency
- Safe and easy maintenance
- Small footprint
- Suitable for containerized systems

■ Applications

MBR filtration

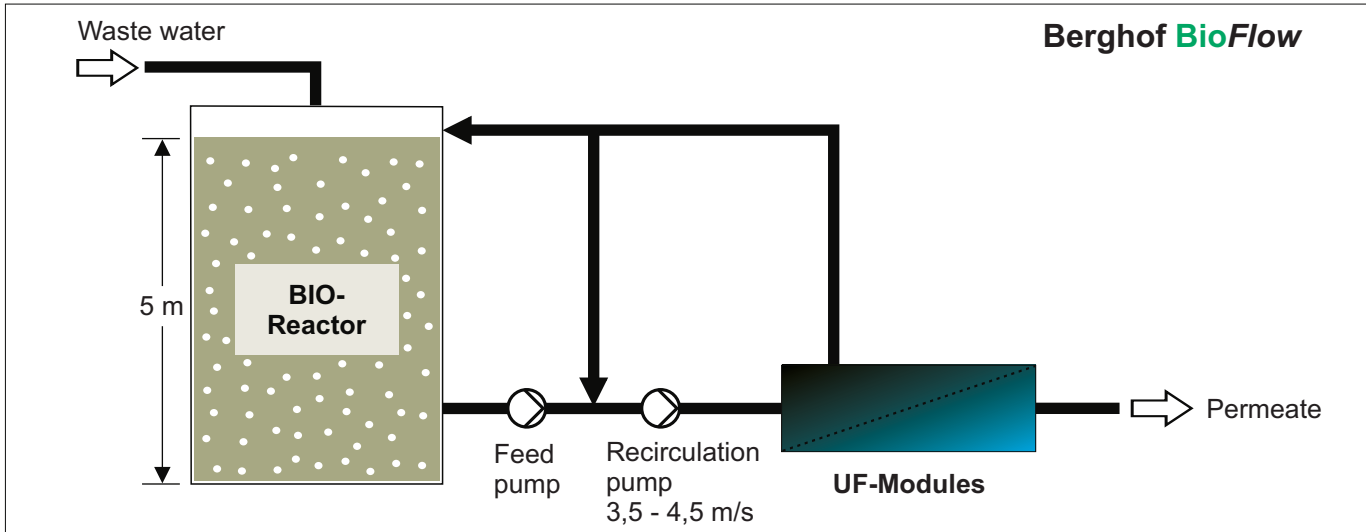
- Dairy, food and beverage waste water
- Coal industrial, electronics, oilfield
- Landfill leachate treatment
- Tank cleaning, laundry, textile
- Pharmaceuticals
- Fermentation / biogas / anaerobic
- Tanneries / leather industry

Oil/water separation

- Emulsions
- Cooling lubricants
- Degreasing baths

Others

- Fruit juice clarification
- Tea filtration



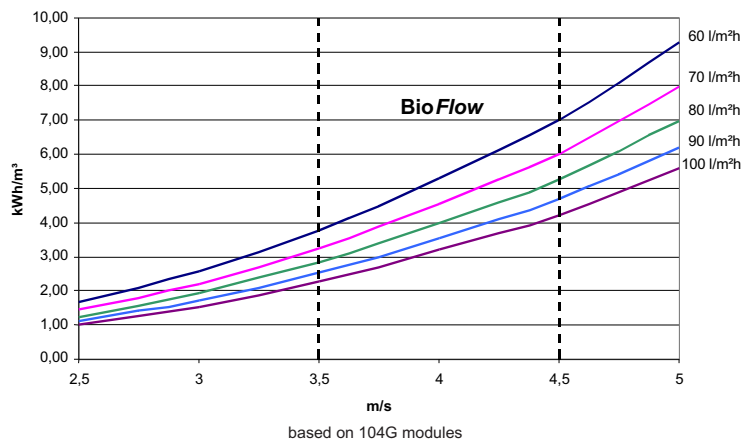
■ Process principle

The Berghof **BioFlow** concept is a pressure-driven separating process, which physically separates solutions and dispersions into concentrates and permeates.

The solution to be separated circulates across the membrane module at high velocity. The permeate is forced through the pores of the membrane, while suspended particulates remain in the retentate stream.

Cross-flow filtration creates high turbulence on the membrane surface and prevents the accumulation of particles on the inner surface of the tubular membrane providing high flux and prolonged filter life.

TMP : 2 - 6 bar
 Velocity : 3,5 - 4,5 m/s
 Specific fluxrate : 60 - 100 l/m².h
 Specific energy consumption : 2,2 - 7,0 kWh/m³
 Sludge concentration : up to 25 g/l



■ Membrane cleaning

Membrane chemical cleaning

Inorganic foulants, oil and grease will reduce the membrane performance over time.

A simple CIP cleaning recovers the membrane performance.

Berghof BSR membrane cleaners are especially formulated to clean and enhance the performance of the tubular membranes.