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SFC Umwelttechnik

clean water for the world

ADVANCED FILTRATION TECHNOLOGY

C-MEM™



www.sfcu.at



INNOVATIVE MEMBRANE TECHNOLOGY

WATER & WASTEWATER TREATMENT

SFC is a specialized company for process technologies in the field of water and wastewater treatment.

Typical clients are municipalities, industry (biomass heating plants, paper, food, beverage, chemical) and general contractors. Main business activities are consulting and design and supply of process technology, equipment, EPC and turn-key contracting.

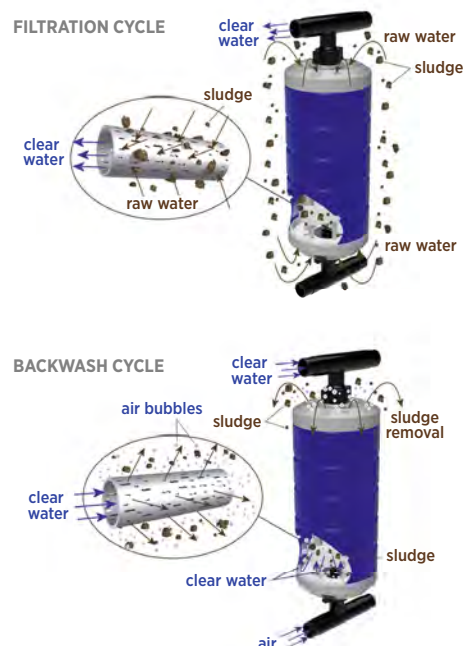
APPLICATIONS

- ❑ Membrane bioreactor (C-MEM MBR)
- ❑ Membrane moving bed biofilm reactor (C-MEM MBBR)
- ❑ Landfill leachate
- ❑ Grey and rain water treatment
- ❑ Pre-treatment before RO
- ❑ Elimination of turbidity, algae, bacteria and viruses (Fe, Mn, As with pre-oxidation process)
- ❑ Ground and surface water treatment
- ❑ Water reuse
- ❑ Elimination of *Cryptosporidia* and *Giardia*
- ❑ Wastewater disinfection
- ❑ Package plants for households and for smaller villages
- ❑ Mobile water treatment plants
- ❑ Emergency supply package
- ❑ Gravity driven membrane filtration (C-MEM Zero) without electric power consumption

THE C-MEM™ PROCESS

The characteristic of the **C-MEM™** process is the use of immersed hollow fibre membranes for ultrafiltration. The hollow fibres are wound around a carrier cartridge and arranged in bundles.

The cartridge protects the the hollow fibres, allows a very high packing density and results in a very efficient air-scour cleaning of membranes inside. They are combined in modules with air scour and filtrate connections.





MEMBRANE FIBRE CHARACTERISTICS

- ❑ Organic hollow fibres with outer diameter of 0.3–0.5mm
- ❑ Average pore size 20.1 nm
- ❑ TMP ranges from 50–600 mbar (immersed application) up to 3 bar (pressurized application)
- ❑ Clean water fluxes up to 300 l/m².h
- ❑ Homogeneous fibre gives higher integrity and longer lifetime
- ❑ Anti-fouling and permanently hydrophilic (no conservation of membranes necessary)

C-MEM™ SYSTEM DESIGN

The following components are generally required in a **C-MEM™** plant:

- ❑ Process tank into which the modules are immersed
- ❑ Filtration pumps or gravitation system to produce the filtered water through the hollow fibres in “outside-in operation”
- ❑ Air scour blowers for cleaning the membranes
- ❑ CIP cleaning system
- ❑ Backwash or treated water tank
- ❑ Selector for the improvement of biomass filtration properties (for MBR only)
- ❑ Control system

MAIN ADVANTAGES

The main advantage of the **C-MEM™** cartridge is the much better cleaning possibility, hence higher flux.

- ❑ Air scour cleaning much more effective, less air required
- ❑ **C-MEM™** cartridge design allows cleaning chemicals to react without dilution
- ❑ **C-MEM™** cartridges can be simply and individually replaced
- ❑ Very robust fibres with anti-fouling properties
- ❑ High resistance to oxidative chemicals
- ❑ Does not require expensive “out of tank” pipework
- ❑ Easy access and maintenance
- ❑ Extremely compact applications, retrofitting of existing tanks possible



C-MEM™ Modules



C-MEM ZERO



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