



**Product Information**  
**W.E.T.pur.compact**

**PUR-SERIES**



**Clean germ-free  
water because  
of most modern  
membrane  
technology**

Ultrafiltration unit for drinking water treatment as a compact fully-automatic system. Particularly for decentralised treatment in small waterworks or water towers. Suitable also for hospitals or hotels requiring germ-free water.

**W.E.T.pur**  
compact



## Clean germ-free water because of most modern membrane technology

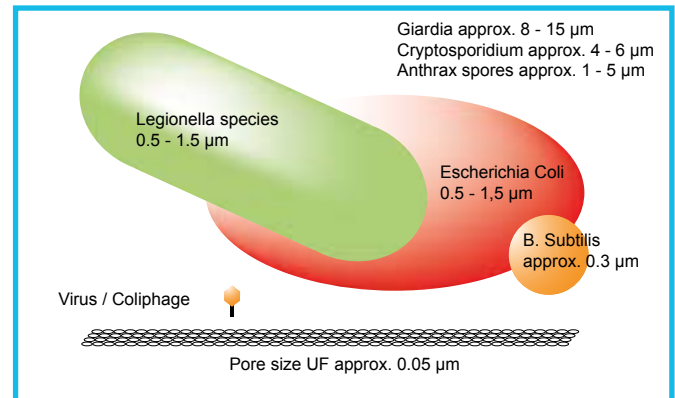
### Most modern plant equipment

During the last century water has been filtered through sand and carbon. The quality of the filtered water was not always convincing and germ formation in filters was occurring frequently.

The up-to-date drinking water treatment is nowadays working with ultrafiltration, a known process in a new application.

W.E.T.pur.compact systems are treating the water with ultrafiltration membranes, the pores of which are so small (approx.  $0.05 \mu\text{m}$ ), that neither bacteria nor viruses can penetrate the membrane. Diluted substances and salts are being conserved and can pass through the membranes.

Ultrafiltration (UF) in size comparison with known water germs



The pore size of the UF membranes allows retention of bacteria and viruses.

### Ultrafiltration in practice

The sketches shown on the right here are explaining the principle of membrane filtration and backwashing.

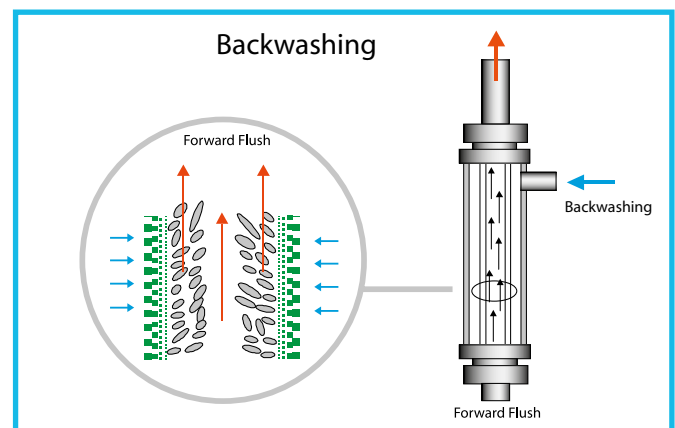
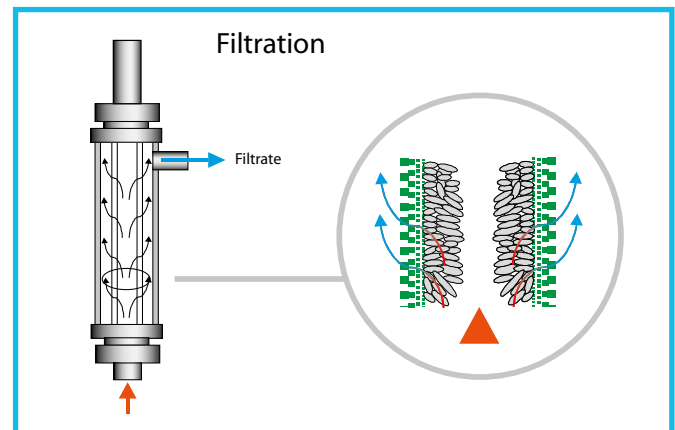
#### Sequence of filtration:

The raw water is being pressed into the filtration module from below. The illustrated process is corresponding to the dead end procedure. During the filtration process, all filtration residues are attached to the inside of the hollow fibres while the filtrate emerges on the outside. The clear water is being collected between the hollow fibres and channelled away.

#### Filter backwashing sequence:

1. **Preliminary washing (forward flush)**
  - Inside cleaning of the hollow fibre
  - Washing of the hollow fibres
2. **Main backwashing**
  - Cleaning of the filter pores by inversion of the water flow from outside to inside
3. **Post-flushing (forward flush)**

Same procedure as preliminary washing for removal of any pollutions remaining.  
The entire backwashing process is being done fully automatic.



## Function and design

The membrane modules are compactly mounted to a steel rack, connected with PVC pipelines and will be switched by means of pneumatic valves.

The differential pressure on the membranes and the volume flow are being measured for control of the plant function.

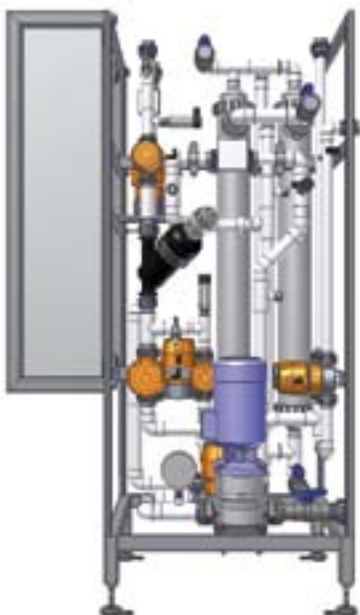
A compact protection filter is installed upstream of ultrafiltration in order to protect it from coarse pollutions. Backwashing of UF and protective filter is being done fully automatic and does no longer mean any burden for the operators.

Chemical backwashing and disinfection with chlorine is being done several times per day instead of normal ultrafiltration backwashing in order to completely eliminate the risk of germ formation in the system.

### Control cabinet

The integrated control cabinet is equipped with all switching devices as required for control purposes. This mainly includes:

- A programmable logic controller (PLC) and a control unit (3.7") for modification of parameters, plant operation and display of operation/trouble signals in plain text.
- A frequency converter each is foreseen for feed pump and backwash water pump.
- Exits and control for dosing pumps.
- Program for automatic treatment and backwashing.
- Interfaces
- Various potential-free contacts are available for connection to the client's control cabinet.



## Scope of supplies:

- Feed pump and backwash pump
- Primary filter
- Multibore membrane modules
- Differential pressure meter and flow meter
- Pneumatically operated membrane valves
- Fully automatic dosing device for cleaning chemical
- Control cabinet with control equipment
- Company-owned software
- Rack in galvanised steel
- Piping in PVC
- Backwash water tank with level measurement

## On-site preconditions:

- The raw water must only have a long-term turbidity of up to 1 FNU and a short-term turbidity peak of 5 FNU maximum.
- The DOC contents in the water must be smaller than 2 mg/l.
- Iron < 0.2 mg/l
- Manganese < 0.05 mg/l
- Continuous operation, no interruptions of several days
- Water temperature >10 °C < 40 °C
- Room temperature < 35 °C

## On-site requirements:

- Air supply for control of the pneumatic actuators, minimum pressure 7 bar, dry, dust-free and oil-free.
- Connection, output 25 A – 3 x 230 V, 50 Hz, protective measures acc. to regulations of local power supplier
- Operating fluids approved by W.E.T.
- Telephone connection or availability of a VPN connection for remote maintenance.
- Connection to an existing control cabinet (process control) is not included in the quotation.
- Waste water produced during chemical backwashing must probably be neutralized.

## Your advantages at a glance

- Germ-free water by most modern membrane technology
- Germ formation in filters are impossible
- Fully automatic operation with several backwashing procedures per day
- Minimum backwash water storage
- Staff required for supervision only
- Room height of 2.0 m is sufficient
- Standardized system – detailed design documentation available
- Consultation of and coordination with our employees for design questions is possible at any time.



## Contact

### W.E.T. GmbH

Krumme Fohre 70  
D-95359 Kasendorf  
Germany

Fon: + 49 9228 99609 0

Fax: + 49 9228 99609 11

info@wet-gmbh.com

www.wet-gmbh.com

### Contact persons:

Michael Reis Graduate Eng. (FH)

Michael Otte

Werner Sauerschell Graduate Mineralogist



## Distribution