

## Ceramic Membrane Filters for Micro- and Ultrafiltration



# SCHUMASIV™, membrane filter elements for the most demanding applications

## Profit from the experience of specialists

PALL SCHUMACHER is recognised world wide as the leading manufacturer of ceramic filter elements and has been supplying specialised ceramic products for in

excess of 100 years. The depth of knowledge and experience gained over this period embraces a wide variety of applications, and we are constantly working closely with

our customers to increase our knowledge of even more specialist applications.

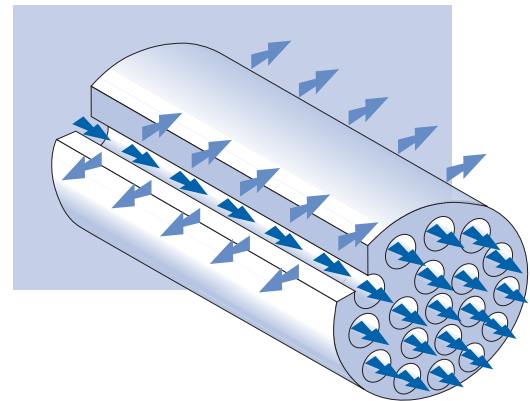
Innovative ideas and solutions are the key to the success of PALL SCHUMACHER.

## Ceramic-multichannel-membrane filters - a concept for success

SCHUMASIV™, ceramic membrane filter elements are composed of a highly porous ceramic support having large open pores, with very thin porous ceramic membrane layers coated on the upstream surface of the channels of the multi-channel elements (see SEM picture). The pore size of the thin membrane layers is accurately regulated during the manufacturing process to give a consistent membrane performance in operation. Ceramic membrane filters exhibit distinct advantages over other membrane materials which is in part due to the asymmetric pore structure of the SCHUMASIV™, membrane and also

to the special material properties of ceramics. This combination makes SCHUMASIV™ ceramic membrane unique in the field of filtration.

- longevity
- high temperature resistance and high resistance to temperature changes
- high pressure resistance (up to 100 bar)
- high resistance against aggressive chemical liquids such as strong acids, alkalines and organic solvents
- resistance to abrasion



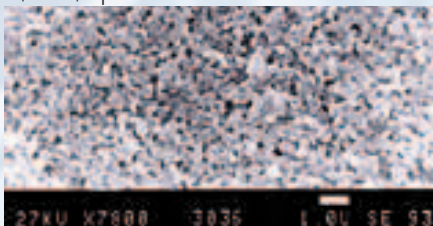
- hydrophilic surface
- high permeate flow
- back pulse cleaning capability
- easy to clean
- steam sterilizable
- closed system

## Comprehensive range of pore sizes to suit all applications

The wide range of SCHUMASIV™ products cover pore sizes from 0,005 µm to 2,0 µm, meeting the demands of all applications.

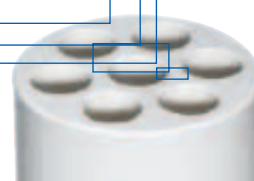
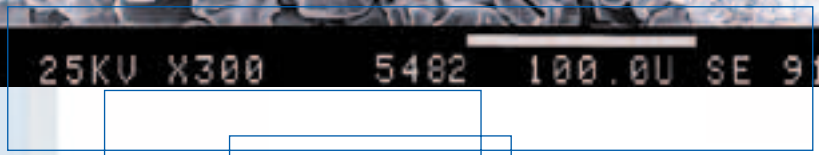
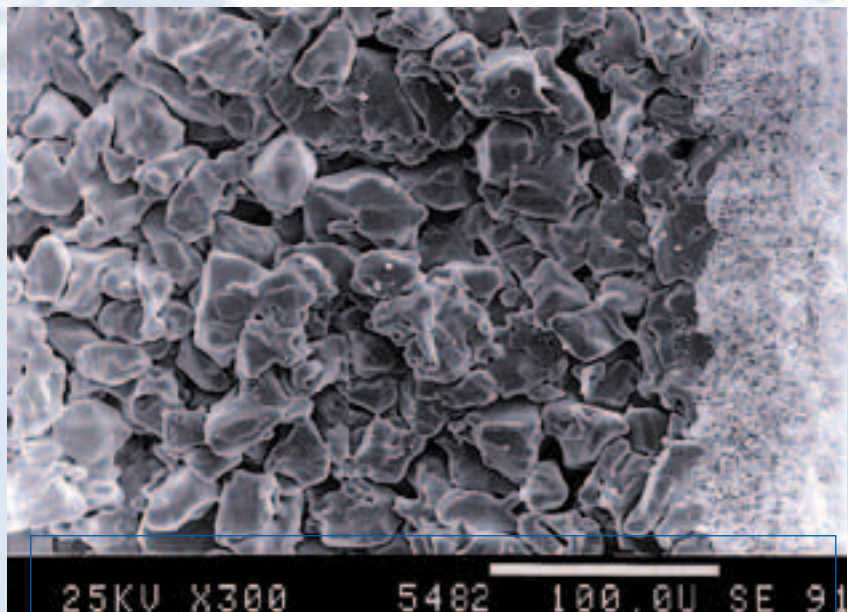
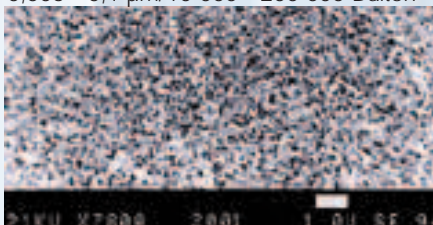
### Microfiltration

0,2 - 2,0 µm



### Ultrafiltration

0,005 - 0,1 µm/10 000 - 200 000 Dalton



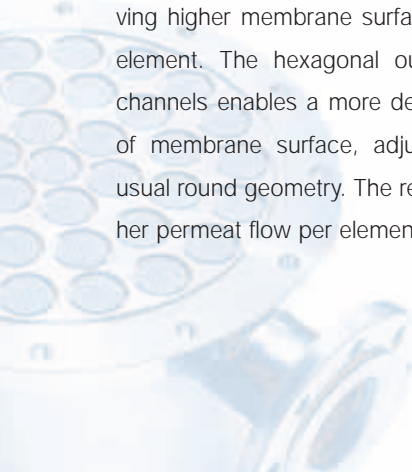
# SCHUMASIV™, -geometries for all applications



PALL SCHUMACHER offers a wide range of ceramic membrane geometries covering a comprehensive combination of surface area per element and channel diameter permutations. This availability ensures that all customers demands for a wide variety of applications are met.

The special layout and design of the flow channels utilised in the SCHUMASIV™ membrane elements ensures an even flow distribution along the length and radially through the element. This optimum design generates maximum permeate with minimum energy consumption.

The new hexagonal channels (SCHUMASIV™- H) are an optimization for achieving higher membrane surfaces per filter element. The hexagonal outline of the channels enables a more dense packing of membrane surface, adjusted to the usual round geometry. The result is a higher permeate flow per element.



Technical Data	
Material	α-Al <sub>2</sub> O <sub>3</sub> , TiO <sub>2</sub> , ZrO <sub>2</sub>
Pore sizes	0,005 - 2,0 μm
Temperature resistance	only depending on sealing compounds
Pressure resistance	up to 100 bar, depending on filter element
pH-range	1 - 14
Length	1 000 mm (standard)

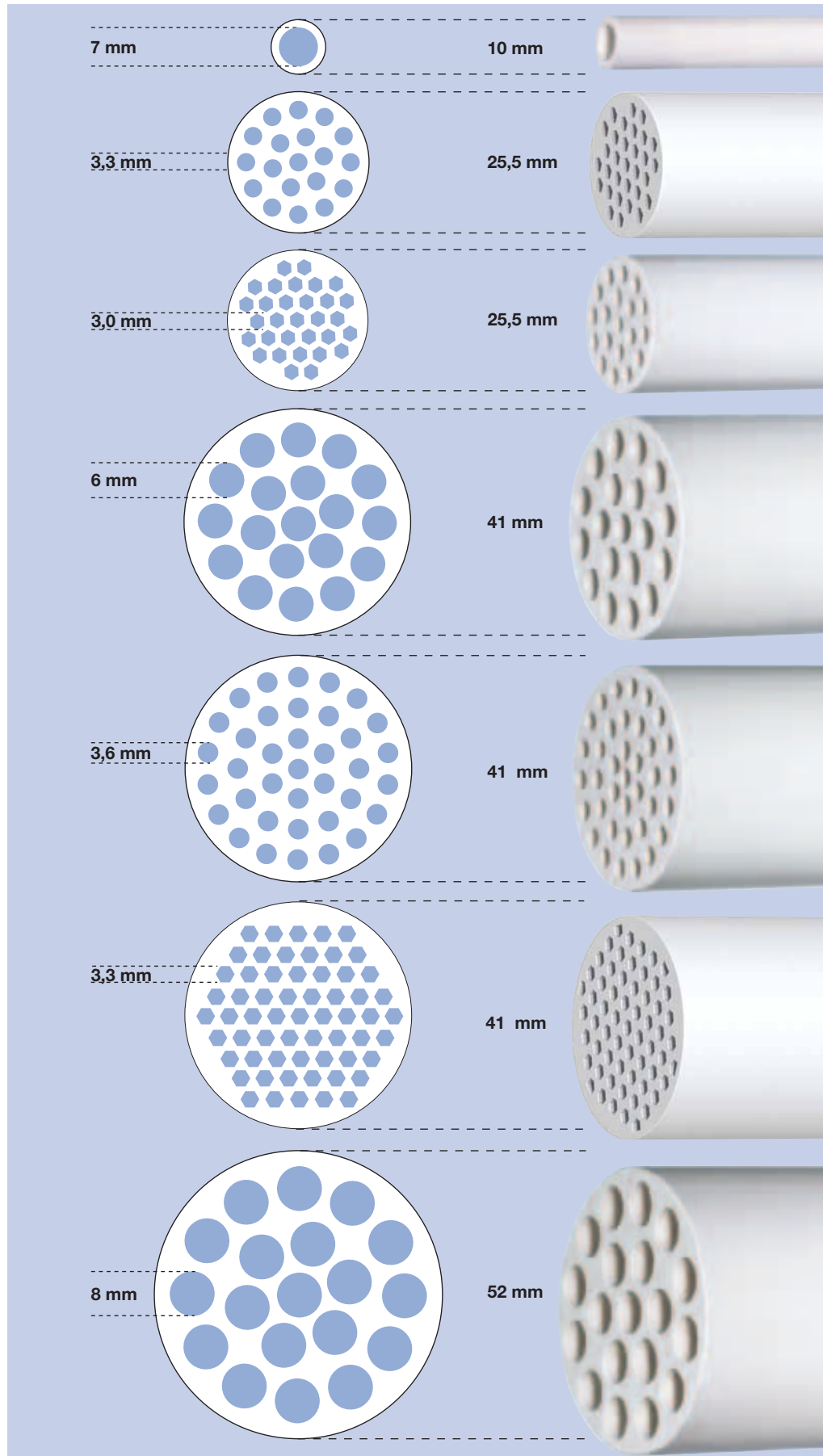



Table of filter geometries

# Stainless steel housings offering maximum membrane surface in smallest volume

PALL SCHUMACHER can supply stainless steel housings which have been purpose designed to accommodate the maximum membrane surface area into the minimum space. Standard housings are available to accommodate up to 27 m<sup>2</sup> of filter surface into one housing. The module housings are designed to be easily arranged in parallel or series operation in your membrane filter systems according to the requirements of the application. Integrating the range of PALL SCHUMACHER module housings into your membrane filter system with maximised surface area minimises build and running costs.



# Achieve maximum performance in filtration



Excellent results are achieved with PALL SCHUMACHER membrane filter elements in a wide variety of

applications. Some examples from our broad experience are described below.



## Chemical processing technology

- catalyst recycling
- clearing filtration of acids/alkalines
- concentration of suspended matter and emulsions
- waste water filtration

## Manufacturing industry

- extending operational life of cleaning baths
- recycling of coolant liquids and lubricants
- oil and fat removal from sewage



## Food industry

- filtration of fruit juices and wine
- beer/yeast filtration
- drinking water purification
- sugar processing



## Biotechnology

- separation of cells and cell elements from fermenting liquids
- sterile filtration

## Talk to us - You can rely on our service

Utilise the know-how and experience of a market leader with generations of experience in the concept, design, manufacturing and commissioning of products made of filtration, fluidization and aeration. Benefit from our continuous efforts in research and development. Many new products have been developed in close cooperation with our customers. Please challenge us when you are looking for the best possible solution for your particular needs for filtration, fluidization or aeration and we will not let you down.

## Use our service:

- On-site consulting via our wide representation network
- Process and method evaluation
- Laboratory evaluation (filtration and fluidization)
- Supply of test filters and pilot systems
- Efficiency analyses
- After sales-service
- Commissioning and start up of filter systems