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# Prostak™ Microfiltration Modules

For Convenient and Economical Perfusion  
and Clarification/Concentration Applications

Prostak™ modules are tangential flow stacked plate membrane devices with open feed channels, made for use in Prostak™ tangential flow filtration (TFF) systems.

Prostak™ open channel modules are available with microporous membranes and are steam sterilizable for at least 20 cycles.

## Versatility

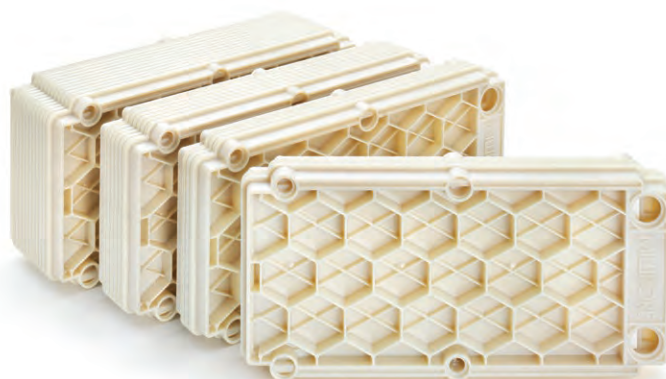
Prostak™ open-channel modules are available in four sizes: 2, 4, 10 and 20 Stack, making them applicable for bench-top, pilot and production scale systems.

## Reliability

Membrane and module integrity is tested on every module during manufacturing.

## Easy to Validate

No adhesives and only two materials of construction to simplify validation of extractables.



## High Product Recovery

The open channel design and the low hold-up volume allow for a high product recovery and makes the flow path gentle to process fragile cells and shear-sensitive materials.

## Typical Applications

Prostak™ microfiltration modules can be used for perfusion or for clarification/harvest operations, in any of these typical applications:

- Mammalian, bacterial and mycelial cell suspensions
- Emulsions and colloidal suspensions
- Viruses, proteins and other bio-organic macromolecular solutions
- Polysaccharides and other high-viscosity solutions
- Yeast, algae and other high solids suspensions
- Protein precipitates
- Perfusion
- Vaccines

## Physical Specifications

| Recommended Prefiltration                                                                                        |         |         |          |          |
|------------------------------------------------------------------------------------------------------------------|---------|---------|----------|----------|
| 150 µm nominal                                                                                                   |         |         |          |          |
| Materials of Construction                                                                                        |         |         |          |          |
| Polysulfone (10% glass filled) plates; Membrane: Durapore® hydrophilic or hydrophobic PVDF microporous membranes |         |         |          |          |
| Channel Height                                                                                                   |         |         |          |          |
| Approximately 0.5 mm                                                                                             |         |         |          |          |
|                                                                                                                  | 2 Stack | 4 Stack | 10 Stack | 20 Stack |
| Dry Weight (kg)                                                                                                  | 1.6     | 2.1     | 3.6      | 6.2      |
| Length (cm)                                                                                                      | 38.9    | 38.9    | 38.9     | 38.9     |
| Width (cm)                                                                                                       | 19.8    | 19.8    | 19.8     | 19.8     |
| Height (cm)                                                                                                      | 4.6     | 5.6     | 8.1      | 12.4     |
| Approximate Internal Volume                                                                                      |         |         |          |          |
| Total Volume (ml)                                                                                                | 500     | 700     | 1250     | 2500     |
| Feed Side (ml)                                                                                                   | 300     | 420     | 750      | 1500     |
| Filtrate Side (ml)                                                                                               | 200     | 280     | 500      | 1000     |
| Effective Membrane Area                                                                                          |         |         |          |          |
| Area (m <sup>2</sup> )                                                                                           | 0.17    | 0.33    | 0.84     | 1.7      |

## Operating Guidelines

| Maximum Inlet Pressure                   |                              |                   |
|------------------------------------------|------------------------------|-------------------|
| at <50°C                                 |                              | 5.5 bar (80 psi)* |
| at 50 – 80°C                             |                              | 4.1 bar (60 psi)  |
| Maximum Transmembrane Pressure - Forward |                              |                   |
| at <50°C                                 |                              | 4.1 bar (60 psi)* |
| at 50 – 80°C                             |                              | 2.1 bar (30 psi)  |
| Reverse Transmembrane Pressure           |                              | not recommended   |
| pH Range                                 | short duration (<1 hr cycle) | continuous        |
| Durapore® Hydrophilic PVDF Membrane      | 1 – 11                       | 2 – 10            |
| PZHK Membrane and Hydrophobic PVDF       | 1 – 13                       | 2 – 12            |

\*Note: Durapore® 0.65 µm membrane, 3.5 bar maximum forward pressure

## Sterilization Guidelines

| Steam (in Place)                         |                  |
|------------------------------------------|------------------|
| Steam Pressure                           | 20 psi (1.4 bar) |
| Steam Temperature                        | 126 °C (259 °F)  |
| Maximum Feed to Retentate Pressure Drop  | 0.14 bar (2 psi) |
| Maximum Transmembrane Pressure - Forward | 0.14 bar (2 psi) |
| Cycle Time                               | 1 Hour           |

## Ordering Information

### Modules

| Pore Size (µm)                                              | 2 Stack     | 4 Stack     | 10 Stack    | 20 Stack    |
|-------------------------------------------------------------|-------------|-------------|-------------|-------------|
| Microporous Membranes - Hydrophilic PVDF Durapore® Membrane |             |             |             |             |
| 0.1                                                         | PSVV AG0 21 | PSVV AG0 41 | PSVV AG1 01 | SK2P 127 E1 |
| 0.22                                                        | PSGV AG0 21 | PSGV AG0 41 | PSGV AG1 01 | SK2P 484 E0 |
| 0.45                                                        | PSHV AG0 21 | PSHV AG0 41 | PSHV AG1 01 | SK2P 242 E9 |
| 0.65                                                        | PSDV AG0 21 | PSDV AG0 41 | PSDV AG1 01 | SK2P 446 E0 |
| Microporous Membranes - Hydrophobic PVDF Durapore® Membrane |             |             |             |             |
| 0.22                                                        | —           | —           | —           | SK2P 344 W2 |
| 0.45                                                        | SK2P 012 W6 | —           | —           | SK2P 013 W4 |
| PZHK Membrane - Hydrophobic PVDF                            |             |             |             |             |
| 200*                                                        | —           | —           | —           | SK2R B30 A1 |

\*Nominal Molecular Weight Limit in kilodaltons

There is one module per package. Sanitary gaskets are supplied with each module to provide a leak-free connection between the module(s) and holder.

## Holder and Spare Parts

| Part                             | Description                                                   | Material of Construction | Catalog Number | Quantity/Pack                          |
|----------------------------------|---------------------------------------------------------------|--------------------------|----------------|----------------------------------------|
| Holder                           | Prostak™ holder                                               | Stainless Steel          | PSKPMF001      | 1                                      |
| Sanitary Gaskets                 | Short sanitary gasket kit, for use without holding plates.    | Silicone                 | PSKP02200      | 12 for permeate, 12 for feed/retentate |
|                                  | Tall sanitary gasket kit, for use with gasket holding plates. | Silicone                 | PSKP0220P      | 16 for permeate, 16 for feed/retentate |
|                                  |                                                               | EPDM                     | PSKP0210P      | 16 for permeate, 16 for feed/retentate |
| Gasket Support Plates (Optional) | Gasket support plate, for non-steaming applications           | Polycarbonate            | PSKPMFG06      | 6                                      |
|                                  | Gasket support plate, for steaming applications               | Polysulfone              | SK2P007W8      | 6                                      |



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