

# PERSEP™ ultrafiltration system

## Data sheet

### PERSEP™ ultrafiltration system for electrocoat paint

Water-soluble paints used in electrocoat painting process (ecoat) are filtered continuously through an UltraFiltration (UF) system in order to maintain their physico-chemical characteristics. The retentate is returned to the paint bath and the permeate is used as rinsing water.

In the electrocoat process, the paint is applied on a metal by electrophoretic deposition. Manufacturers use this process to treat metal surfaces in order to protect them against corrosion. Users include the automotive and appliance industry, and metal finishing plants (mechanics, etc.)

The PERSEP™ ultrafiltration system can be installed in new ecoat lines or as a replacement for existing units.



### ALSYS references with PERSEP™ system for electrocoat paint

- 6 PERSEP™ systems delivered since 2019
- ALSYS has ~ 40 years of experience with ecoat UF systems (PLEIADE® flat-sheet membrane range)

End user / product manufactured	System size	Start-up date
Automotive / Car body	6 Modules	2021
Automotive / Spare part	6 Modules	2021
Metal fabrication	2 Modules	2021
Automotive / Car body	6 Modules	2020
Automotive / Car body	6 Modules	2020
Electrical equipment	3 Modules	2019
Agricultural equipment	2 Modules	2018
Automotive / Spare part	4 Modules	2014

### What makes PERSEP™ system unique ?

- Fouling resistant membrane that produces a consistently permeate flow rate
- Turnkey system, ready to connect to utilities
- ALSYS' long experience in design, fabrication, start-up, after-sales and audit of ecoat UF systems (~ 40 years of experience)
- Tailor-made design according to the user's needs:
  - Number of modules: 2, 3, 4, 6 modules...
  - Compact footprint available, with adjustable height
  - Installed equipment (pump, ...), instrumentation (transmitters, ...)
  - Adaptation to existing piping
  - Optional Cleaning In Place (CIP) system
- Flexible capacity: the system flow rate is adjustable by isolating or adding modules
- **Very robust: PVDF membrane, PVC housing, and stainless-steel frame are resistant to the operating conditions**

### PERSEP™ membranes

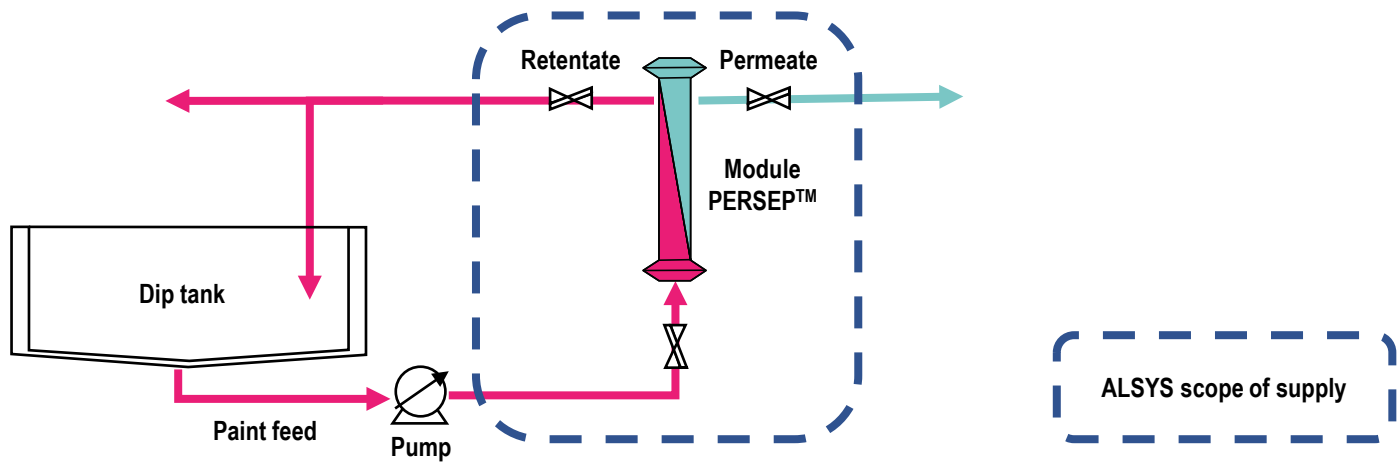
- PERSEP™ membranes are made of a PVDF based polymer developed specifically for use with ecoat paint. The membrane contains a permanent negative charge which results in less fouling and easier cleaning. No special membrane conditioning step is needed after cleaning.
- The spiral wound membrane is installed permanently within a PVC housing

#### Contacts ☎:

Europe: +33 (0)4 66 85 95 36  
North America: +1 857 504 2250  
Asia: +86 (0)21 6350 3377



# How the PERSEP™ system works ?



## PERSEP™ system range

Main characteristics	PERSEP™ 2 Modules	PERSEP™ 4 Modules	PERSEP™ 6 Modules
<b>Dimensions Length x Width x Height</b>	800 x 850 x 2200 mm (31.5 x 33.46 x 86.61")	1500 x 1600 x 2200 mm (59.05 x 63 x 86.61")	2000 x 1600 x 2200 mm (78.74 x 63 x 86.61")
<b>Weight</b>	160 kg (353 lb)	270 kg (595 lb)	380 kg (838 lb)
<b>Frame materials</b>	Stainless steel	Stainless steel	Stainless steel
<b>Piping materials</b>	Stainless steel / PVC	Stainless steel / PVC	Stainless steel / PVC
<b>System dead volume</b>	36 l	80 l	120 l
<b>Valves</b>	Manual	Manual	Manual
<b>Required EQUIPMENTS (out of scope) :</b>			
<b>Pump capacity</b>	34 m <sup>3</sup> / h (GPM 150)	68 m <sup>3</sup> / h (GPM 300)	102 m <sup>3</sup> / h (GPM 450)

## PERSEP™ module performance (8")

	Metric units	US units
<b>Main characteristics</b>		
Membrane material		PVDF
Spacer	0,7 mm	31 mils
Membrane area	29 m <sup>2</sup>	315 ft <sup>2</sup>
Housing material		PVC
<b>Specifics characteristics</b>		
The spiral wound membrane is installed permanently within a PVC housing (ready-to-use)		
<b>Recommended operating conditions</b>		
Maximum operating pressure	5 bar	70 psi
Typical pressure	3 - 5 bar	40 - 80 psi
Maximum operating temperature	45°C	113°F
Maximum cleaning temperature	45°C	113°F
Retentate flow rate	16 à 17 m <sup>3</sup> /h	GPM 70- 75
Maximum pressure drop per element	1,7 à 2,4 bars	24 to 34 psi
<b>pH</b>		
Process mode or cleaning		2 - 10
<b>Module dimensions</b>		
Module length	997 mm	39.25"
<b>Module external diameter</b>	<b>219,1 mm</b>	<b>8.62"</b>
Permeate connector diameter	33 mm	1.3"
Module weight (dry)	27,2 kg	60 lb
Module weight (working)	40,8 kg	90 lb



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✉ [orelis@alsys-group.com](mailto:orelis@alsys-group.com)  
[www.alsys-group.com](http://www.alsys-group.com)

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