

Membrane Filtration Separation Equipment



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Small Tangential Flow Ultrafiltration System

TFF Overview

Understanding tangential flow ultrafiltration systems

Brief Introduction of Tangential flow filter (TFF)

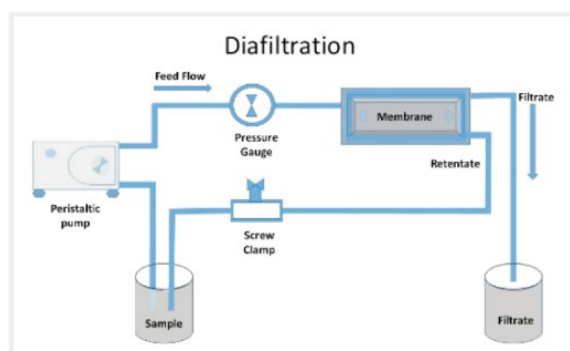
Tangential flow filter (TFF), also known as cross flow filter (CFF), refers to the liquid flow direction and filter direction perpendicular to the filter form. Liquid flow creates a shear force on the surface of the filter media, reducing the stacking of the cake layer or gel layer, thus ensuring a stable filtration rate

According to the trapped particles or molecular size can be divided into microfiltration MF, ultrafiltration UF, nanofiltration NF and reverse osmosis RO. TFF technology is currently widely used in pharmaceutical, biological, chemical, food and beverage and environmental protection industries.

Brief introduction of small tangential flow ultrafiltration system

System Overview

The small tangential flow ultrafiltration system is a set of TFF devices for laboratory users. It is mainly applied to TFF research of small scale or pilot scale in laboratory. The system uses imported original box-type flat film package, can achieve microfiltration, ultrafiltration, to meet the needs of laboratory diversification.



System applications

- Cell collection, cell fluid clarification and filtration, recovery of antibodies or recombinant proteins
- Concentration and desalination of proteins, peptides or nucleic acids (DNA / RNA / oligonucleotides)
- Remove heat source or impurity molecules in the water, buffer, medium solution, equal volume of continuous dialysis

Bacteria collection
Cell fluid clarification
filter antibody,
recombinant protein

01

Concentration and desalting of proteins,
peptides, nucleic acids
(DNA/RNA)

02

Removal of pyrogens,
impurity molecules,
isovolumetric continuous dialysis

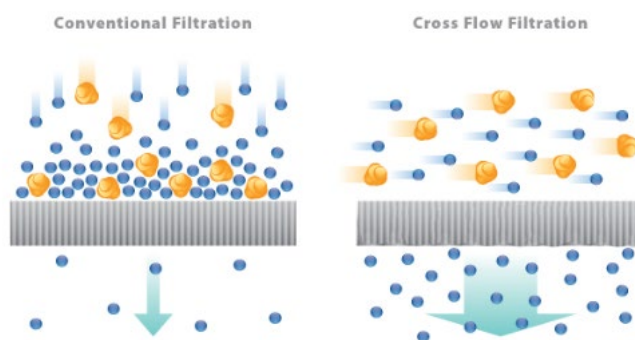
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System Features:

- Sample recovery rate is extremely high, and efficiently ensure protein activity
- Filtration speed is stable, can be continuous cycle of filtration, the film surface does not form a gel layer

- Easy to linear amplification, the maximum reduction time and cost from small scale preparation to large-scale production
- Universal stainless-steel fixture, matching the major brands of imported original box-type film package, which can be installed 1 to 3 pieces at the same time
- Integrated design, easy to operate, according to different needs to choose the appropriate film fixture, peristaltic pump and film package
- Stainless steel stent + raw material tank, siphon feeding, easy for laboratory aseptic continuous operation

PERPENDICULAR VS. CROSS FLOW FILTRATION



1. CFF-01 Small Tangential Flow Ultrafiltration System, 0.1~20L/H



It is suitable for small-scale TFF research in biological laboratories, such as biological separation, material concentration and protein solution purification. Small size, exquisite, easy to disassemble.

Basic Information

- Model: CFF-01
- Process capacity: 0.1-20L/H
- Membrane form: 1~3 blocks, 0.1 m imported box type flat membrane
- Power unit: Precision peristaltic pump 220V, Maximum flow 2L/MIN
- Raw material tank: Material AISI 316L, Volume 2L

Stainless steel fixture

- Material AISI316L
- 2 in 2 out sanitary quick interface with mirror polishing internal surface and sand blasting outside surface
- Fit 0.1 m imported box type flat membrane, optional brand Millpore, Sartorius and PALL.



Power unit

- LONGER peristaltic pump with reliable quality
- Maximum flow: 2L/MIN
- Maximum pressure: 0.3Mpa
- Control: Start and stop control, direction control, speed control (0-5V, 0-10V, 0-, 10KHZ are optional)



Stainless steel bracket + raw material tank

- Material AISI 316L
- Sartorius Outlet Filter
- Siphon feeding, easy lab aseptic continuous operation
- Tank volume: 1L, 2L, 3.5L, 5L, 10L, can be customized



Flat membrane packs

- Filtration area: 0.1 m² (CFF-O1) Ultrafiltration / microfiltration is optional
- Membrane material: Biomax , PLC(modified cellulose)PVDF (polyvinylidene fluoride)
- Optional brand: Millpore, Sartorius, PALL






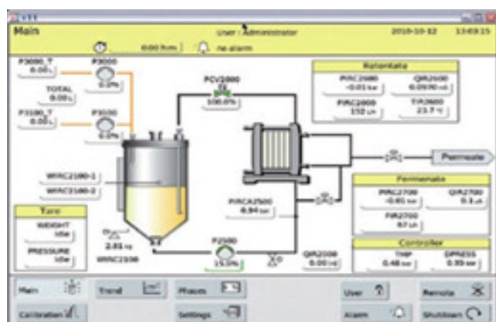
Membrane material	Molecular weight cut-off (KD)	Most suitable molecular retention range>99%(KD)
Biomax-5	5	12-25(growth factor hormone)
Biomax-8	8	25-50(growth factor, hormone)
Biomax-10	10	50-100(growth factor, hormone)
Biomax-30	30	100-140(enzyme)
Biomax-50	50	140-300(IgGs)
Biomax-100	100	300-500 (parvovirus, antigen)
Biomax-300	300	> 500 (IgMs, big virus)
Biomax-500	500	> 0.3um (colloid, granules)
Biomax-1000	1000	> 0.3um (colloid, granules)
PLCCC	5	8-18(proinsulin, hematopoietic factor)
PLCGC	10	18-60(hemoglobin, enzyme)
PLCTK	30	60-200(monoclonal antibody)
PLCHK	100	200-500(parvovirus, viral antigen)
PLCMK	300	> 500 (IgMs, big virus)
PLCXK	1000	>0.3um(colloid, granules)
PVDF(Microfiltration)	0.1um/0.22um/0.45um/0.65um	Large diameter of the bacteria particles

Specification

Model	CFF-01
Power unit	<ul style="list-style-type: none"> • Precision peristaltic pump 220V • Maximum flow 2L/MIN • Seamless replacement with four plunger diaphragm pump • Speed range 1-600RPM
Membrane element	<ul style="list-style-type: none"> • Imported box type flat membrane, with an area of 0.1 square meters, can install 1~3 blocks
Process capacity	<ul style="list-style-type: none"> • 0.1~20L/H
Stainless steel fixture	<ul style="list-style-type: none"> • Material AISI316L • sanitary quick interface with mirror polishing internal surface and sandblasting outside surface • fit all brands of membrane packs

Raw material tank	<ul style="list-style-type: none"> Material AISI 316L, volume 2L, Sartorius outlet filter
Stainless steel bracket	<ul style="list-style-type: none"> Material AISI 316L, sand blasting outside surface
Pressure gauge	<ul style="list-style-type: none"> Sanitary diaphragm pressure gauge, range 0~4Mpa, anti-shaking pointer

Optional items

Item no.	Name	Picture
CFF001	Four plunger diaphragm pump <ul style="list-style-type: none"> High precision pump head imported from Germany Can be upgraded to color touch screen with data exporting function With low pulse and quiet operation Simple design and easy cleaning 	
CFF002	Tank weighing <ul style="list-style-type: none"> METTLER-TOLEDO original XS series precision balance Digital display and touch screen Provide matching tripod feed tank 	
CFF003	Fully automatic control system <ul style="list-style-type: none"> Both CFF-01, CFF-05 can be upgraded to fully automatic control system Compact design, easy for laboratory users to use and move One-piece modular design, can be customized according to user requirements Pump, pressure, temperature, flow meter and so on, using digital analog signal 	
CFF004	Fully automatic touch screen control <ul style="list-style-type: none"> Adopts the latest version of HM-Control All the experimental data are monitored, collected and exported in real time The device can be connected with PC terminals, mobile phones and iPad through WIFI to realize multi end users Simultaneous detection and manipulation 	

2. CFF-05 Small Tangential Flow Ultrafiltration System, 30 ~90L/H



It is suitable for small-scale TFF research in biological laboratories, such as biological separation, material concentration and protein solution purification. Small size, exquisite, easy to disassemble. It is designed and manufactured by medical grade sanitary standard. It is small, exquisite and easy to assemble and disassemble.

CFF-05 Basic Information

- Model: CFF-05
- Membrane form: 1 to 3 imported original box-type flat membranes of 0.5 square meters
- Membrane material: Biomax (polyether sulfone), PLC (modified cellulose), PVDF (polyvinylidene fluoride)
- Process capacity: 30 ~90L/H
- Power unit: Precision original peristaltic pump 220V, maximum flow 9L/min
- Raw material tank: material AISI 316L, volume 3.5L

Stainless steel fixture

- Material AISI316L
- 2 in 2 out sanitary quick interface with mirror polishing internal surface and sand blasting outside surface
- Fit 0.1 m imported box type flat membrane, optional brand Millpore, Sartorius and PALL.



Power unit

- LONGER peristaltic pump with reliable quality
- Maximum flow: 9L/MIN for CFF-O5
- Maximum pressure: 0.3Mpa
- Control: Start and stop control, direction control, speed control (0-5V,0-10V,0-, 10KHZ are optional)



Stainless steel bracket + raw material tank

- Material AISI 316L
- Sartorius Outlet Filter
- Siphon feeding, easy lab aseptic continuous operation
- Tank volume: 1L, 2L, 3.5L, 5L, 10L, can be customized



Flat membrane packs

- Filtration area:0.5 m2 Ultrafiltration / microfiltration is optional
- Membrane material: Biomax , PLC(modified cellulose)PVDF (polyvinylidene fluoride)
- Optional brand: Millpore, Sartorius, PALL






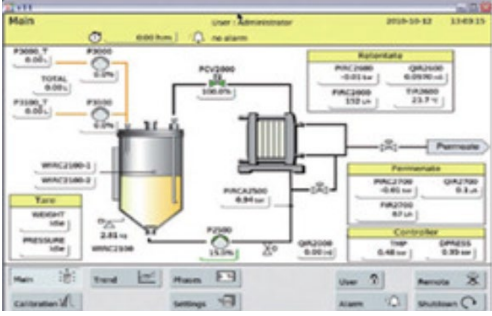
Membrane material	Molecular weight cut-off (KD)	Most suitable molecular retention range>99%(KD)
Biomax-5	5	12-25(growth factor hormone)
Biomax-8	8	25-50(growth factor, hormone)
Biomax-10	10	50-100(growth factor, hormone)
Biomax-30	30	100-140(enzyme)
Biomax-50	50	140-300(IgGs)
Biomax-100	100	300-500 (parvovirus, antigen)
Biomax-300	300	> 500 (IgMs, big virus)
Biomax-500	500	> 0.3um (colloid, granules)
Biomax-1000	1000	> 0.3um (colloid, granules)
PLCCC	5	8-18(proinsulin, hematopoietic factor)
PLCGC	10	18-60(hemoglobin, enzyme)
PLCTK	30	60-200(monoclonal antibody)
PLCHK	100	200-500(parvovirus, viral antigen)
PLCMK	300	> 500 (IgMs, big virus)
PLCXK	1000	>0.3um(colloid, granules)
PVDF(Microfiltration)	0.1um/0.22um/0.45um/0.65um	Large diameter of the bacteria particles

Specification

Model	CFF-05
Power unit	<ul style="list-style-type: none"> Precision peristaltic pump 220V Maximum flow 9L/MIN Seamless replacement with four plunger diaphragm pump Speed range 1-600RP
Membrane element	<ul style="list-style-type: none"> Imported box type flat membrane with an area of 0.5 square meters can install 1~3 blocks
Process capacity	<ul style="list-style-type: none"> 30~90L/H
Stainless steel fixture	<ul style="list-style-type: none"> Material AISI 316L sanitary quick interface with mirror polishing internal surface and sandblasting outside surface fit all brands of membrane packs
Raw material tank	<ul style="list-style-type: none"> Material AISI 316L volume 3.5LSartorius outlet filter
Stainless steel bracket	<ul style="list-style-type: none"> Material AISI 316L, sand blasting outside surface
Pressure gauge	<ul style="list-style-type: none"> Sanitary diaphragm pressure gauge, range 0~4Mpa, anti-shaking pointer

Optional items

Item no.	Name	Picture
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<p>CFF001</p>	<p>Four plunger diaphragm pump</p> <ul style="list-style-type: none"> • High precision pump head imported from Germany • Can be upgraded to color touch screen with data exporting function • With low pulse and quiet operation • Simple design and easy cleaning 	
<p>CFF002</p>	<p>Tank weighing</p> <ul style="list-style-type: none"> • METTLER-TOLEDO original XS series precision balance • Digital display and touch screen • Provide matching tripod feed tank 	
<p>CFF003</p>	<p>Fully automatic control system</p> <ul style="list-style-type: none"> • CFF-O5 can be upgraded to fully automatic control system • Compact design, easy for laboratory users to use and move • One-piece modular design, can be customized according to user requirements • Pump, pressure, temperature, flow meter and so on, using digital analog signal 	
<p>CFF004</p>	<p>Fully automatic touch screen control</p> <ul style="list-style-type: none"> • Adopts the latest version of HM-Control • All the experimental data are monitored, collected and exported in real time • The device can be connected with PC terminals, mobile phones and iPad through WIFI to realize multi end users • Simultaneous detection and manipulation 	

Pilot Type Ceramic Membrane Filtration

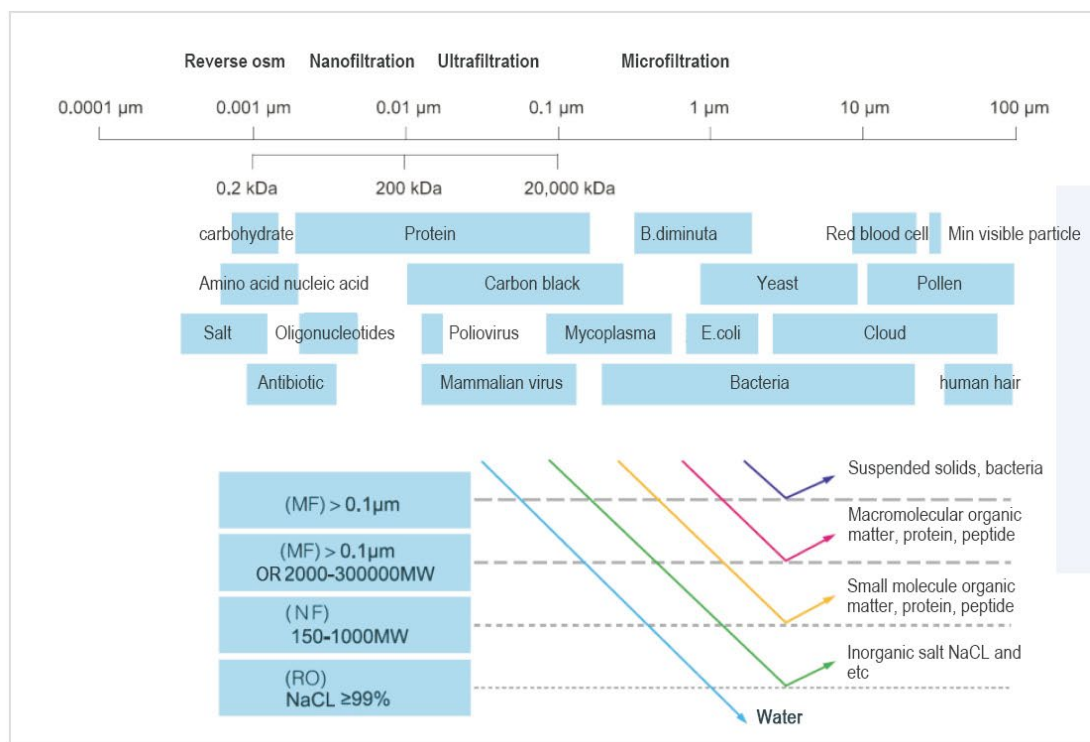
Process principle

Ceramic membrane separation technology is a liquid separation process in the form of "cross-flow filtration". The raw material liquid flows at a high speed in the membrane tube, and the clarified permeate containing the small molecular component is permeable to the membrane in the direction perpendicular to the pressure, and the turbid concentrate containing the macromolecular component is trapped by the membrane, thereby separating the fluid. Concentration, purification purposes.

Features

- ✓ Can withstand high temperatures, suitable for filtration in high temperature processes, chemically stable
- ✓ High mechanical strength, wide pH tolerance, acid resistance, alkali resistance, resistance to organic solvents and strong oxidants
- ✓ Long service life, low overall equipment cost and high-cost performance
- ✓ High multiples, reducing water usage and reducing wastewater discharge
- ✓ Sterilize the membrane module with high temperature steam, suitable for sterilization filtration

Classification



Divided into MF, UF, NF, RO according to membrane pore size

3. CMF-05 Ceramic Membrane Filtration Separation Equipment, 30-60L/H



System Description

The membrane ceramic membrane experimental equipment CM-05 is a separation equipment suitable for laboratory research developed by the SHUOBODA team. It can be used in microfiltration, ultrafiltration, and fine ultrafiltration. The membrane can be selected according to the molecular weight of the substance. Equipped with the equipment, it can separate substances of 1.4um-1KD (kilodalton), and has the advantages of simple operation, flexibility and easy cleaning.

Basic information

- Model: CMF-05
- Process Capacity: 30-60L/H
- Membrane Element: French original imported ceramic membrane
- Contact Material: Material AISI 304, food grade hose
- Material Circulation Tank: Effective volume V=30L

Features

Item	Picture
<p>Power Unit</p> <ul style="list-style-type: none"> • Imported GRUNDFOS pump • Frequency converting control • High pressure protection device 	

<p>Membrane Shell</p> <ul style="list-style-type: none"> • PH range: 0-14 • Working pressure: <95°C • Maximum working pressure: <10bar • Connection type: High pressure clamp quick disconnection 	
<p>Ceramic Membrane Element</p> <ul style="list-style-type: none"> • French original imported ceramic membrane • Membrane type: φ25mm: 580/1178mm • Range of application: Microfiltration, ultrafiltration and fine ultrafiltration 	
<p>Electrical Control Cabinet</p> <ul style="list-style-type: none"> • Temperature, pressure, on-line monitoring of liquid velocity • Pump frequency conversion controller, real-time display speed and frequency • Temperature, pressure preset alarm 	
<p>Material Standard</p> <ul style="list-style-type: none"> • Contact material part: Material AISI 304, food grade hose material circulation tank • Non-contact material part: Material AISI 304, carbon steel + spray paint • Pipeline: Sanitary seamless stainless-steel tube • Valves: Food grade sanitary direct ball valves, diaphragm valves 	

Specifications:

Model	CMF-05
Process Capacity	30-60L/H
Working Pressure	0-9.8bar
Membrane type	French original imported ceramic membrane
Membrane loading capacity	2 pieces ceramic membrane elements
Single membrane area	0.25 m ²
Membrane element length:	1178mm
Burst pressure:	>95bars
Maximum working pressure:	10bars
Membrane pore size:	Intercept precision 1.4μm-1KD
Valve, flow meter	Health ball valve, rotor flow meter
Pipeline	Material AISI 304, sanitary polishing inside and outside, heat exchanger with stainless steel pipe
Material circulation tank	AISI 304, effective volume V=30L
Size:	750*800*1700mm

System Upgrade

- Materials, heat exchangers, flow meters, valves, pumps, etc. can be specially customized according to different environments used by users.
- Semi-automatic and fully automatic control systems can be customized according to user needs
- Remote control, mobile iPad control system customized according to user needs

4. CMFS-05 Pilot Ceramic-Spiral Multifunctional Membrane Filtration Separation Equipment, 30-60L/h



System Description

The ceramic roll-type multi-functional membrane separation equipment CSM is a multi-functional membrane separation equipment specially built by the SHUOBODA team for laboratory use. It can realize simultaneous testing of ceramic membranes and roll-type membranes on one device and can be applied. It is used for microfiltration, ultrafiltration, and fine ultrafiltration. It can also be used to wash the membrane according to the molecular weight of the substance. It can separate substances from 1.4 μ m to 1KD (kilodal). It has the advantages of simple operation, flexibility and easy cleaning.

Basic information

Model: CMFS-05

Process Capacity: 30-60L/H

Membrane Element: French original imported ceramic membrane, 1812 roll-type membrane

Contact Material: Material AISI 304, food grade hose

Material Circulation Tank: Effective volume V=30L

Power Unit

Imported GRUNDFOS pump

Frequency converting control

High pressure protection device

Membrane Shell

PH range: 0-14

Working pressure: <95 $^{\circ}$ C

Maximum working pressure: <10bar

Connection type: ANSI High pressure clamp quick disconnection

Ceramic Membrane Element

French original imported ceramic membrane

Membrane type: φ25mm: 580/1178mm

Range of application: Microfiltration, ultrafiltration and fine ultrafiltration

Electrical Control Cabinet

Temperature, pressure, on-line monitoring of liquid velocity

Pump frequency conversion controller, real-time display speed and frequency

Temperature, pressure preset alarm

Material Standard

Contact material part: Material AISI 304, food grade hose material circulation tank

Non-contact material part: Material AISI 304, carbon steel + spray paint

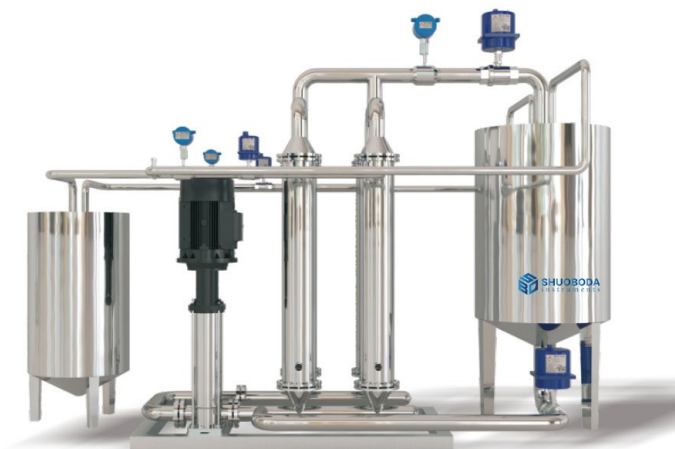
Pipeline: Sanitary seamless stainless-steel tube

Valves: Food grade sanitary direct ball valves, diaphragm valves

Specifications:

Model	CMFS-05
Process Capacity	30-60L/H
Working Pressure	0-16.8 bar
Membrane type	French original imported ceramic membrane
Membrane element loading capacity	1-piece ceramic membrane element; 2 pieces roll type membrane elements;
Single membrane area	0.25 m ²
Membrane element length:	1178mm
Burst pressure:	>95bars
Maximum working pressure:	10bars
Membrane pore size:	Intercept precision 1.4μm-1KD
Valve, flow meter	Health ball valve, rotor flow meter
Pipeline	Material AISI 304, sanitary polishing inside and outside, heat exchanger with stainless steel pipe
Material circulation tank	AISI 304, effective volume V=30L
Size:	950*700*1700mm

5. CMF-90 Pilot Ceramic Membrane Filtration Separating Equipment, 500~2000L/h



System Description

Ceramic membrane experiment device (CFM-90) can be applied to microfiltration, ultrafiltration and fine ultrafiltration, the membrane can be selected according to the size of material molecular weight, it can separate the material of 1.4 μm -1KD, with advantages of simple and flexible operation and easy cleaning, etc.

Basic information

Model: CMF-90

Process Capacity: 500~2000 L/H

Membrane Element: French original imported ceramic membrane, 1812 roll-type membrane

Contact Material: Material AISI 304, food grade hose

Material Circulation Tank: Effective volume V=1500L

Power Unit

Imported GRUNDFOS pump
Frequency converting control
High pressure protection device

Membrane Shell

PH range: 0-14
Working pressure: <95 $^{\circ}\text{C}$
Maximum working pressure: <10bar
Connection type: ANSI High pressure clamp quick disconnection

Ceramic Membrane Element

French original imported ceramic membrane
Mmembrane type: ϕ 25mm: 580/1178mm
Range of application: Microfiltration, ultrafiltration and fine ultrafiltration

Electrical Control Cabinet

Temperature, pressure, on-line monitoring of liquid velocity
Pump frequency conversion controller, real-time display speed and frequency
Temperature, pressure preset alarm

Material Standard

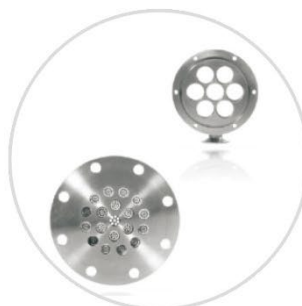
Contact material part: Material AISI 304, food grade hose material circulation tank
Non-contact material part: Material AISI 304, carbon steel + spray paint
Pipeline: Sanitary seamless stainless-steel tube
Valves: Food grade sanitary direct ball valves, diaphragm valves



Ceramic membrane



Power unit



Membrane shell



Components

Specification

NO.	Item name	Specification
Basic information		
1	model	CMF-90
2	Processing capacity	500-2000 L/H
3	work pressure	0-25 bar
4	Material circulation tank	1500L
5	Power unit	Imported brand centrifugal pump
Membrane element		
1	Membrane type	Original imported ceramic membrane
2	Filter range	Microfiltration, ultrafiltration, nanofiltration
3	Membrane element length	1178mm
4	Membrane element loading	Ceramic membrane 37 pieces
5	Single membrane area	0.25 m ²
6	Health standard	FDA standard certification 3-A Hygiene Standard Certification
Membrane shell		
1	Material	AISI 304/316L
2	Model	MS series high quality ceramic membrane shell
Control System		
1	Electrical control cabinet	The chassis adopts HSSP standard spraying process; the electrical components adopt Schneider Electric standards
2	Touchscreen	Capacitive high-resolution touch screen
3	Software system	Materials, heat exchangers, flow meters, valves, pumps, etc. can be specially customized according to the user's usage environment;

Roll Membrane Filtration

Multifunction pilot roll membrane filtration equipment, can be used for microfiltration, ultrafiltration, nanofiltration and reverse osmosis membranes, widest range separation for both water-based and organic solvent.

Application:

Applied to biological, pharmaceutical, food crystal beverage and chemical environmental protection industries

Process principle

In order to achieve the purpose of separation and purification, the permeation membrane is selected as the separation medium, and a driving force is applied on both sides of the membrane so that the raw material side components selectively permeate through the membrane.

Features:

Operate under room temperature	Very little loss of active ingredients, especially suitable for heat sensitive substances
No phase change	Maintain the original flavor, and consume very low energy
No chemical changes	Typical physical separation process, without chemical reagents and additives, products are not contaminated
Good selectivity	Material separation can be done in the molecular range
Wide range of applications, strong adaptability	Large or small scale, continuous or Intermittent, Simple process, convenient operation and easy automation

Range classification

Divided into microfiltration MF, ultrafiltration UF, nanofiltration NF and reverse osmosis RO according to membrane size

1. RMF-1812A Auto Multifunctional Roll Membrane Filtration Separation Plant (Pneumatic diaphragm valve control, Auto PLC control), 2~7 L/h






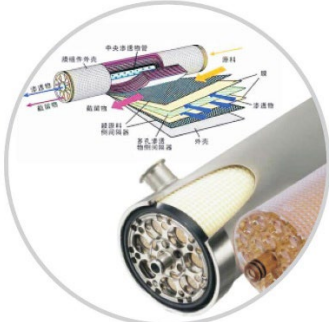


Roll membrane filtration equipment RMF-1812A (Automatic) mainly used in separation and purification of ultrafiltration (UF), nanofiltration (NF) and reverse osmosis (RO), can be used for filtration, decolorization, desalination, purification and concentration. According to the size of the molecular weight of the separation material, the membrane is selected; The material from 0.03 μm to 100daltion can be separated. With the advantages of easy cleaning, maintenance and high freedom of use.

Basic information

- Model: RMF- 1812A
- Processing capacity: 2 ~ 7L/H
- Membrane element: GE imported roll type membrane, Single membrane area 0.26 m^2
- Power unit: Imported GRUNDFOS pump, 0 ~ 26Bar (Frequency adjustable)
- Material circulation tank: Effective volume V=10L



Components

	<p>Power unit</p> <ul style="list-style-type: none"> • Imported GRUNDFOS pump • Variable frequency control, adjustable from 20 to 50Hz, with wide range of use • Rate of flow: 200 ~ 1100L/H • Pressure: 0 ~ 26 Bar adjustable
	<p>Membrane Shell</p> <ul style="list-style-type: none"> • 3 parallel membrane wall • Connection: High pressure clamp quick release connection, pressure 20Mpa • Material: AISI 304 • Surface treatment: External surface brushed treatment, inner surface mirror polishing, with food hygiene grade 
	<p>Roll type membrane elements</p> <ul style="list-style-type: none"> • 3 pieces GE imported roll membrane • Model No.: 1812 industrial separation membrane, anti-fouling membrane • Scope of application: microfiltration, ultrafiltration, nanofiltration, reverse osmosis • According to the user process, can select different brand 1812 membrane with the same specifications, including domestic roll membrane 
	<p>Control cabinet</p> <ul style="list-style-type: none"> • Field instrument control cabinet • Control mode: PID instrument control, automatic adjustment • Sensor: Temperature electrode, pressure sensor, frequency conversion motor • Flow meter: Field flow meter, manual adjustment • instrument: Four in one display + control instrument, frequency conversion regulator

	<p>Material standard</p> <ul style="list-style-type: none"> • Contact material part: Material AISI 304, sanitary hose • Non-contact material part: Material AISI 304, carbon + spray paint • pipeline: Sanitary seamless stainless-steel pipe • Valve: Food grade sanitary direct pass ball valve, diaphragm valve
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Specification parameters

Item name	Specification
Processing capacity:	2~7L/h
Power unit	Imported GRUNDFOS pump, frequency conversion control, with high voltage protection settings
Working pressure	0 ~ 26 bar adjustable
Membrane element:	<ul style="list-style-type: none"> • Membrane species: GE imported roll type separation membrane - roll type ultrafiltration, nanofiltration, RO membrane • Quantity: 1 • Single membrane area: 0.26 m² • Membrane element length: 298.5mm • Membrane shell: Material AISI 304、high pressure clamp quick disconnect、Anti-pressure : 20Mpa • Membrane aperture: Interception accuracy >95% (Standard material test) MWCO 200KD,100KD, 10KD,5KD, 2K,1K,600D,300D,150D,100D, RO, customized
Valves, flow meter:	Imported automatic ball valve, imported liquid mass flow meter
pipeline:	Material AISI 304, sanitary inside and outside polishing, with stainless steel pipe heat exchanger
Electric control cabinet:	<ul style="list-style-type: none"> • SIEMENS PLC control module • 15-inch LCD high-definition touch screen • Temperature, pressure, flow, pump frequency conversion control operation, curve and data record and export • Temperature and pressure preset alarm
Material circulation tank:	AISI 304, effective volume =10L
System upgrade:	<ul style="list-style-type: none"> • Material, heat exchanger, flowmeter, valve, pump, etc., can be customized according to the user's environment • Semi-automatic and automatic control system can be customized according to user requirements • Remote control, mobile iPad control system can be customized according to user requirements
Size:	630x580x1100mm
Weight:	46kg

2. RMF-1812 Multifunctional membrane separation device (manual), 3 ~ 20L/H



Description

Laboratory membrane separation equipment RFM-1812 (manual type) is mainly used for the separation and purification of ultrafiltration UF, nanofiltration NF, and reverse osmosis RO. It can perform filtration, decolorization, desalination, purification, and concentration.

According to the molecular weight of the separated substances, the membrane can be selected to separate substances from 0.03µm to 100dalton.


It has the advantages of easy cleaning and maintenance and great freedom of use.



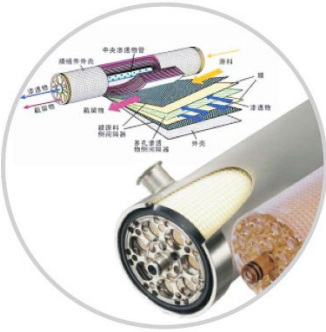



Basic information

- Model: RMF-1812
- Processing capacity: 3 ~ 20L/H
- Membrane element: GE imported roll type membrane, Single membrane area 0.26 m²
- Power unit: Imported GRUNDFOS pump, 0 ~ 16.8Bar (Frequency adjustable)
- Material circulation tank: Effective volume V=16L



Components :

	<p>Power unit</p> <ul style="list-style-type: none"> • Imported GRUNDFOS pump • Variable frequency control, adjustable from 20 to 50Hz, with wide range of use • Rate of flow: 200 ~ 1100L/H • Pressure: 0 ~ 16.8Bar adjustable
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	<p>Membrane Shell</p> <ul style="list-style-type: none"> • 3 parallel membrane wall • Connection: High pressure clamp quick release connection, pressure 20Mpa • Material: AISI 304 • Surface treatment: External surface brushed treatment, inner surface mirror polishing, with food hygiene grade 
	<p>Roll type membrane elements</p> <ul style="list-style-type: none"> • 3 pieces GE imported roll membrane • Model No.: 1812 industrial separation membrane, anti fouling membrane • Scope of application: microfiltration, ultrafiltration, nanofiltration, reverse osmosis • According to the user process, can select different brand 1812 membrane with the same specifications, including domestic roll membrane 
	<p>Control cabinet</p> <ul style="list-style-type: none"> • Field instrument control cabinet • Control mode: PID instrument control, automatic adjustment • Sensor: Temperature electrode, pressure sensor, frequency conversion motor • Flow meter: Field flow meter, manual adjustment • Instrument: Four in one display + control instrument, frequency conversion regulator
	<p>Material standard</p> <ul style="list-style-type: none"> • Contact material part: Material AISI 304, sanitary hose • Non-contact material part: Material AISI 304, carbon + spray paint • pipeline: Sanitary seamless stainless-steel pipe • Valve: Food grade sanitary direct pass ball valve, diaphragm valve

Specification parameter

Item name	Specification
Processing capacity	3 ~ 20L/h

Power unit	Imported GRUNDFOS pump, frequency conversion control, with high voltage protection settings
Working pressure	0 ~ 16.8bar adjustable
Membrane element	<ul style="list-style-type: none"> • Membrane species: GE imported roll type separation membrane - roll type ultrafiltration, nanofiltration, RO membrane Quantity: 3 • Single membrane area: 0.26 m² • Membrane element length: 298.5mm • Membrane shell: Material AISI 304、high pressure clamp quick disconnect、Anti-pressure : 20Mpa • Membrane aperture: Interception accuracy >95% (Standard material test) MWCO 200KD,100KD, 10KD,5KD, 2K,1K,600D,300D,150D,100D, RO, customized
Valves, flowmeter	Sanitary ball valve and rotor flowmeter
pipeline	Material AISI 304, sanitary inside and outside polishing, with stainless steel pipe heat exchanger
Electric control cabinet	<ul style="list-style-type: none"> • Online monitoring of temperature, pressure and liquid flow rate • Pump frequency conversion controller, real-time display of speed and frequency • Temperature and pressure preset alarm
Material circulation tank	AISI 304, effective volume =16L
System upgrade	<ul style="list-style-type: none"> • Material, heat exchanger, flowmeter, valve, pump, etc., can be customized according to the user's environment • Semi-automatic and automatic control system can be customized according to user requirements • Remote control, mobile iPad control system can be customized according to user requirements
Size	870x650x1200mm
Weight	60kg

3. RMF-2540 Multifunctional Roll-film Membrane Separation Device, 20 ~ 50L/H



Description

- The small membrane separation equipment 2540 is mainly used for the separation and purification of ultrafiltration UF, nanofiltration NF, and reverse osmosis RO. It can perform filtration, decolorization, desalination, purification, and concentration.
- According to the molecular weight of the separated substances, the membrane can be selected to separate substances from 0.03 μ m to 100dalton.
- Easy to clean and maintain, with great freedom of use.

Basic information

- Model: RMF-2540
- Processing capacity: 20 ~ 50L/H
- Membrane element: GE imported roll type membrane, Single membrane area 1.2 ~ 1.5 m²
- Power unit: Imported GRUNDFOS pump, 0 ~ 25Bar (Frequency adjustable)
- Material circulation tank: Effective volume V=60L

Power unit

- Imported GRUNDFOS pump
- Variable frequency control, adjustable from 20 to 50Hz, with wide range of use
- Rate of flow: 200 ~ 1100L/H
- Pressure: 0 ~ 25 Bar adjustable



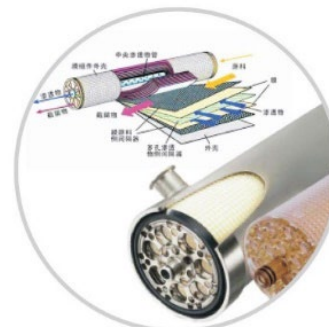
Membrane Shell

- 3 parallel membrane wall
- Connection: High pressure clamp quick release connection, pressure 20Mpa
- Material: AISI 304
- Surface treatment: External surface brushed treatment, inner surface mirror polishing, with food hygiene grade



Roll type membrane elements

- 3 pieces GE imported roll membrane
- Model No.: 2540 industrial separation membrane, anti-fouling membrane
- Scope of application: microfiltration, ultrafiltration, nanofiltration, reverse osmosis
- The 2540 membrane has GE, Dow Chemical brand membrane with rich diversity lateral comparison test; The universal membrane shell adapts to a variety of brand membrane



Control cabinet

- Field instrument control cabinet
- Control mode: PID instrument control, automatic adjustment
- Sensor: Temperature electrode, pressure sensor, frequency conversion motor
- Flow meter: Field flow meter, manual adjustment
- Instrument: Four in one display + control instrument, frequency conversion regulator

Material standard

- Contact material part: Material AISI 304, sanitary hose
- Non-contact material part: Material AISI 304, carbon + spray paint
- pipeline: Sanitary seamless stainless-steel pipe
- Valve: Food grade sanitary direct pass ball valve, diaphragm valve



Specification parameter

Model	RMF-2540
Image	
Processing capacity:	20~50 L/h
Power unit	Imported GRUNDFOS pump, frequency conversion control, with high voltage protection settings
Working pressure	0 ~ 25 bar adjustable
Membrane element:	<ul style="list-style-type: none"> • Membrane species: GE imported roll type separation membrane - roll type ultrafiltration, nanofiltration, RO membrane • Quantity: 3 • Single membrane area: effective area 1.2 ~ 1.5 m² • Membrane element length: 1016mm

	<p>Membrane shell: Material AISI 304、 high pressure clamp quick disconnect、 Anti-pressure : 20Mpa</p> <ul style="list-style-type: none"> • Membrane aperture: Interception accuracy >95%(Standard material test) MWCO 200KD,100KD, 10KD,5KD, 2K,1K,600D,300D,150D,100D, RO, customized
Valves, flow meter:	Imported automatic ball valve, imported liquid mass flow meter
pipeline:	Material AISI 304, sanitary inside and outside polishing, with stainless steel pipe heat exchanger
Electric control cabinet:	<ul style="list-style-type: none"> • SIEMENS PLC control module • 15-inch LCD high-definition touch screen • Temperature, pressure, flow, pump frequency conversion control operation, curve and data record and export • Temperature and pressure preset alarm
Material circulation tank:	AISI 304, effective volume =60L
System upgrade:	<ul style="list-style-type: none"> • Material, heat exchanger, flowmeter, valve, pump, etc., can be customized according to the user's environment • Semi-automatic and automatic control system can be customized according to user requirements • Remote control, mobile iPad control system can be customized according to user requirements
Size:	1400x1000x1800mm
Weight:	100 kg

4. RMF-4040 Pilot Multifunctional roll-membrane filtration separation plant, 50 ~ 100L/H



Description

Laboratory membrane separation equipment Multi RFM-4040 is a laboratory membrane separation equipment developed by the SHUOBODA team. It can perform the separation and purification of ultrafiltration UF, nanofiltration NF, and reverse osmosis RO. It can perform filtration, decolorization, desalination, Purify and concentrate. Membranes are selected according to the molecular weight of the separated substances, and can separate substances from 0.03 m to 100 dalton. It has the advantages of easy cleaning and maintenance and great freedom of use.

Basic information

- Model: RMF-4040
- Processing capacity: 50 ~ 100L/H
- Membrane element: GE imported roll type membrane, Single membrane area 5.6 ~ 7.5 m²
- Power unit: Imported GRUNDFOS pump, 0 ~ 25Bar (Frequency adjustable)
- Material circulation tank: Effective volume V=80L

Power unit

- Imported GRUNDFOS pump
- Booster pump + circulating pump, double pump control to meet the needs of experimental diversity
- Variable frequency control, adjustable from 20 to 50Hz, with wide range of use
- Pressure: 0 ~ 25Bar adjustable

Membrane Shell

- 3 parallel membrane wall
- Connection: High pressure clamp quick release connection, pressure 20Mpa
- Material: AISI 304
- Surface treatment: External surface brushed treatment, inner surface mirror polishing, with food hygiene grade

Roll type membrane elements

- 3 pieces GE imported roll membrane
- Model No.: 4040 industrial separation membrane, anti-fouling membrane
- Scope of application: microfiltration, ultrafiltration, nanofiltration, reverse osmosis
- The 4040 membrane has GE, Dow Chemical brand membrane with rich diversity lateral comparison test; The universal membrane shell adapts to a variety of brand membrane

Control cabinet

- Field instrument control cabinet
- Control mode: PID instrument control, automatic adjustment
- Sensor: Temperature electrode, pressure sensor, frequency conversion motor
- Flow meter: Field flow meter, manual adjustment
- Instrument: Four in one display + control instrument, frequency conversion regulator

Material standard

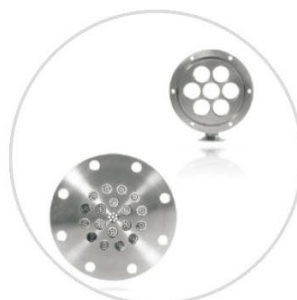
- Contact material part: Material AISI 304, sanitary hose
- Non-contact material part: Material AISI 304, carbon + spray paint
- pipeline: Sanitary seamless stainless-steel pipe
- Valve: Food grade sanitary direct pass ball valve, diaphragm valve



Ceramic membrane



Power unit



Membrane shell



Components

Specification parameter

Model	RMF-4040
Processing capacity	50 ~ 100L/h
Power unit	Imported GRUNDFOS pump, frequency conversion control, with high voltage protection settings
Working pressure	0 ~ 25 bar adjustable
Membrane element	<ul style="list-style-type: none"> • Membrane species: GE imported roll type separation membrane - roll type ultrafiltration, nanofiltration, RO membrane • Quantity: 3 • Single membrane area: 5.6 ~ 7.5 m² • Membrane element length: 1016mm • Membrane shell: Material AISI 304、high pressure clamp quick disconnect、Anti-pressure : 20Mpa • Membrane aperture: Interception accuracy >95% (Standard material test) MWCO 200KD, 100KD, 10KD, 5KD, 2K,1K, 600D, 300D, 150D, 100D, RO, customized
Valves, flowmeter	Sanitary ball valve and rotor flow meter
pipeline	Material AISI 304, sanitary inside and outside polishing, with stainless steel pipe heat exchanger
Electric control cabinet	<ul style="list-style-type: none"> • Online monitoring of temperature, pressure and liquid flow rate • Pump frequency conversion controller, real-time display of speed and frequency

	<ul style="list-style-type: none"> • Temperature and pressure preset alarm
Material circulation tank	AISI 304, effective volume =80L
System upgrade	<ul style="list-style-type: none"> • Material, heat exchanger, flowmeter, valve, pump, etc., can be customized according to the user's environment • Semi-automatic and automatic control system can be customized according to user requirements • Remote control, mobile iPad control system can be customized according to user requirements
Size	1400x1000x1800mm
Weight	130kg

Membranes

1. Imported ceramic membrane-microfiltration, ultrafiltration

Description

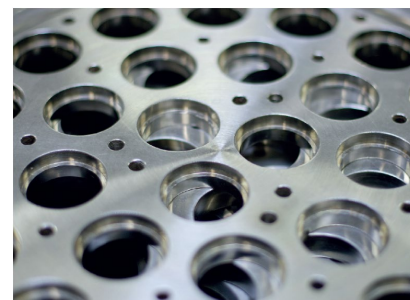
Ceramic membrane, also known as inorganic ceramic membrane, is an asymmetric membrane formed from inorganic ceramic materials prepared through a special process. At present, the world's largest imported ceramic membranes and the most technologically advanced suppliers are from Germany, France and Switzerland. In the field of liquid separation, imported ceramic membrane companies can provide microfiltration for large pore sizes, conventional ultrafiltration and incredible nanofiltration. With the rapid development of ceramic membrane technology, ceramic membranes have replaced traditional organic membranes and are used in more liquid separations.



SHUOBODA provides ceramic membranes imported from Germany. In different fields, such as oil-water separation, biological material separation, and pharmaceutical separation, we will provide the most cost-effective imported ceramic membranes according to the user's usage environment. At the same time, we provide sealing technology for imported ceramic membranes, transformation technology and overall equipment supply. We are able to provide the most comprehensive range of ceramic membranes with the widest pore sizes.

Basic Information

- Molecular weight: 0.05 um, 150 kD, 100 kD, 20 kD, 10 kD, 5 kD, 1kD, 200D·Operating temperature: <250C
- Chemical stability: acid and alkali resistance, organic solvent resistance, etc.
- Imported ceramic membrane length: up to 1500mm can be customized



Advantages





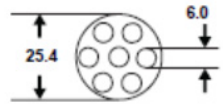

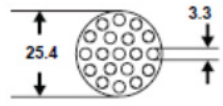



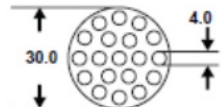

- Longer life cycle, higher throughput, more precise ability to separate steam sterilization and backwash bacterial resistance
- High wear resistance, high throughput, high durability
- Possibility of regeneration, dry storage after cleaning



Applications

- Milk: replacing traditional pasteurization, milk fractionation, milk protein standardization and milk protein (WPI/WPC), complete separation process of bovine colostrum.
- Beverage and wine industry: clarification and microfiltration of fruit drinks, sugar water and health drinks, clarification and filtration of wine, beer, fruit wine, etc.
- Natural extracts: Removal, clarification and filtration of plant fibers from natural extracts.
- Biological fermentation: yeast cell removal from fermentation broth: microfiltration clarification of fermentation broth
- Oily wastewater treatment: Ceramic membranes have irreplaceable advantages and are widely used in the treatment of various oily wastewaters.

Specification parameters

Model	Design size (mm)	Number of channels	Length (mm)	Unit Filter Area (m ²)	Picture
1/6		1	1000	about 0.019	
			1200	about 0.023	
1/16		1	1000	about 0.05	
			1200	about 0.06	
7/6		7	1000	about 0.13	
			1200	about 0.16	
19/3.3		19	1000	about 0.20	
			1200	about 0.24	
37/2		37	1000	about 0.23	
			1200	about 0.28	
19/4		19	1000	about 0,24	
			1200	about 0,29	

Model	Design size (mm)	Number of channels	Length (mm)	Unit Filter Area (m ²)	Picture
19/6		19	1200	about 0.43	
			1500	about 0.54	
37/3.8		37	1200	about 0.53	
			1500	about 0.67	
61/2.5		61	1200	about 0.58	
			1500	about 0.72	
19/8		19	1200	about 0.57	
			1500	about 0.72	
85/3.3		85	1200	about 1.06	
			1500	about 1.32	
211/2		211	1200	about 1.59	
			1500	about 1.99	

2. TAMI tubular ceramic membrane

The tubular ceramic membrane imported from France is made of completely high purity materials. The geometric shape is diverse and meets the needs of users.

Tubular ceramic membranes are used in different separation ranges: microfiltration, ultrafiltration, and fine ultrafiltration.

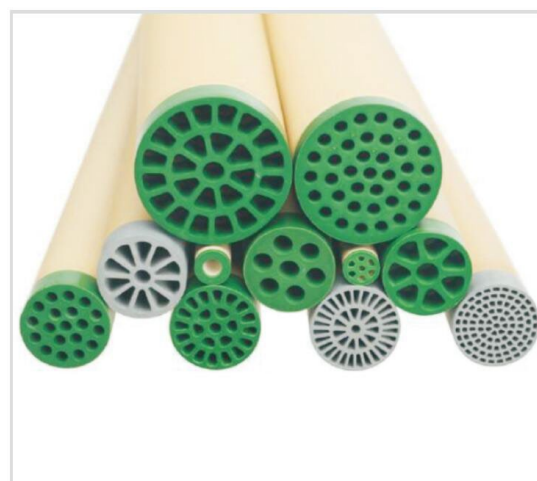
Standard length specifications of the membrane:

Φ10mm:250/600/1201mm

Φ20mm:1178mm

Φ25mm:580/1178mm

















Φ41mm:1020mm



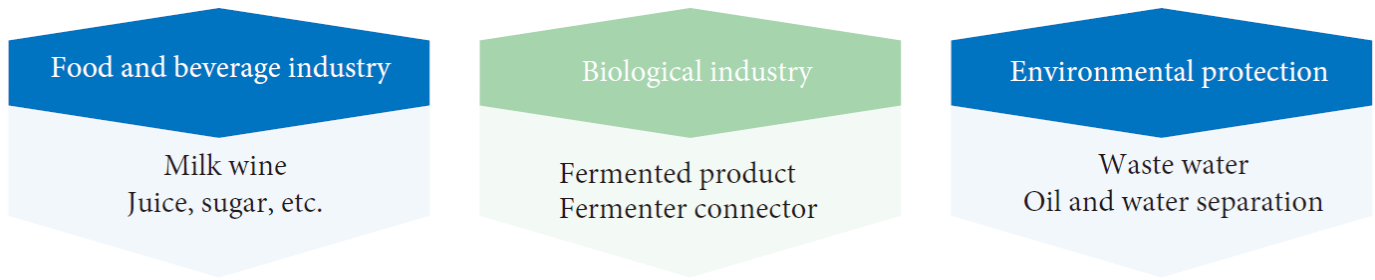
Membrane molecular weight

Fine ultrafiltration	Ultrafiltration	Microfiltration
1kg/mol	15kg/mol	0.14um
3kg/mol	50kg/mol	0.20um
5kg/mol	150kg/mol	0.30um
8kg/mol	300kg/mol	0.45um
		0.80um
		1.4um

Membrane selection

	External diameter(mm)	Channel number	Inner diameter (mm)	Area (m ²)	Useful cutting molecular weight
	10	1	6	0.02	Microfiltration Ultrafiltration Fine Ultrafiltration
	10	7	2	0.06	Microfiltration Ultrafiltration Fine Ultrafiltration
	20	1	15	0.06	Microfiltration
	20	5	6	0.13	Microfiltration
	20	13	3.5	0.21	Microfiltration
	20	32	2	0.33	Microfiltration
	25	7	6	0.16	Microfiltration Ultrafiltration Fine Ultrafiltration
	25	8	6	0.2	Microfiltration Ultrafiltration Fine Ultrafiltration
	25	11	4.6	0.25	Microfiltration Ultrafiltration
	25	19	3.5	0.25	Microfiltration Ultrafiltration Fine Ultrafiltration
	25	23	3.5	0.35	Microfiltration Ultrafiltration Fine Ultrafiltration
	25	39	2.5	0.5	Microfiltration Ultrafiltration Fine Ultrafiltration
	25	93	1.6	0.6	Microfiltration Ultrafiltration
	41	37	3.6	0.43	Microfiltration Ultrafiltration
	41	25	5.5	0.47	Microfiltration Ultrafiltration
	41	61	3.5	0.71	Microfiltration Ultrafiltration

Membrane application field



3. SiC Ceramic Membrane



Description

Silicon carbide membrane (SiC) is made by high-temperature sintering using recrystallization technology. Its porous support layer, transition layer, and membrane layer are all silicon carbide materials. Its filtration precision is microfiltration and ultrafiltration. The SiC membrane filtration system is a fluid separation process in the form of "cross-flow filtration". The raw material liquid flows at high speed in the membrane tube. Under the pressure drive, the clarified permeate containing small molecular components penetrates outward through the dense layer of the membrane in the vertical direction. The turbid concentrated liquid containing macromolecular components is intercepted, thereby achieving the purpose of clarification, separation, concentration and purification of the fluid.

Raw Material: Silicon Carbide

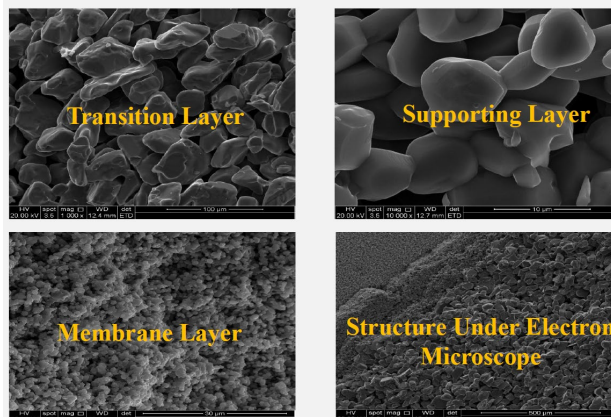
Alternate name of SiC is Corundum or Moissanite, including black SiC and Green SiC. SiC crystal has two kinds of structures which are α -SiC & β -SiC. SiC material has features of stable chemical properties, high coefficient thermal conductivity, low coefficient of thermal expansion, excellent abrasion resistance performance, Moh's hardness 9.5 grade (only a little lower than diamond), high temperature resistance, oxidation resistance. SiC is raw material of refractory, abrasive, metallurgy, photovoltaic industry.



Silicon Carbide Membrane

SiC Ceramic Microfiltration & Ultrafiltration Membrane is sintered through recrystallization technique in high temperature of 2400°C. The raw material Silicon Carbide have features of high hardness and high strength.

Micro-Structure of SiC Ceramic Membrane



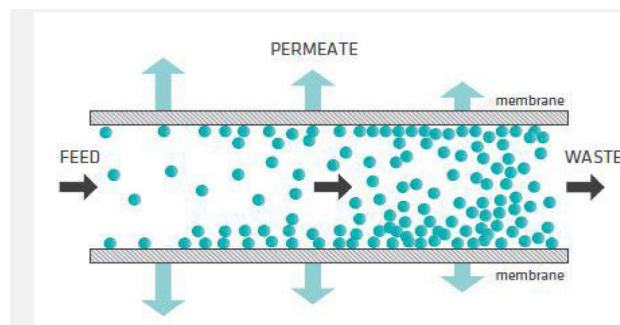
Features of SiC Ceramic Membrane

- Highest Flux for any membrane material
- Chemically inert (pH 0-14)
- Thermally resistant up to 800 °C
- Extremely hard and durable material
- Reduce your foot print and system costs
- Fast cleaning, more efficient chemical cleaning
- Unmatched performance in oil/water separation
- Long lifetime, less down time and maintenance



Basic Information

- Molecular weight: 0.1um-300kd Substrate, membrane dense layer material: 100% pure silicon carbide
- Porosity >45%
- Hardness: 2930+80 (Vickers hardness kg/mm)
- Temperature resistance: Atmospheric temperature 800 degrees
- Chemical resistance: PH=0-14
- Chemical stability: acid and alkali resistance, resistance to all organic solvents, etc.
- Film length: 100mm~1200mm, can be customized



Cross-Flow Principle of SiC Ceramic Membrane









Application industry

- Chemical industry process reengineering: oil-water separation in petrochemical industry, chlor-alkali chemical industry, coal chemical industry, coal-containing wastewater treatment, etc.
- Fine separation in the pharmaceutical industry: Purification and treatment of antibiotics, soda solutions and organic liquids, extraction and purification of Chinese patent medicines and natural extracts, production and separation of biopharmaceuticals, etc.
- Food industry digital extraction: clarification, filtration, concentration, purification, etc. of dairy products, soy products, brewing products, alcohol, juice, tea drinks, etc.
- Ultra-fine separation of new energy and new materials: new nanomaterials, new source batteries, graphene, white powder, precious metals, rare metals, potassium batteries, etc.
- Environmentally friendly water treatment: steel, printing and dyeing, machining cutting fluid, electronics industry, municipal sewage treatment, banknote printing, circuit board wastewater treatment, etc.

Advantages and performance comparison of SIC membrane and other membranes:

Name	SIC membrane	Polymer membrane	Al2O3 ceramic membrane	Metal membrane
carrier material	100%SIC	Polymer Materials	oxide	The golden mantis is supported by the snail hinge and the duel.
Membrane filter material	100%SIC	PSIPVCIPANIPVDFIPES	oxide	Oxide loading
Hardness	high	Low	high	high
Operating pressure	1-2 bar	1-2 bar	3-4bar	4-6bar
Pure water flux	3~4m3/m2.h	0.08~0.12m3/m2.h	0.25~3m3/m2.h	0.25~0.5m3/m2.h
Temperature resistance	800 degrees (air)	<40 degrees	<300 degrees	<300 degrees

Specification parameters

Series	Model	Picture	Channel	Length(mm)	Area (m ²)	Filtration accuracy
Φ 12	DJSC-12/1/8		1	100-1200		40nm,100nm, 500nm,1000nm
Φ 25.4	DJSC-25.4/7/6		7	1116	0.15	40nm,100nm, 500nm,1000nm
Φ 30	DJSC-30/7/6		7	1016	0.13	40nm,100nm, 500nm,1000nm
	DJSC-30/13/4		13	1016	0.20	40nm,100nm, 500nm,1000nm
	DJSC-30/19/4		19	1016	0.24	40nm,100nm, 500nm,1000nm
Φ 40	DJSC-40/19/6		19	1200	0.43	40nm,100nm, 500nm,1000nm
	DJSC-40/37/4		37	1200	0.56	40nm,100nm, 500nm,1000nm
Φ 118	DJSC-118/331/4		331	1200	5.00	40nm,100nm, 500nm,1000nm

4. Nanoceramic membrane-nanofiltration

Nanoceramic membrane cutting-edge technology:

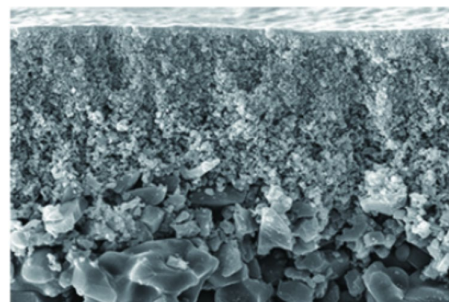
Nanoceramic membrane is undoubtedly the most popular imported ceramic membrane cutting-edge technology with the highest level of technological integration at present. Most ceramic membrane manufacturers on the market can provide the production and manufacturing of ceramic membranes above 30nm. For the production of ceramic membranes below 30nm, production line automation is required. Ceramic film production technology requires higher requirements, and currently there are not many manufacturers that can provide 10nm~30nm. Manufacturing with cutting apertures below 10nm places stringent requirements on ceramic membrane manufacturers. Currently, manufacturers that can provide ceramic films below 10nm are mainly concentrated in German manufacturers.



The imported ceramics provided by SHUOBODA are imported from France and Germany. In different fields, such as oil-water separation, biological material separation, and pharmaceutical separation, we will provide cost-effective and high-quality imported ceramic membranes according to the user's usage environment. At the same time, we provide ceramic membrane sealing technology, transformation technology and overall equipment supply.

Basic Information

- Pore diameter: 0.5nm ~10nm
- Operating temperature: < 250°C
- Chemical stability: acid and alkali resistance, organic solvent resistance, etc.
- Entrance ceramic membrane length: 100mm~1300mm can be customized



Advantages of nano ceramic membrane

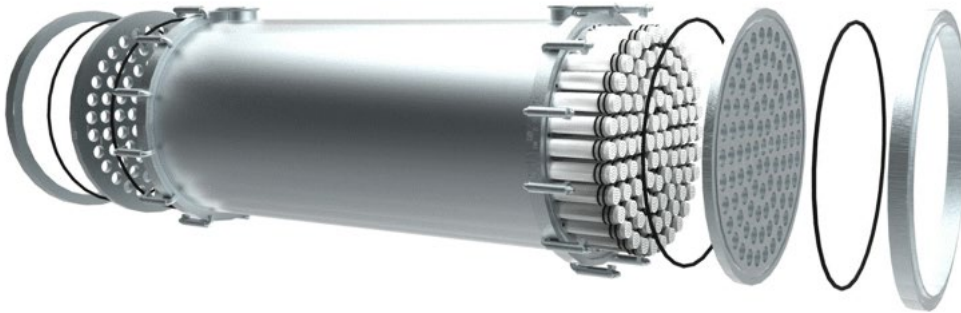
- The imported ceramic membrane has a low breakage rate and remains intact for a long time, reducing the combination of viruses and bacteria.
- long lasting
- Low energy consumption and low cost
- Robustness against water fluctuations
- Low CIP frequency
- High recovery rate

Application industry

- Chemical industry: separation of catalysts, recovery of dyes and pigments, desalination of products, cleaning and recovery of organic solvents
- Metal Industry/Surface Engineering: Recycling and treatment of degreasing and rinsing baths, treatment of oil-water emulsions (e.g. coolants and cutting fluids), recovery of heavy metals, cleaning of wastewater from grinding processes, treatment of wastewater from glass and fiberglass production
- Wastewater treatment: COD/BOD reduction, oil/water separation, recovery of pharmaceuticals and pesticides, retention of heavy metals and radioactive materials
- Pharmaceutical industry: wastewater treatment, concentration and separation of pharmaceutical molecules.
- Food industry: separation and separation of milk and whey components, whey desalination, product dehydration, purification of drinking water.

- Desalination: Desalination
- Fermentation industry: concentration and separation of small molecular weight proteins and sugars

5. Imported ceramic membrane shell



Description

The imported ceramic membranes provided by SHUOBODA are imported from France and Germany. In different fields, such as oil water separation, biological material separation, and pharmaceutical separation, we will provide cost-effective and high-quality imported ceramic membranes according to the user's usage environment. At the same time, we provide ceramic membrane sealing technology, transformation technology and overall equipment supply. We are currently one of the ceramic membrane suppliers that can provide a full range of products and a wide range of pore sizes.

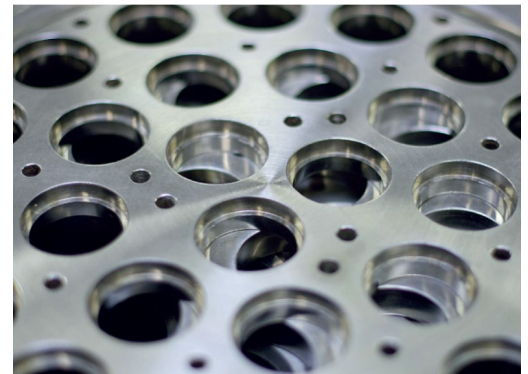
SHUOBODA's imported ceramic membrane shell adopts unique sealing technology and is connected by professional arc welding. Manufactured using domestic first-tier brand valves and pipes. We provide customization of different specifications and sizes, and also provide production and manufacturing of ceramic membrane shells for major brands.

Basic Information

Material: AISI304, AISI 316L Operating temperature: < 250°C

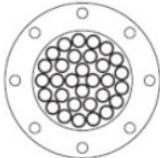
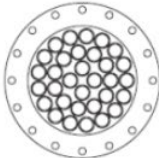
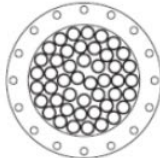
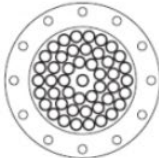
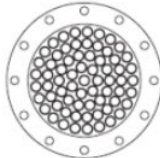
Chemical stability: acid and alkali resistance, organic solvent resistance, etc.

Imported ceramic membrane length: 100mm~1300mm can be customized



Membrane diameter	Membrane design	Membrane length (mm)	M1	M2	M3	M5	M7	
filter surface in m ² per module								
25.4 mm	7/6	1000	NW 25	0.13	NW 25	0.26	NW 50	0.92
		1200		0.16		0.32		1.11
	19/3.3	1000		0.20		0.40		1.40
		1200		0.24		0.48		1.68
	37/2	1000		0.23		0.46		1.62
		1200		0.28		0.56		1.95
41 mm	19/6	1200	NW 32	0.43	NW 125	1.29	NW 150	3.01
		1500		0.54		1.62		3.76
	37/3.8	1200		0.53		1.59		3.71
		1500		0.67		2.01		4.69
	61/2.5	1200		0.58		1.74		4.06
		1500		0.72		2.16		5.04
52 mm	19/8	1200	NW 40	0.57	NW 125	1.71	NW 150	-
		1500		0.72		2.15		-
	85/3.3	1200		1.06		3.18		-
		1500		1.32		3.97		-
	211/2	1200		1.59		4.77		-
		1500		1.99		5.97		-

M8	M10	M12	M14	M19	M27	M30	
filter surface in m ² per module							
-	NW 125	1.32	NW 150	1.85	NW 150	-	
-		1.58		2.22		-	
-		2.00		2.80		3.80	-
-		2.40		3.36		4.56	-
-		2.32		3.25		4.41	-
-		2.78		3.90		5.29	-
-	NW 200	5.16	NW 250	8.17	NW 300	-	
-		6.45		10.21		11.61	-
-		6.36		10.07		14.31	-
-		8.04		12.73		18.09	-
-		6.96		11.02		15.66	-
-		8.64		13.68		19.44	-
NW 200	NW 250	6.84	NW 300	10.83	NW 400	17.10	
		8.70		13.68		21.60	
		12.72		20.14		31.80	
		15.86		25.08		39.60	
		19.08		30.21		47.70	
		23.88		37.81		59.70	

Membrane diameter	Membrane design	Membrane length (mm)	M31	M32	M46	M47	M68							
														
filter surface in m ² per module														
25.4 mm	7/6	1000	NW 200	4.09	-	-	NW 250	6.20	NW 300	8.98				
		1200		4.91				-		-	7.44	10.77		
	19/3.3	1000		6.20				-		-	9.40	13.60		
		1200		7.44				-		-	11.28	16.32		
	37/2	1000		7.19				-		-	10.90	15.78		
		1200		8.63				-		-	13.08	18.93		
	41 mm	19/6		1200				NW 350		-	NW 400	19.78	-	-
				1500						-		13.76		-
37/3.8		1200	-	16.96	-	-								
		1500	-	21.44	-	-								
61/2.5		1200	-	18.56	-	-								
		1500	-	23.04	-	-								
52 mm	19/8	1200	-	-	-	-	-							
		1500	-	-	-	-	-							
	85/3.3	1200	-	-	-	-	-							
		1500	-	-	-	-	-							
	211/2	1200	-	-	-	-	-							
		1500	-	-	-	-	-							



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