ADCERAX
ADVANCED CERAMICS

Silicon Carbide Membrane Tube

— Industrial Filtration & Separation Solutions

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About ADCERAX

Powered by **HUNAN ATCERA CO.,LTD** – A Trusted Innovator in Advanced Ceramics Since 2010 ,**HUNAN ATCERA CO. Ltd** has been deeply engaged in the field of advanced ceramics for 20 years, and has production experience of more than 2000 precision ceramic products. We focus on the material of alumina ceramics, zirconia ceramics, silicon carbide ceramics, silicon nitride ceramics, aluminum nitride ceramics and quartz, etc., and aim to provide you with advanced ceramics one-stop service.

Adcerax delivering bespoke advanced ceramic solutions for industries where precision and durability matter.And has become a leading global China supplier of silicon carbide membrane tube, with products exported to the United States, Germany, Japan, South Korea, and many other countries.

Our Expertise

- **Engineering Support:** Professional product engineers providing timely technical assistance from design to production.
- **Customization Capability:** Accepting small-batch custom orders based on customer drawings or samples.
- Rapid Delivery: Quick shipping for custom orders and 24-hour dispatch for in-stock standard products.
- Supply Chain Integration: One-stop customization and procurement services leveraging China's supply chain advantages.

ADCERAX Promise

Your ROI Starts from Day One

- ↑ 37% Lifespan: Industry Standards Verified by SGS Third-Party Testing in Extreme Thermal Shock Environments
- ↓ 22% Downtime: Reduce unplanned downtime with ceramic component life enhancement
- ⚡15 days fast response: From drawing confirmation to functional prototype delivery
- 🛡️12 months warranty: Unconditional return of quality problems to factory for remanufacturing + process optimization report

Our Certifications

CNAS ISO 水圆认证 CQM CERTIFICATION RoHS COMPLIANT

What is Silicon Carbide Membrane Tube?

A silicon carbide membrane tube is a tubular ceramic filtration element made from porous SiC material. It is used to separate suspended solids, colloids, fine particles, oil droplets, and macromolecules from liquid or gas streams.

Typical applications

- Industrial Wastewater Treatment
- Chemical Liquid Filtration
- Brine Purification
- Food & Fermentation Filtration

Silicon Carbide Membrane Tube Process

Raw Material Preparation

Alumina powder is selected and mixed with binders and plasticizers to form a uniform slurry or paste.

Forming

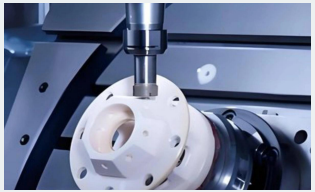
Extrusion: Alumina slurry is extruded through a die into continuous tubular shapes.
Isostatic Pressing: Powder is molded under high pressure to form high-density, uniform tubes.
Slip Casting: Liquid slurry is cast into a mold and solidified.

Drying

The formed tubes are dried slowly to remove moisture and prevent cracking or deformation.

Sintering

The dried tubes are fired in a high-temperature kiln (typically 1600–1700°C) to achieve full densification and develop the final ceramic properties.



Machining

After sintering, the tubes may be ground or machined to achieve precise dimensions, surface finish, or special features such as chamfered ends or holes.

WHY CHOOSE OUR SIC MEMBRANE?

Focus on stable filtration, high permeability, easier cleaning, and long-term fouling control.

3000 LMH

High pure-water flux capability for fast wetting and stable permeability.

pH 1–13

Supports aggressive cleaning chemistry across demanding water-treatment duty.

0.3°

Intrinsic hydrophilicity helps reduce fouling and eases start-up wetting.

>95%

Flux recovery after CIP helps restore productivity after heavy fouling loads.

40–45%

Open porosity supports uniform flow and lower pressure growth.

Lower maintenance cost

SiC membrane helps reduce fouling, improve cleaning recovery, and extend service intervals in continuous filtration systems.

Silicon Carbide Membrane Tube

Porous SiC Membrane Tube for Industrial Filtration

SPECIFICATIONS

Material	**Recrystallized Silicon Carbide, SiC ≥98.5%**
Pore Size	**0.1–20 μm options for different filtration needs**
Max Pressure	**Up to 16 MPa hydraulic load**
Max Temperature	**Up to 900°C continuous service**
Customization	**Multi-channel, open-end, closed-end, and flanged types available**

APPLICATIONS

Industrial Wastewater · Chemical Filtration · Brine Purification · Food & Beverage Clarification · Fermentation Broth · Hot Gas / Liquid Filtration

KEY FEATURES

1. Provides stable filtration for suspended solids, colloids, and fine particles in demanding liquid streams.
2. Resists strong acids, alkalis, oxidants, and repeated chemical cleaning.
3. High permeability and open porous structure support stable flux and lower pressure rise.
4. Helps reduce fouling, improve cleaning recovery, and extend membrane service intervals.

Silicon Carbide Membrane Tube Properties

Item	Unit
Material	Recrystallized SiC (SiC ≥ 98.5%)
Open Porosity	35–45% interconnected microstructure
Pore Size Rating	0.1–0.5 μm membrane layer
Density	1.4–2.55 g/cm³ bulk range
Flexural Strength	10–18 MPa
Compressive Strength	25–45 MPa
Maximum Operating Pressure	Up to 16 MPa
Maximum Operating Temperature	Up to 900 ° C
Thermal Shock Resistance	ΔT > 500 ° C tolerance
Chemical Resistance Range	pH 0–14, including strong acids/alkalis
Oxidation Resistance	Stable under NaClO / H_2O_2 exposure
Permeability Recovery After Cleaning	≥ 95%
Microstructure Type	Recrystallized, self-bonded SiC grains
Filtration Efficiency	≥ 95% clarification efficiency

Silicon Carbide Membrane Tube size:

Type 1-Silicon Carbide Tubular Filtration Tube with Multiple Bore

Item	External Diameter (mm)	Numbers of channels (pcs)	Channel's Diameter (mm)	Membrane Areas(M2)	Filteration Accuracy(μm)	Toal Length (mm)	Picture
AT-THG-MG001	30	7	6	0.13	40/100/500/1000	100-1200	
AT-THG-MG002	30	19	4	0.24	40/100/500/1000	100-1200	
AT-THG-MG003	40	19	6	0.43	40/100/500/1000	100-1200	
AT-THG-MG004	40	37	4	0.56	40/100/500/1000	100-1200	
AT-THG-MG005	46	61	4	0.92	40/100/500/1000	1230	
AT-THG-MG006	46	81	/	1.27	40/100/500/1000	1230	
AT-THG-MG007	46	127	2.7	32.00	40/100/500/1000	1230	
AT-THG-MG008	146	524	4.3	7.8	40/100/500/1000	1100	

Silicon Carbide Membrane Tube size:

Type 2-Porous Silicon Carbide Membrane Tube with Both Ends Open

Item	External Diameter (mm)	Inner Diameter (mm)	Length (mm)	Filteration Accuracy (μm)
AT-THG-MG001	30	7	6	0.13
AT-THG-MG002	30	19	4	0.24
AT-THG-MG003	40	19	6	0.43
AT-THG-MG004	40	37	4	0.56
AT-THG-MG005	46	61	4	0.92
AT-THG-MG006	46	81	/	1.27
AT-THG-MG007	46	127	2.7	32.00
AT-THG-MG008	146	524	4.3	7.8

🎯 Silicon Carbide Membrane Tube size:

Type 3-Silicon Carbide Membrane Tube Porous One End Closed

Item	External Diameter (mm)	Inner Diameter (mm)	Length (mm)	Filteration Accuracy (μm)
AT-THG-MG022	60	40	200	0.1-20
AT-THG-MG023	60	40	1500	0.1-20

Silicon Carbide Membrane Tube size:

Type 4-Porous Silicon Carbide Membrane Tube One End Closed Flanged

Item	External Diameter(mm)	Inner Diameter (mm)	Length(mm)	Diameter of Flange (mm)	Filteration Accuracy (μm)
AT-THG-MG024	60	40	1000	75	0.1-20
AT-THG-MG025	60	40	1500	75	0.1-20
AT-THG-MG026	70	44	1000	84	0.1-20

Customization for SiC Membrane Tube

Every filtration system is different. Your SiC membrane tube can be customized for pore size, flow rate, channel design, and installation structure.

Customizable Parameters

Filtration Accuracy & Pore Design

- Pore size can be selected for suspended solids, colloids, oil droplets, or fine particles.
- Hollow or Solid Form — Selected based on weight-to-strength objectives and thermal balance
- End-Connection Style — Configured for stable seating and support post interface during firing cycles

Interface & Assembly Compatibility

- Support-Seat Design — Shaped for accurate beam placement and consistent contact under thermal load
- Mounting Interaction — Refined for reliable mechanical engagement and stress-free thermal expansion
- System Coordination — Adapted for use with posts and plates to maintain uniform load distribution

Structural & Thermal Adaptation

- Span Configuration — Sized to load path and chamber width for controlled deflection
- Cross-Section Dimensions — Matched to load-bearing requirements across kiln car systems
- Surface & Tolerance Zones — Finished to assembly requirements for precise fit within firing structures

Customization Process

1. **Inquiry & Design** — Submit your **detailed** requirements
2. **Mold & Samples** — Proceed with mold/sample creation
3. **Confirmation** — Confirm specifications and contract
4. **Delivery** — Safe and efficient shipping

Fast Response Commitment

From drawing confirmation to functional prototype delivery

15 Days

Silicon Carbide Membrane Tube Applications

Industrial wastewater treatment

Challenge

Industrial wastewater often contains suspended solids, colloids, oil droplets, pigments, and abrasive particles that can quickly foul or damage conventional membranes.

Why SiC works

SiC membrane tubes provide strong corrosion resistance, high mechanical strength, and stable pore structure for harsh wastewater filtration and repeated chemical cleaning.

Observed result

More stable flux, easier cleaning recovery, and longer operating cycles in demanding wastewater treatment systems.

Chemical process filtration

Challenge

Chemical liquids may contain acids, alkalis, oxidants, salts, and fine particles that can degrade polymer membranes or reduce filtration stability.

Why SiC works

Silicon carbide resists aggressive chemicals and maintains structural stability under pressure, temperature change, and continuous filtration conditions.

Observed result

Improved process reliability, reduced membrane replacement risk, and more consistent separation performance.

Food and beverage processing

Challenge

Food liquids and fermentation broth often contain organic matter, proteins, microorganisms, and fine suspended solids that cause membrane fouling.

Why SiC works

The ceramic membrane tube supports fine clarification, repeated cleaning, and stable filtration performance for organic-rich liquid streams.

Observed result

Cleaner filtrate, better process continuity, and easier regeneration after cleaning cycles.

Silicon Carbide Membrane Tube Usage Guide

Installation Requirements for System Integration

- Screen feed to remove oversized particles before filtration.
- Support the tube evenly to avoid bending stress or vibration damage.
- Match sealing parts with process media and avoid over-tightening.

Operating Conditions for Stable Clarification

- Increase pressure gradually to maintain stable flux.
- Keep temperature changes within safe operating limits.
- Confirm acid, alkali, and oxidant compatibility before operation.

Cleaning and Regeneration Protocols

- Use regular backwashing to remove deposits from membrane channels.
- Select cleaning agents based on organic, inorganic, or biological fouling.
- Introduce high-temperature cleaning gradually to protect membrane structure.

Storage, Handling, and Transportation Care

- Store membrane tubes in clean and dry conditions.
- Handle with two-point support and avoid impact or rolling.
- Use reinforced packing to reduce vibration and transport damage.

Technical Support

Technical Inquiry: info@adcerax.com

Service Hotline: +86-0731-84428843

Whatsapp: +86-19311583352

Silicon Carbide Membrane Tube FAQ

- **Q: Can SiC membrane tubes handle brine or aggressive chemicals?**
  A: Yes. SiC resists acids, alkalis, oxidants, and high-salinity liquids, helping maintain stable flux in harsh filtration systems.
- **Q: Can SiC membrane tubes withstand high pressure?**
  A: Yes. The rigid SiC structure supports stable operation under pressure and reduces deformation during continuous filtration.
- **Q: Why does SiC resist fouling better than polymer membranes?**
  A: Its hydrophilic surface helps reduce organic adhesion, while backwashing and chemical cleaning can restore permeability.
- **Q: Can SiC membrane tubes tolerate temperature changes?**
  A: Yes. SiC provides good thermal-shock resistance and keeps pore structure stable during heating, cooling, or steam cleaning.
- **Q: What filtration results can SiC membrane tubes achieve?**
  A: They help remove suspended solids, colloids, pigments, and fine particles for stable clarification and cleaner filtrate.

Service Support

ADCERAX is committed to providing comprehensive service support to customers, from product selection to after-sales maintenance.

Pre-Sales Support

- Expert technical team provides custom design advice
- Sample testing and performance verification
- Technical parameter consultation

Sales Support

- Order tracking and production progress updates
- Professional packaging and logistics solutions

After-Sales Service

- Product quality assurance and problem resolution
- Technical consultation and application support
- 24-hour response commitment

Quality Assurance

- Strict quality control system
- Product performance testing and verification

Contact Our Specialist Team

Customer Service: info@adcerax.com

Service Hotline: +86-0731-84428843

Online Support: adcerax.com

Contact Us

ADCERAX looks forward to cooperating with you and providing silicon carbide membrane tube solutions. Our team is dedicated to serving you with any questions or needs you may have.

Contact Information

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Inquiry Process

1. **Submit Inquiry**
   Submit your requirements via email, phone, or website form.
2. **Technical Evaluation**
   Our expert team evaluates your needs and provides solutions.
3. **Quotation Confirmation**
   Provide detailed quotation and delivery time based on your requirements.
4. **Order Confirmation**
   Confirm order and arrange production and delivery.

Get a Quote Now

We promise to respond to your inquiry within 24 hours.

Ready to enhance your product performance with our high-quality silicon carbide membrane tube? Contact our team for personalized consultation, technical support, and competitive quotations.

Get A Quote