

YOUR COMPETENCE IN

Fiber Bed Mist Elimination

Custom-Engineered Solutions for Chemical & Industrial Processes

>99.9%

Mist Removal Efficiency

0.1–3 μm

Droplet Size Capture

-20–260°C

Operating Temperature

2,000+

Sets Annual Production

Filtearth specializes in the design and manufacture of fiber bed mist eliminators for the most demanding corrosive industrial processes. Our proprietary fiber bed technology achieves over 99.9% mist removal efficiency — outperforming established international brands. Every unit is custom-engineered to your exact process parameters and backed by full material certification before delivery.



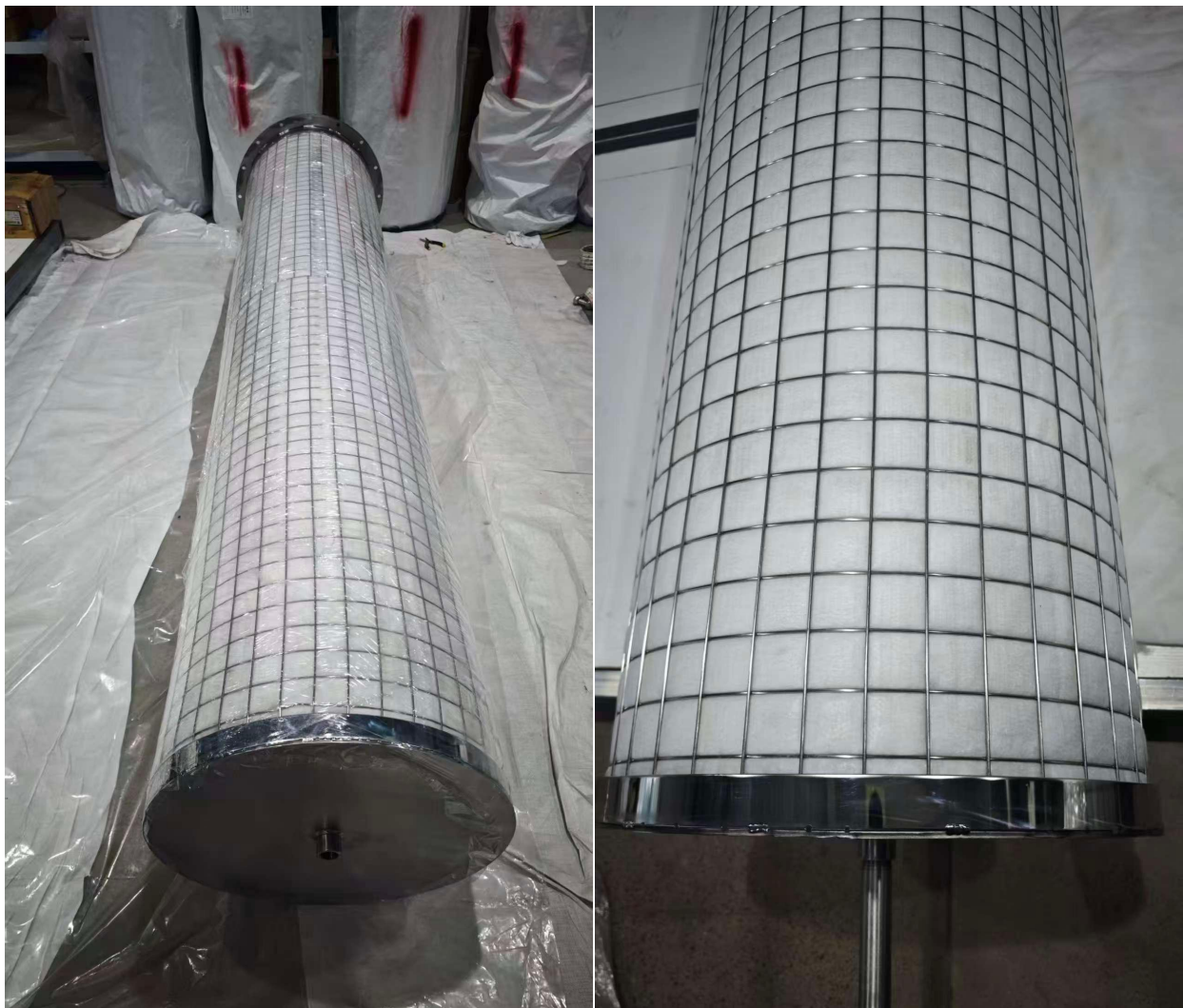
About Filtearth

Filtearth is a specialized manufacturer of fiber bed mist eliminators for corrosive and critical industrial processes. Founded on deep expertise in industrial gas-liquid separation, we combine advanced fiber winding technology with rigorous engineering to deliver mist elimination systems that outperform established international standards.

Our annual production capacity exceeds 2,000 sets of fiber bed elements and complete mist elimination systems, each backed by full material certification, dimensional inspection, and performance verification before delivery. We serve sulfuric acid, chlor-alkali, phosphoric acid, polysilicon, semiconductor, and petrochemical industries globally.

Core Technology — How It Works

Filtearth fiber bed mist eliminators operate on the principle of inertial impaction, diffusion, and direct interception of liquid aerosol droplets. Gas streams carrying submicron mist ($0.1\text{--}3\text{ }\mu\text{m}$) pass through a precisely wound fiber bed where droplets coalesce and drain by gravity. The result is outlet gas with mist concentrations well below regulatory emission limits.



Industry Solutions

Sulfuric Acid Plant

H₂SO₄ Mist Elimination

Our sulfuric acid fiber bed mist eliminator removes corrosive H₂SO₄ mist from drying towers, absorption towers, and tail gas scrubbing systems. Critical for emission compliance and acid recovery, our PTFE/glass fiber construction provides exceptional resistance to highly concentrated acid environments while maintaining continuous operation under demanding conditions.

- ▶ Highly corrosive — PTFE / glass fiber construction
 - ▶ Captures H₂SO₄ acid mist particles 3 μm
 - ▶ High gas velocity tolerance up to 0.35 m/s
 - ▶ Outlet concentration 5 mg/Nm³
- ▶ Suitable for drying towers absorption towers

TECHNICAL SPECIFICATIONS

Fiber Material	PTFE / E-glass
Shell Material	PP / FRP / SS316L
Temperature	-20°C to 200°C
Efficiency	99.9%
Pressure Drop	50 – 500 Pa
Bed Thickness	25 – 150 mm
Connection Std.	ANSI / DIN / JIS

Chlor-Alkali Plant

Cl₂ / NaOH Mist Elimination

Our chlor-alkali fiber demister removes caustic mist and chlorine-laden droplets from electrolysis off-gas, evaporators, and drying systems. Engineered for dual chemical environments — both Cl₂ and NaOH — the system protects downstream equipment from corrosion and salt deposition, ensuring uninterrupted operation of chlor-alkali production lines.

- ▶ Cl₂ NaOH dual-environment chemical resistance
 - ▶ Handles electrolytic cell off-gas streams
- ▶ Designed for continuous, uninterrupted operation
- ▶ Prevents NaCl salt deposition on downstream equipment
 - ▶ Low maintenance — extended service life design

TECHNICAL SPECIFICATIONS

Fiber Material	PTFE / Polypropylene
Shell Material	PP / FRP / Titanium
Temperature	Up to 120°C
Efficiency	99.9%
Pressure Drop	100 – 600 Pa
Inlet Concentration	≤ 5 g/Nm ³
Connection Std.	ANSI / DIN

Industry Solutions (continued)

Phosphoric Acid / Fertilizer Plant

H₃PO₄ + HF Mist Elimination

Our phosphoric acid fiber bed mist eliminator handles H₃PO₄ mist and fluoride-laden gas from reactors, concentrators, and evaporators. The system prevents product loss and ensures environmental compliance — a critical requirement for modern fertilizer manufacturing operations exporting to global markets with strict emission standards.

- ▶ H₃PO₄ + HF combined chemical attack resistance
 - ▶ Handles high solids content in gas streams
- ▶ Meets international environmental emission standards
- ▶ Suitable for wet process electric arc furnace off-gas
 - ▶ Custom engineering for existing vessel retrofit

TECHNICAL SPECIFICATIONS	
Fiber Material	PTFE / PP
Shell Material	PP / FRP
Temperature	Up to 150°C
Efficiency	99.5%
Pressure Drop	80 – 500 Pa
Fluoride Resistance	Full PTFE fiber
Certifications	ISO 9001 / SGS

Metallurgy Smelting

Acid Mist Fume Elimination

Our metallurgical mist elimination solutions handle aggressive acid mist and metallic fumes generated in smelting, refining, and electrolytic processes. Applications include copper smelting off-gas treatment, zinc electrolysis mist capture, and non-ferrous metal refinery fume control — engineered for high-temperature and high-concentration corrosive environments.

- ▶ Handles mixed acid mist: H₂SO₄, HCl, HNO₃
- ▶ High-temperature resistant construction up to 260°C
 - ▶ Suitable for copper, zinc, lead, nickel smelting
 - ▶ Integration with existing wet scrubber systems
- ▶ API ASME pressure vessel standards compliance

TECHNICAL SPECIFICATIONS	
Fiber Material	PTFE / E-glass / Metal
Shell Material	SS316L / Titanium / FRP
Temperature	Up to 260°C
Efficiency	99.9%
Pressure Drop	100 – 1000 Pa
Inlet Velocity	0.05 – 0.35 m/s
Standards	API / ASME / ISO

Industry Solutions (continued)

Polysilicon Plant

CVD / Siemens Process Mist Elimination

Our polysilicon mist eliminator captures SiCl_4 and HCl mist from CVD reduction furnace exhaust and tail gas recovery systems — essential for high-purity polysilicon production via the Siemens process. Engineered for ultra-high purity requirements with mixed silicon chloride compound handling capability.

- ▶ Ultra-high purity requirements — no contamination
- ▶ Handles mixed silicon chloride compounds (SiCl_4 , HCl)
 - ▶ High temperature gas stream capability
 - ▶ Tail gas recovery system integration
- ▶ CVD reduction furnace exhaust treatment

TECHNICAL SPECIFICATIONS

Fiber Material	PTFE / Quartz Glass
Shell Material	SS316L / Hastelloy
Temperature	Up to 200°C
Efficiency	99.95%
Pressure Drop	50 – 400 Pa
Purity Level	Ultra-High Grade
Certifications	ISO 9001 / SGS

Semiconductor Fab

Wet Etch Cleanroom Exhaust Mist Elimination

Our semiconductor mist eliminator delivers sub-micron mist elimination from wet etch exhaust, acid vapor scrubbers, and cleanroom exhaust systems — built for zero-contamination fab environments. Handles mixed acid vapors including HF, HCl, and H_2SO_4 with cleanroom-compatible materials and construction.

- ▶ Sub-0.3 μm ultra-fine particle capture capability
 - ▶ HF, HCl, H_2SO_4 mixed acid vapor handling
- ▶ Cleanroom-compatible materials throughout
- ▶ Wet etch exhaust acid scrubber integration
 - ▶ Zero contamination design philosophy

TECHNICAL SPECIFICATIONS

Fiber Material	PTFE / PFA
Shell Material	PP / PVDF / SS316L
Temperature	Up to 80°C
Efficiency	99.99%
Pressure Drop	50 – 300 Pa
Particle Size	0.3 μm capture
Standards	ISO / SEMI

Customizable Parameters Engineering Process

No two chemical processes are identical. Our engineering team works from your gas composition, flow rate, temperature, and space constraints to design a fiber bed mist eliminator that fits precisely — not approximately. We support full OEM manufacturing for system integrators and EPC contractors.

Fiber Material	E-Glass / PTFE / PP / Metal Fiber	Selected by chemical compatibility
Fiber Diameter	3 μm — 25 μm	Fine for submicron; coarse for droplets
Bed Thickness	25 mm — 200 mm	Matched to required efficiency level
Packing Density	3% — 15% solidity	Optimized for pressure drop efficiency
Element Diameter	100 mm — 1,000 mm	Designed to fit existing vessel ID
Shell Material	PP / FRP / SS316L / Titanium	Based on chemical corrosivity requirements
Connection Standard	ANSI / DIN / JIS / Custom Flange	To match existing piping system
Operating Temp.	-20°C to 260°C	Material selection dependent
Efficiency	99.5% — 99.99%	0.1–3 μm droplet size range
Certifications	ISO 9001 / SGS / Material Certs	Full documentation provided on delivery

Our 4-Step Engineering Process



Why Choose Filtearth

Purpose-Built Technology

Over 10 years focused exclusively on fiber bed mist elimination — not a product line among many, but our singular expertise.

Full Custom Engineering

Every unit engineered to your exact process data. No catalogue selection. No approximations. Designed for your conditions.

Complete Documentation

Material certs, dimensional inspection, pressure test reports and performance verification — standard on every single order.

Global Project Experience

Delivered systems to sulfuric acid, chlor-alkali, phosphoric acid and smelting plants across Middle East, Southeast Asia and China.

⚡ Fast Lead Times

Efficient production workflow and stock fiber materials allow competitive lead times without compromising quality standards.

EPC OEM Partnership

Full OEM manufacturing support for system integrators and EPC contractors. Your brand, our engineering excellence.

After installing Filtearth's fiber bed unit, outlet acid mist concentration dropped significantly and has remained stable for over 18 months. The custom engineering support was thorough and responsive.

— Mohammed Al-Rashidi, Process Engineering Manager, Sulfuric Acid Plant, Saudi Arabia

Contact Us

Submit your process data sheet — gas composition, temperature, pressure, flow rate, and any space constraints — and our engineering team will respond with a technical proposal within 2 business days.

ISO 9001 CERTIFIED | SGS VERIFIED

Quality Management System — Full Documentation on Every Order

[LinkedIn](#) | [Facebook](#) | [Instagram](#)

Follow Filtearth for technical articles product updates