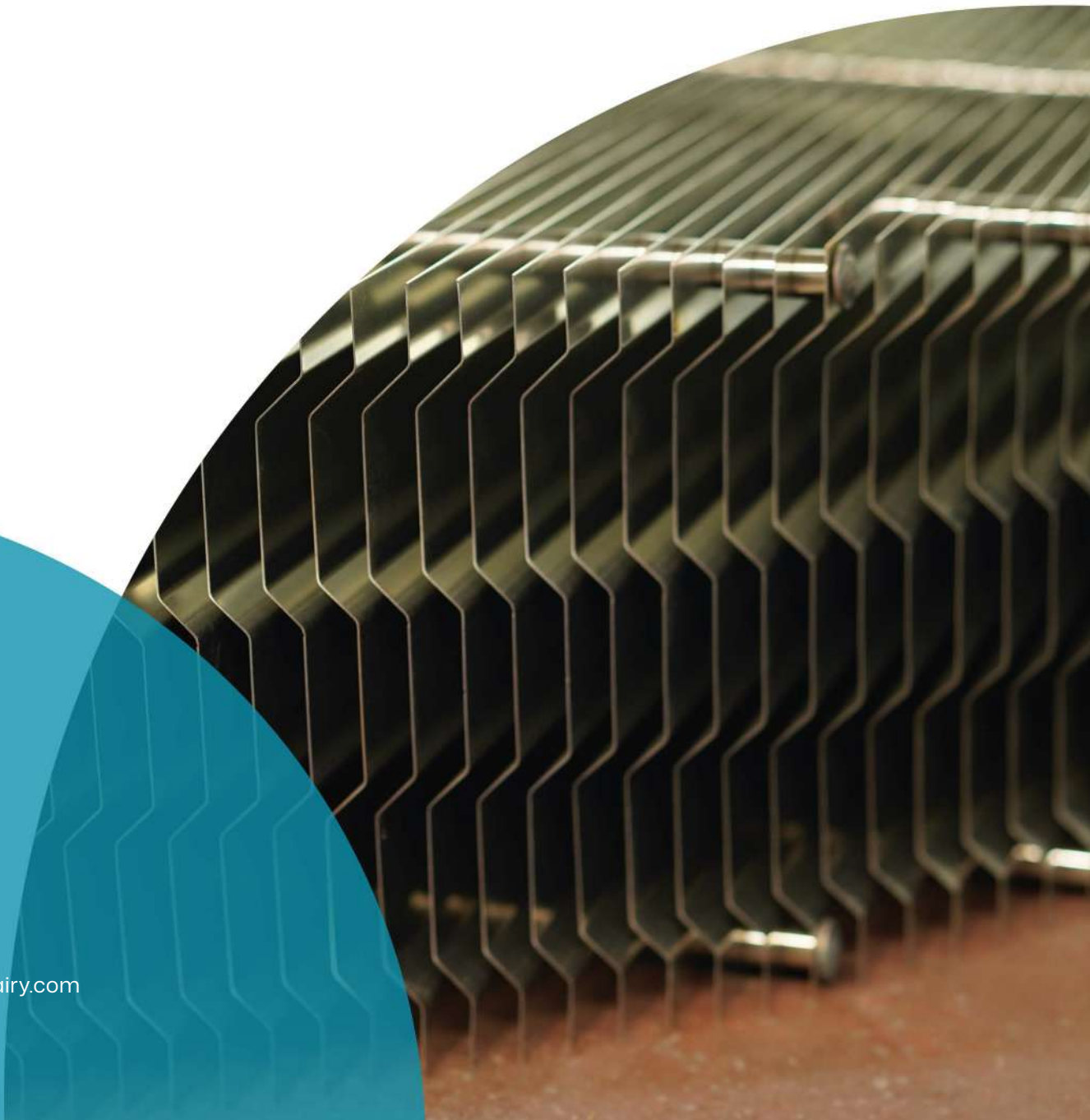
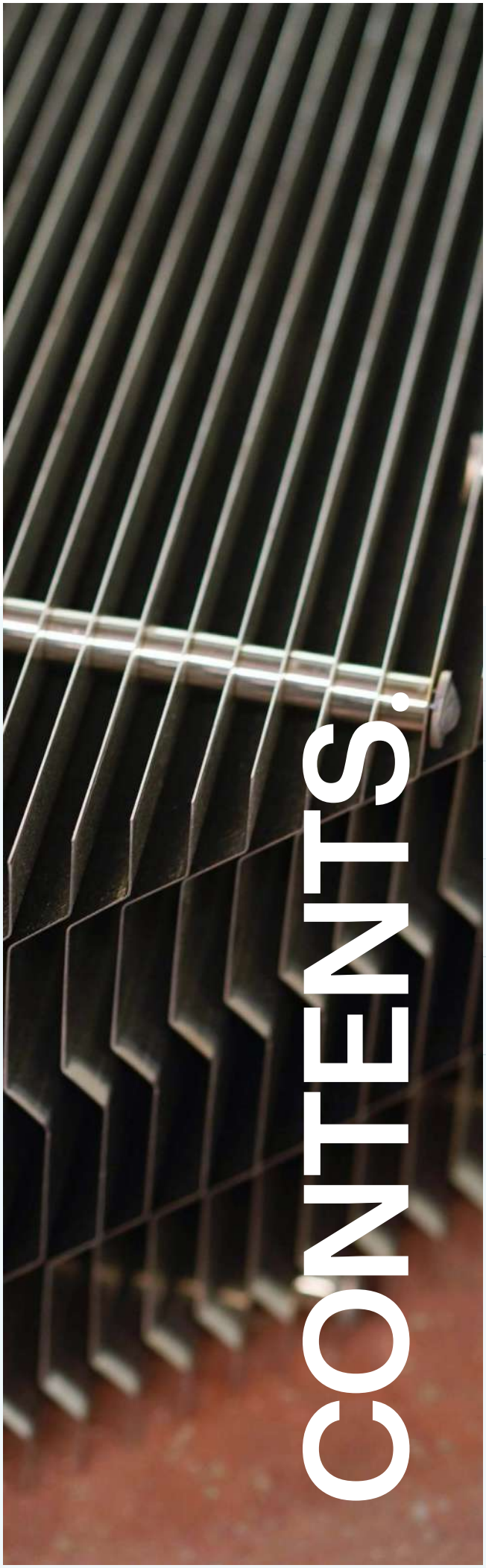
Cleairy

Mist Eliminators

High-Efficiency Gas-Liquid Separation Solutions



www.cleairy.com



CONTENTS.

Mist Eliminators 03

Vane Type Mist Eliminator 05

Wire Mesh Demister Pad 08

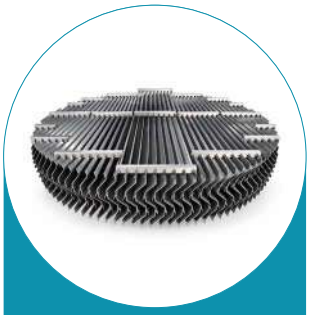
Selection Guide 10



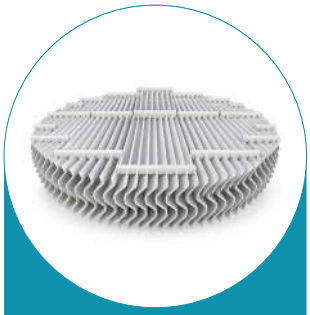
Mist Eliminators

Mist eliminators are key internals in gas–liquid separation equipment, primarily installed at the top of absorption towers, scrubbers, separators, and process towers to remove entrained droplets from gas streams, reduce liquid carryover, improve gas purity, and protect downstream equipment.

By changing the gas flow direction, reducing gas velocity, and using inertial impaction, coalescence, and gravity, mist eliminators effectively capture fine droplets in the gas, allowing the coalesced droplets to return to the tower or drain out of the system.



Metal Vane Type Mist Eliminator



Plastic Vane Type Mist Eliminator



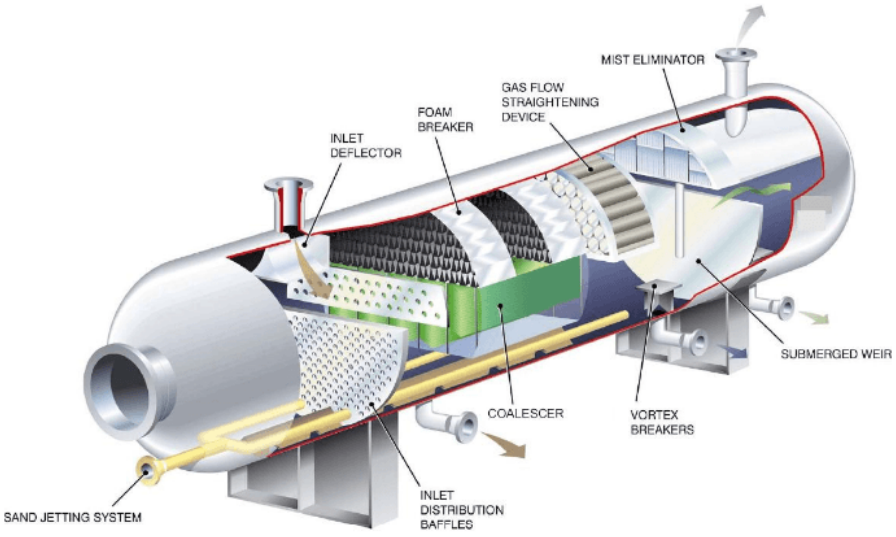
Metal Wire Mesh Demister Pad

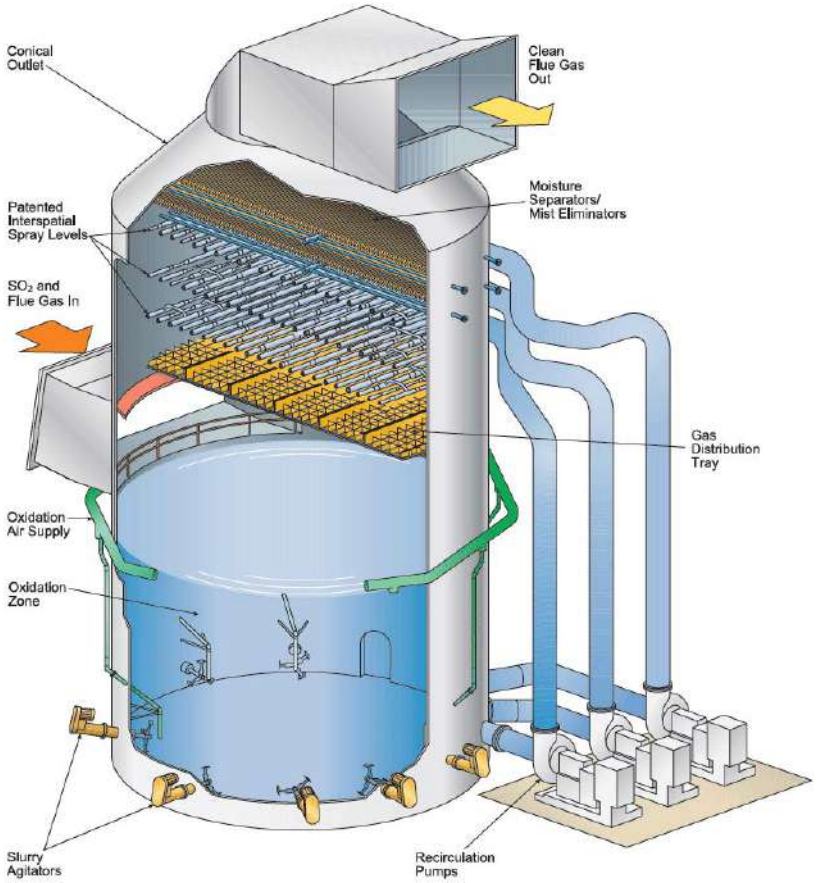


Plastic Wire Mesh Demister Pad

Application

01 **Three-Phase Separator**



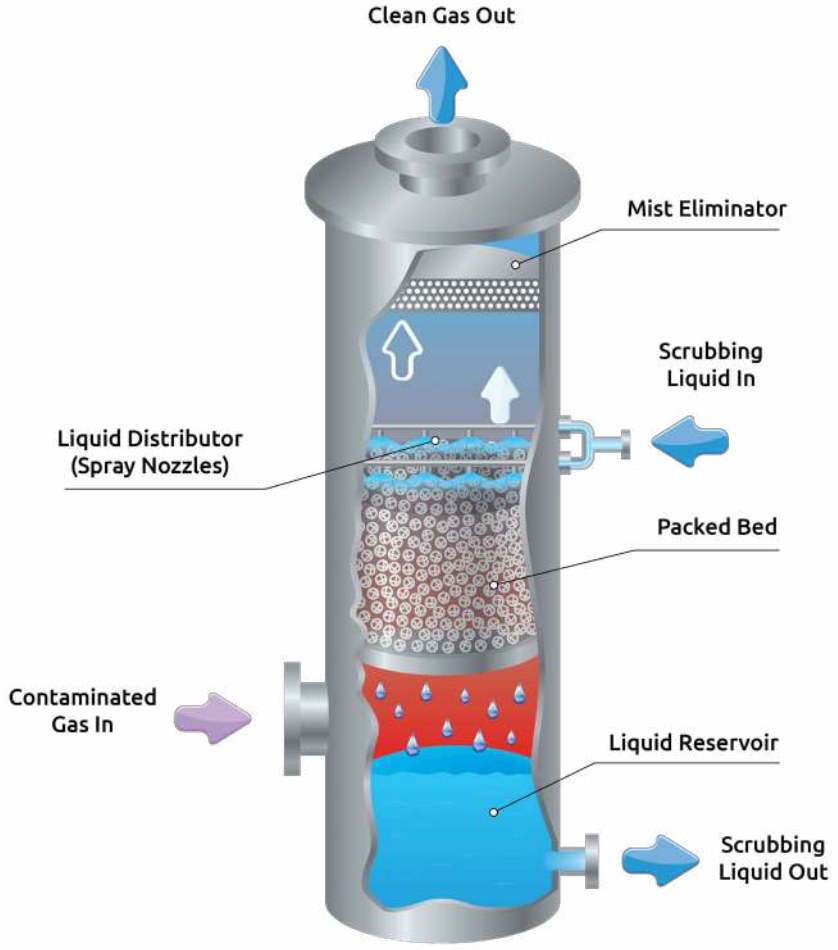


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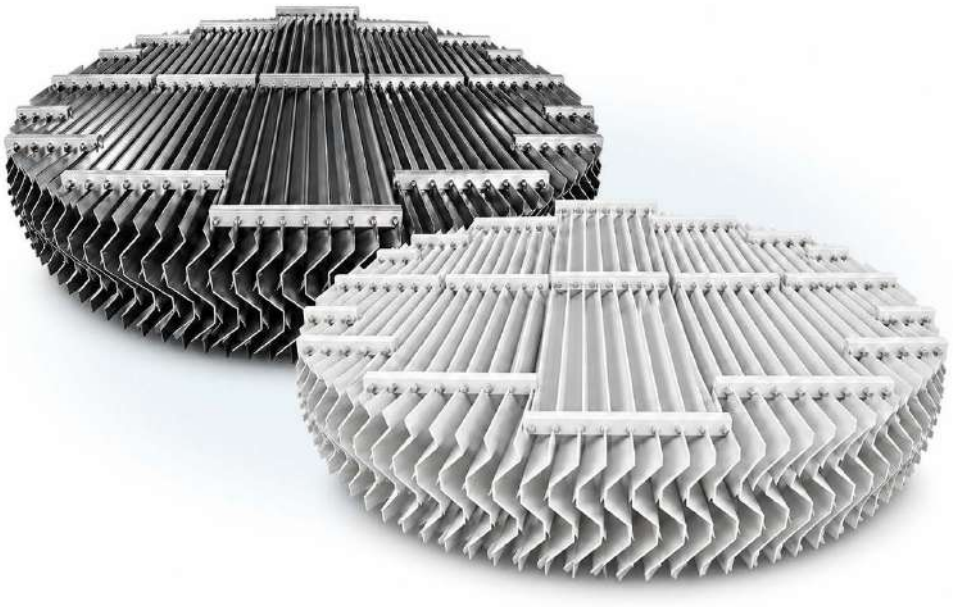
Wet Flue Gas Desulfurization (WFGD)

03

Gas Scrubber



Vane Type Mist Eliminator



A vane type mist eliminator is a mist removal device composed of multiple parallel plates with specific spacing and geometries. By changing the gas flow direction and reducing gas velocity, it separates entrained droplets from the gas after impaction and coalescence, preventing corrosion of downstream equipment, improving product purity, and reducing environmental pollution.

Vane type mist eliminators are widely used in wet scrubbers, absorption towers, desulfurization towers, gas–liquid separators, and industrial waste-gas treatment equipment, and are particularly suitable for operating conditions involving larger droplets, higher gas velocities, or higher gas–liquid loads.

Features

01 Suitable for capturing larger droplets.

Separation is achieved through droplet inertia, providing good removal efficiency for medium- and large-sized droplets.

02 Good drainage performance.

After droplets coalesce on the vane surfaces, they can be quickly discharged along the vanes and drainage channels.

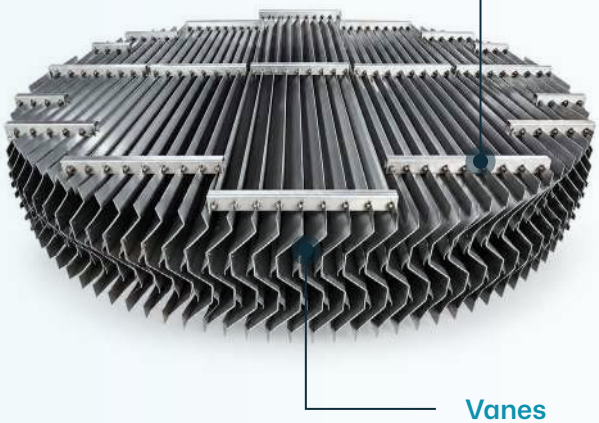
03 Relatively low pressure drop.

Proper vane spacing and flow-channel design help control system resistance while maintaining effective droplet separation.

04 Multiple material options.

Available materials include polypropylene (PP), fiberglass-reinforced plastic (FRP), polyvinylidene fluoride (PVDF), stainless steel, carbon steel, and others.

Structure



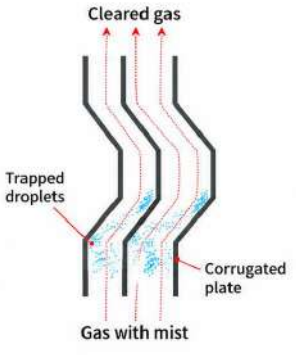
Support frame

Primarily includes the frame and support beams, used to separate and secure the vanes. It is typically constructed from metal or corrosion-resistant materials.

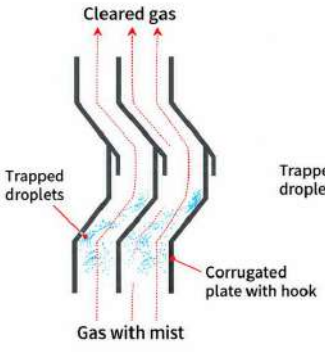
Vanes

The core collection unit, composed of multiple bent vanes. By altering the airflow direction, liquid droplets are captured on the blade surfaces through inertial impaction.

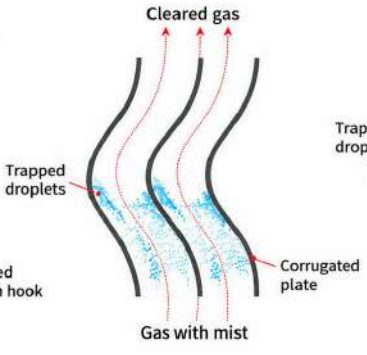
Vane Types



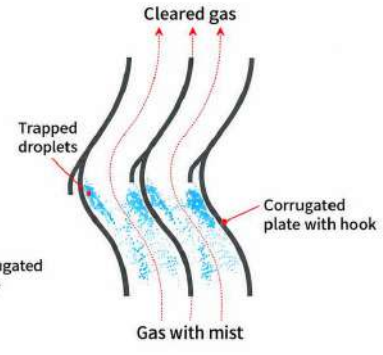
S-type Mist Eliminator



S-type Mist Eliminator (with Hook)



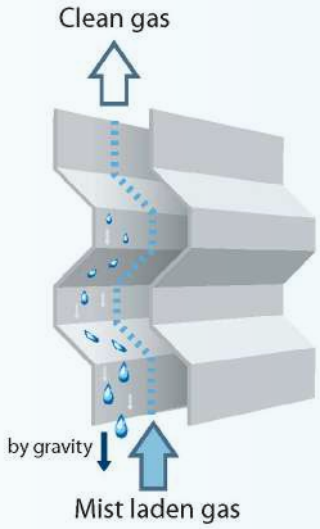
C-type Mist Eliminator



C-type Mist Eliminator (with Hook)

Principle

The gas-liquid mixture enters the mist eliminator, and the gas passes between the vanes. Entrained droplets impinge on the vane surfaces due to inertia and are captured. The droplets coalesce on the vanes into larger droplets and flow downward by gravity or washdown force. The purified gas continues flowing upward and is discharged.



Specifications

In addition to a wide range of designs, we also offer mist eliminators made from different materials, most commonly metals or plastics, including but not limited to:

- Polypropylene (PP)
- Fiberglass-reinforced plastic (FRP)
- Polyvinylidene fluoride (PVDF)
- Stainless steel
- Carbon steel

Metal Vane Type Mist Eliminator

High strength for high-temperature and high-load applications



Plastic Vane Type Mist Eliminator

Corrosion resistant for chemical and wet scrubbing applications



Wire Mesh Demister Pad



Wire mesh demister pad is a highly efficient demisting device for gas–liquid separation, typically consisting of multiple layers of woven metal wire mesh or plastic mesh compressed to a specified thickness and combined with support grids.

Wire mesh demister pad is widely used in absorption towers, scrubbers, distillation towers, evaporators, gas–liquid separators, and chemical process equipment and are particularly suitable for operating conditions with high requirements for the removal of fine droplets.

Features

01 Suitable for capturing fine droplets.

The fine wire mesh provides numerous points for droplet impaction and interception.

02 Large effective contact area.

Multiple layers of knitted wire mesh create a large surface area, promoting droplet attachment, coalescence, and drainage.

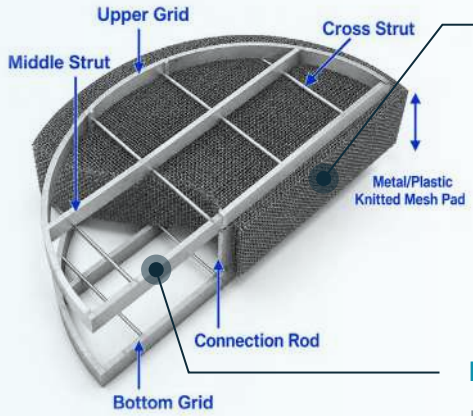
03 Low pressure drop.

The wire mesh structure controls operating resistance while maintaining demisting performance.

04 Suitable for relatively clean gas streams.

The wire mesh structure is finer; therefore, use with caution for gas streams containing large amounts of solid particles to reduce the risk of clogging.

Structure



Fasteners

Used to support and secure the metal / plastic knitted mesh pad, including the upper grid, cross strut, middle strut, connection rod bottom grid.

Metal / plastic knitted mesh pad.

Woven from metal wire or plastic filament, then compressed into a specified thickness.

Specifications

In addition to various designs, we also offer demister pad units made from different materials, most commonly metal or plastic, including but not limited to:

- Polypropylene (PP)
- Fiberglass-reinforced plastic (FRP)
- Polyvinylidene fluoride (PVDF)
- Stainless steel
- Carbon steel

Metal Wire Mesh Demister Pad

Suitable for high-temperature, high-strength, and fine gas–liquid separation applications



Plastic Wire Mesh Demister Pad

Suitable for medium- to low-temperature, highly corrosive, and wet scrubbing applications



Selection Guide

01

Vane Type Mist Eliminator

Effective Droplet Capture Size
> 20 μm

Pressure Drop
Lower

Clogging Resistance
Strong

Advantages

Strong resistance to dust and scaling, low susceptibility to clogging, simple construction, and easy periodic washing and maintenance.

Applications

Suitable for desulfurization towers, spray scrubbers, and other applications with high flue gas dust loads, large droplets, and harsh operating conditions.

02

Wire Mesh Demister Pad

Effective Droplet Capture Size
3–5 μm

Pressure Drop
Higher

Clogging Resistance
Weak

Advantages

High separation efficiency, compact construction, small footprint, and easy installation.

Applications

Suitable for applications with clean gas streams, few impurities, and high-precision mist elimination requirements, such as chemical distillation columns, pharmaceutical processes, and clean airflow.

• *For reference only*

Material Selection by Performance

Material	Corrosion Resistance	Temperature Resistance	Mechanical Strength	Cost	Recommended Applications
PP	★★★★	★★★	★★★	Low	Acid and alkali scrubbers, waste gas treatment
FRP	★★★★	★★★★	★★★★★	Medium	Large absorption towers, desulfurization system
PVDF	★★★★★	★★★★	★★★★	High	Strong acids, chlorine gas, chemical process exhaust gases
SS304	★★★	★★★★★	★★★★★	Medium	General industrial gases
SS316L	★★★★	★★★★★	★★★★★	High	Chemical processing, seawater, pharmaceuticals
Carbon Steel	★★	★★★★★	★★★★★	Low	Non-corrosive gases

• *For reference only*

Comprehensive Selection Table

Operating Conditions	Recommended Equipment	Reason
Clean gas, small droplets	Wire mesh demister pad	High efficiency
High-purity gas requirements	Wire mesh demister pad	High separation efficiency
Dust-laden gas	Vane type mist eliminator	Clogging resistance
Wet scrubber outlet	Vane type mist eliminator	High load
Desulfurization system	Vane type mist eliminator + wire mesh demister pad	Two–stage separation
Chemical absorption tower	Wire mesh demister pad / vane type mist eliminator	Based on droplet size
High salt mist	Vane type mist eliminator	Prevention of crystallization–induced blockage
High airflow systems	Vane type mist eliminator	Low pressure drop

• *For reference only*

Efficient Droplet Removal for Cleaner Gas and Better Process Performance

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