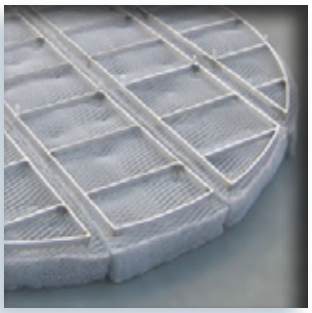
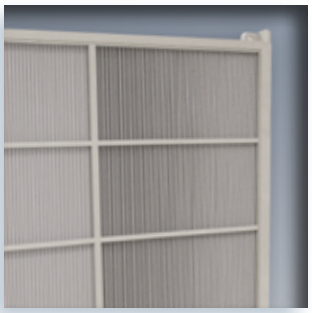




Mist eliminators
For minimizing entrainment

RVT Process Equipment
About us

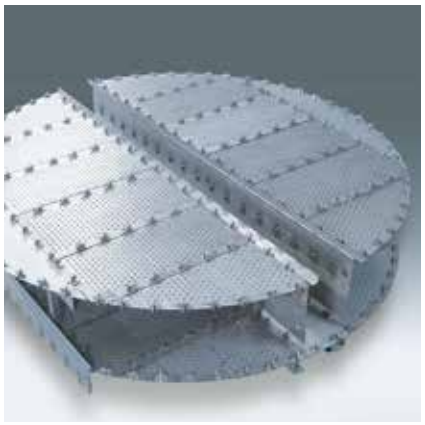
RVT Process Equipment has offered a full array of products and services to the Chemical and Oil & Gas Processing industries for more than 40 years.

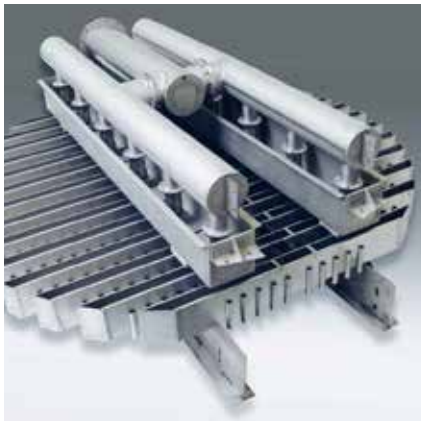
An expert in the field of mass transfer equipment

In addition to a complete line of mass transfer equipment consisting of random/structured packings, column internals and fractionation trays, RVT Process Equipment offers both wire mesh and vane type mist eliminators. We have a proven record of delivering quality products in an unrivaled variety of materials to well-known global companies. Our experienced engineers and internals specialists provide complete support for our customers.

Worldwide there for you

Our global headquarter is located in Germany with subsidiaries in the United States (RVT Process Equipment, Inc.) and China (Kunshan RVT Process Equipment Co, Ltd.). Furthermore, RVT Process Equipment works with 19 agents and distributors around the world.





Quality control from manufacturing to the customer

RVT Process Equipment is DIN ISO 9001 and 14001 certified. The qualification of our employees in the fabrication facility complies with strict workmanship and quality control standards, thus assuring high quality.

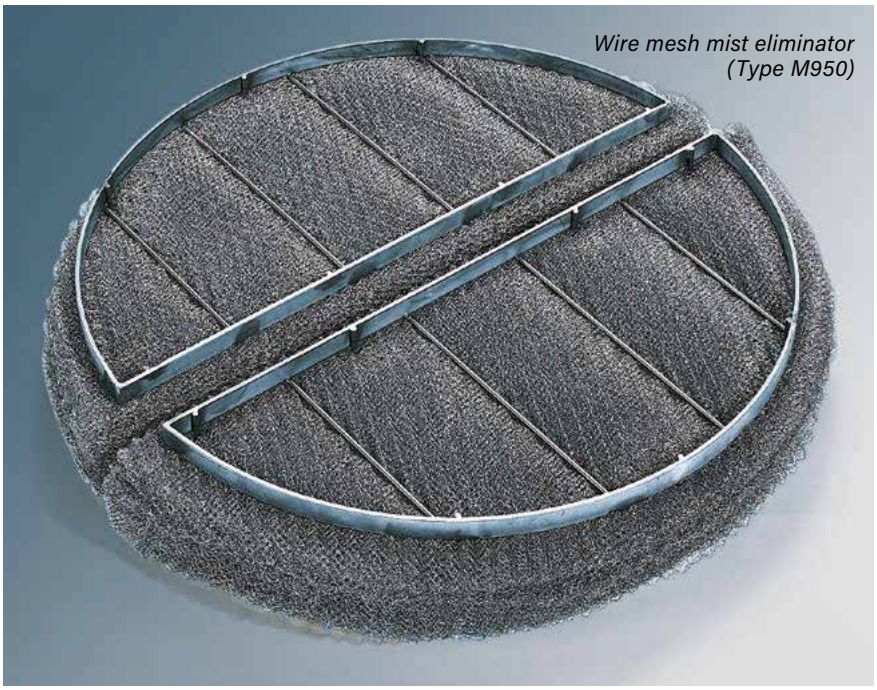
We are furthermore a specialized industrial fabricator per § 19 WHG (German Law for Water Protection).

Our German facilities in Steinwiesen (headquarter, left) and Marktrodach (production & warehouse, right)

Mist eliminators
Design principles and types

Mist eliminators are employed at the top of a packed column or in conjunction with a collecting tray between two packed beds. They separate liquid droplets from the gas stream. Droplet discharge from the column and/or the liquid entrainment from one stage to the next is minimized.

Droplet separation is achieved utilizing the mass inertia of the liquids. For this reason, droplet removal efficiency declines with smaller droplet diameter.



Wire mesh mist eliminator (Type M950)

Vane type mist eliminator (Type M960)

Wire mesh mist eliminators operate by droplet coalescence. As the droplets hit the mesh, they stick to the wires and grow. They are able to discharge from the mist eliminator via gravity. These mist eliminators are recommended for systems where no solids buildup is expected.

In vane type mist eliminators, the gas flow is deflected several times on guide plates so that the liquid droplets impinge on impact. They then flow from these surfaces in a downward direction.

Scaling of solids can be avoided or reduced with the use of spray nozzles located above or below the mist eliminator.

Wire mesh mist eliminators
M950 / P950

Wire mesh mist eliminators provide a high separation efficiency at the lowest installation costs.

They are usually comprised of multiple, compressed layers of thermoplastic or metal wire, and deliver excellent results over a broad range of gas/ liquid separation tasks.

A good design starting point - wire mesh mist eliminators

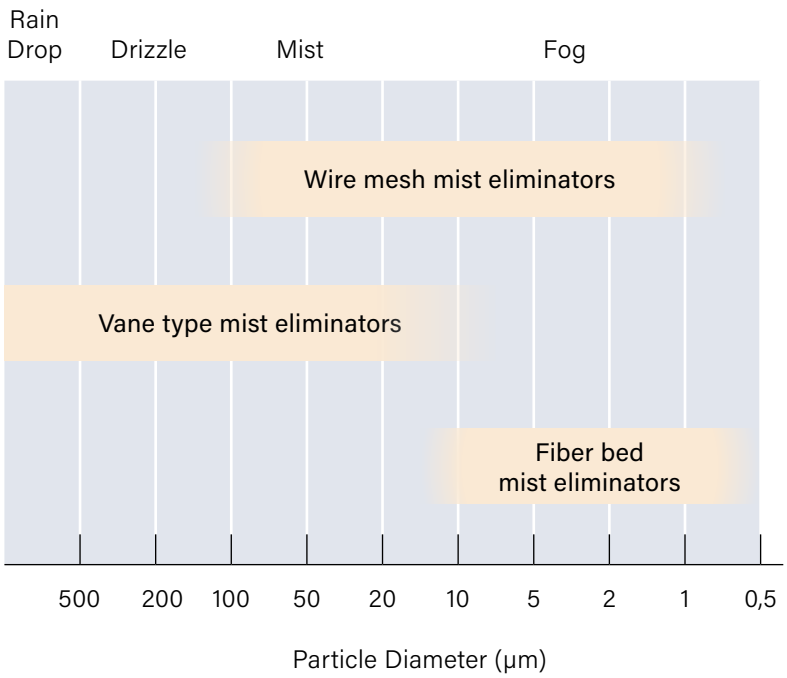
Our wire mesh mist eliminators are made in any size and shape from a wide range of materials, both metal and non-metal. Among others PP, PFA, ECTE, ETFE, PVC, steel, alloys, and titanium.

Wire diameter, surface area, mesh thickness, and interfacial surface tension between the fibre and the collected liquid are the primary variables to consider in specifying a wire mesh pad.

It is also possible to combine wire mesh mist eliminators with vane type ones. These combined systems help to optimize the benefits of individual types of equipment and improve overall performance.

In this case, the mesh serves as a preconditioner to the fine mist gas, forming larger droplets (coalescence) for the vane type mist elimination process.

Wire mesh mist eliminator out of fine grain silver with an open area grid out of PTFE



Different droplet sizes different mist eliminator options

In a broader sense, droplet size determines the type of mist eliminator to be used in a process.

Whereas mesh type mist eliminators target smaller droplet diameters using direct interception, vane type mist eliminators are the correct choice for larger diameters, setting up a barrier for the inertial impact with the droplets.

To make the best choice for your particular application, experts from RVT Process Equipment will help at each step from design to construction.

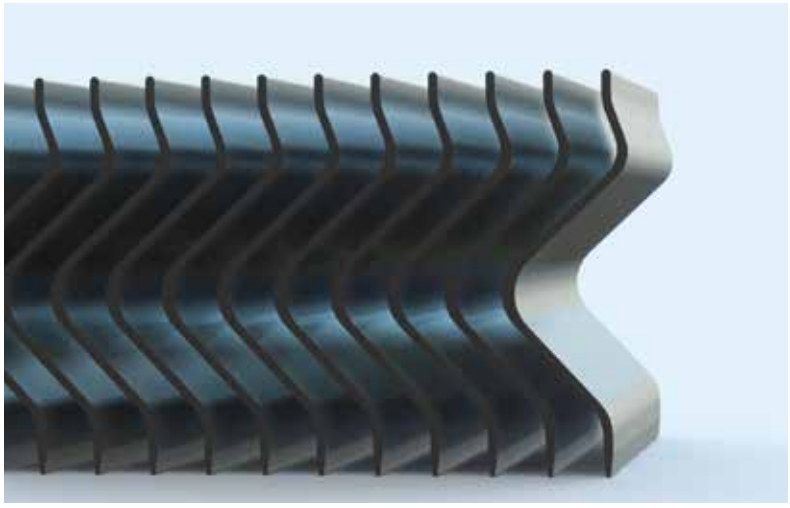
Vane type mist eliminators
M960 / P960

To ensure a reliable operation of your column, it is essential to choose the right design and material of your mist eliminator.

RVT offers many design variations and each can be adjusted to your specific needs, including differences in:

- Vane spacing
- Number of bends
- Angle of bends
- Capture hooks
- Drainage hooks

A metal double-pocket M960-RH900 high-performance vane type mist eliminator.



The P960-RV400 is a RVT standard profile for a vertical gas flow.

Besides the various designs, RVT also offers mist eliminators constructed out of different materials. The most common are any form of metal or plastic.

Our specialists will advise the most suitable material for your application. Available materials include, but are not restricted to:

- Polyethylene (PE)
- Polypropylene (PP)
- Polyvinylidene fluoride (PVDF)
- Stainless steel
- Carbon steel
- Nickel-based alloys
- Titanium
- Other special materials available upon request

Vertical or horizontal
Gas flow options

Vane type mist eliminators can be installed in a variety of ways: Vertically, horizontally, or at any other angle. In most cases, gas flow is either vertically upwards, with the liquid draining counter-current to the gas flow, or horizontally sidewards, with the liquid draining in a direction perpendicular to the gas flow.

Vertical flow

In vane type mist eliminators with a vertical gas flow the vanes are arranged horizontally or in a roof-type installation at a slight angle to the horizontal.

Since the gas flows in an upward direction, the vanes must be designed so that certain regions are bypassed by the gas flow. In this way, zones are created in which the droplets can be collected without interaction with the gas.

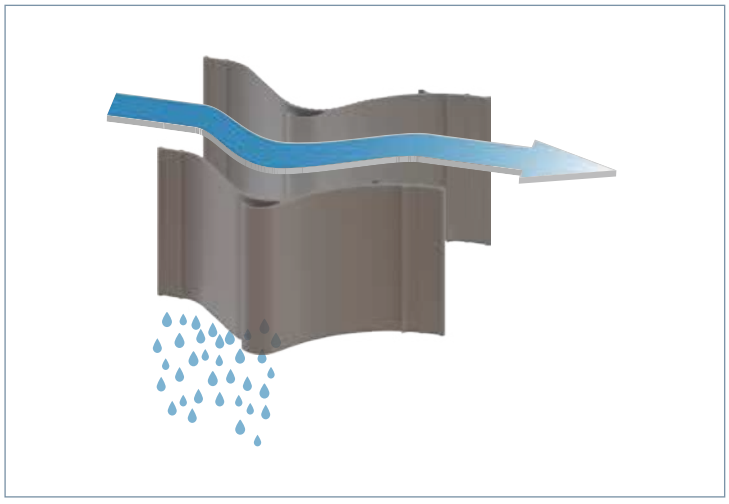
These zones also provide a secure divergence of the collected liquid from the surface of the vanes.

As the liquid flows in the opposite direction to the gas, the film of liquid that forms on the vane has to be converted back to droplets. To prevent re-entrainment of liquid, the newly formed droplets must be substantially larger than those carried into the separator by the gas.

Typical vertical flow mist eliminators are:

- RV200
- RV271
- RV400

Vertical flow at the RV200 type profile



Horizontal flow at the RH100 type profile

Horizontal flow

Vane type mist eliminators for horizontal gas flow consist of a linear row of vertical vanes.

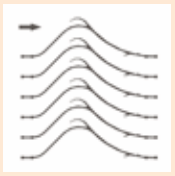
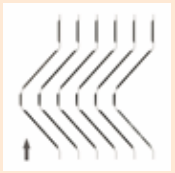
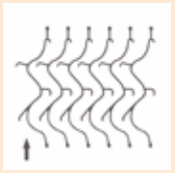
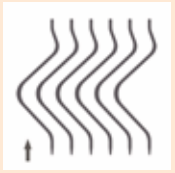
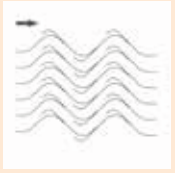
When the flow of gas is horizontal, the vanes stand vertically and the liquid film that occurs flows down on them. The provision of calmed regions behind the phase-separation chambers allow the liquid to drain off without making contact with the gas.

Typical horizontal flow mist eliminators are:

- RH 100
- RH 200
- RH 300
- RH 50X
- RH 60X

Vane type mist eliminators
Overview

Our range of vane type mist eliminator products

Profile	Plastic P 960	Metal M 960	Flow Direction	Special Feature	Pressure Drop
	RH 100	RH 100	Horizontal	Handles a wide gas flow velocity range. High separation capacity and low fouling tendency.	Very low
	-	RV 200	Vertical	Standard profile with high separation capacity and low fouling tendency. Excellent cost-benefit ratio.	Very low
	-	RV 271	Vertical	Enhanced version of the RV 200 with additional V-shaped channels for controlled and more efficient drainage.	Low
	RH 350 RV 350	-	Horizontal/ Vertical	Improved separation efficiency through diametrically opposed hooks and variable distances of separation profiles.	Moderate
	RV 400	RV 400	Vertical	Very low fouling tendency and easy to clean. Lots of possible applications due to variable package lengths and distances of separation profiles.	Very low
	-	RH 50X	Horizontal	Variable number of divisions (X) and phase separation chambers.	Low
	-	RH 60X	Horizontal	Variable number of divisions (X) and phase separation chambers.	Low
	RH 900 RV 900 Double Pocket	RH 900 RV 900 Double Pocket	Horizontal/ Vertical	High separation capacity. Lots of possible applications due to variable package lengths and distances of separation profiles.	Moderate

More materials and profiles are available upon request. For an inquiry, please send your data to info@rvtpe.de, or call one of our sales agents directly for assistance at +49 (0) 9262 77-0.

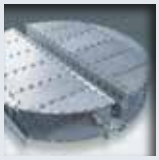
RVT Process Equipment GmbH
Range of products

The way to RVT Process Equipment

Tower packings for mass and heat transfer

Structured packings for mass and heat transfer

Column internals



Mass transfer trays

Biological carrier media

Turn-key units for waste gas scrubbing

Ammonia recovery processes

Combustion plants for the disposal of exhaust air, waste gases and liquid media

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