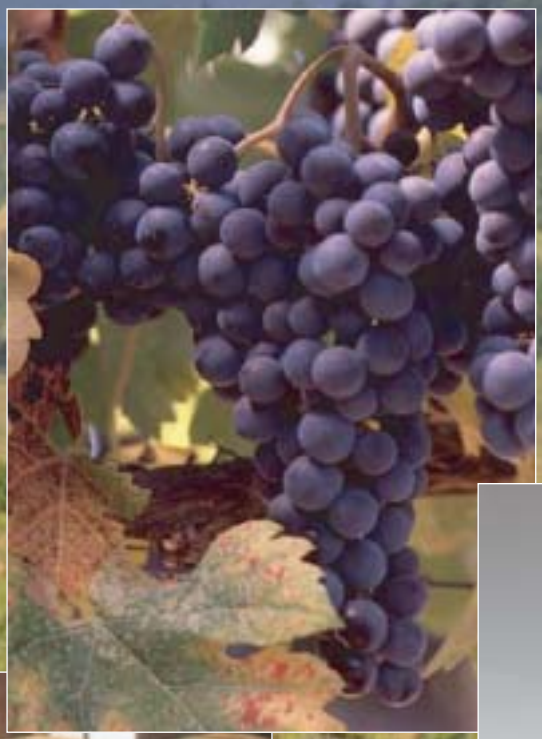
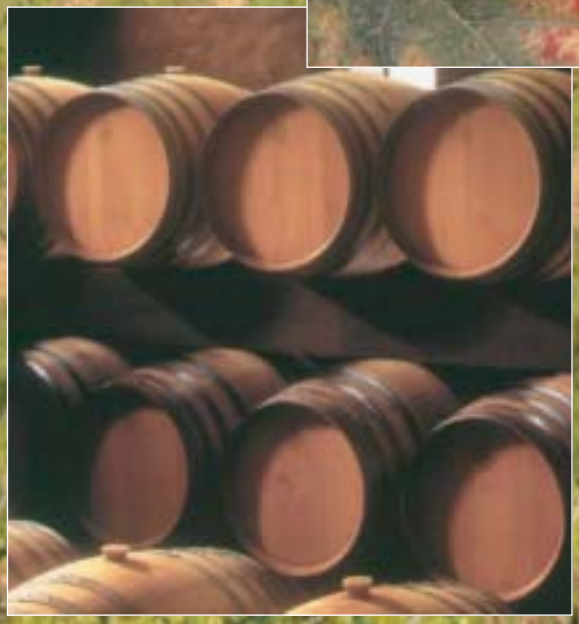
Filtration for your Finest Creation





ADVANTEC MFS, Inc.

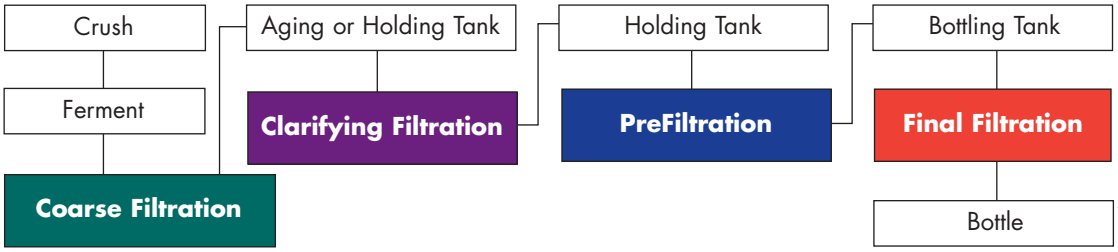
Advantec MFS
Wine Filtration Products

Advantec MFS, Inc. is a wholly owned subsidiary of Toyo Roshi Kaisha, LTD (Japan), the leading manufacturer of filtration media and related scientific products since 1917. Our products are manufactured in ISO 180-9001-approved factories to assure you of product consistency, reproducibility, uniform performance and superior product integrity. We continue to supply our customers with high quality products at competitive prices.

Advantec has been serving Japan's wineries for over 30 years and have won a great deal of trust in the industry. We supply wine-industry products ranging from production filters to membrane filters and apparatus for quality control laboratory procedures.

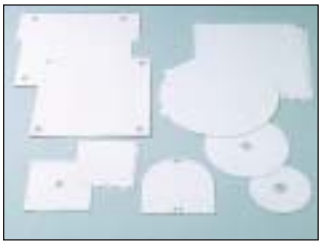
In order to facilitate the selection of appropriate filtration media for each stage of the wine production process, we have listed some of our products and their applications below.

Typical Wine Process



Use these icons to locate filter products for each step of your wine filtration process

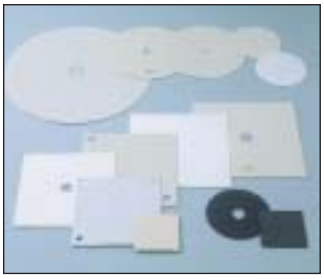
Filtration Steps	Filtration Products
Coarse Filtration	Cartridge (W, TCPD, TCPE)
Clarifying Filtration	Filter Paper (N0131, N026, N027, N028) Filter Pad (NA10, NA050, NO1034-2, -3A, -3B, NR30) Cartridge (TCPD, TCPE, TCP, TCG)
Pre-Filtration	Cartridge (TCP, TCG, TCYE)
Final Filtration	Filter Paper (N0131, N026, N027, N028) Filter Pad (NA16, 17, 100, 300, 500, 600, 900, NR30, 50) Cartridge (TCYE, TCR, TCS)



Standard Use Filter Papers

	Product Name			
Specifications	**No. 131**	**No. 26**	**No. 27**	**No. 28**
weight (g/m^2)	140	320	325	360
thickness (mm)	0.25	0.74	0.68	0.7
water flow rate (s)	240	80	220	350
burst strength (kPa)	170	190	240	290
particle retention (µm)	3	3	1.5	1
surface	smooth	smooth	smooth	smooth
color	white	white	white	white

Water flow time is the time in seconds required to filter 100mL of distilled water at 20° C under pressure supplied by a 10cm water column through a $10cm^2$ section of filter paper.



Non-Asbestos Filter Pads

- From 2mm-4mm thick with a high rate of internal retention
- Made from refined natural fibers and diatomaceous earth
- Not a single asbestos fiber
- Can be sterilized using an autoclave, in-line steam sterilization, hot water sterilization or chemical sterilization.
- Two types available:
  (1) NA-Type (specially treated to give them the Zeta Potential Effect for high absorbency)
  (2) NR-Type (high internal retention)

- While in liquid form, NA-Type non-asbestos filter pads have a zeta positive electric potential. In contrast, colloidal material and microscopic particles in liquid generally have a negative electrical potential. NA-Type filter pads are able to utilize this physical difference to absorb these colloids and microscopic particles by virtue of their electrical charges.

NA10
- Japan's first Zeta Potential Plus Effect filter pad
- Fastest flow rate within this category

NA16
NA17
- Very high retention rate, used for final filtration
- Enables more efficient removal of microorganisms

NA Long Life Type - Our Non-Asbestos Long Life Type filter pads are manufactured for use over a long period.

NA050
- Fast flow rate, comparatively fine particle retention

NA100
- Fast flow rate, good particle retention

NA300
- Standard quality clarifying filter pad

NA500
- High retention rate, used when the goal is a high degree of clarity

NA600
- Higher retention rate than NA500, can be used to remove microorganisms

NA900
- High retention rate, also used for microbial removal

NR-Type - NR-Type filter pads are 4mm thick and have excellent internal retention. They are also resistant to influence from pH.

NR30
- Fast flow rate

NR50
- Extremely accurate, a good choice for filtration of liquids with difficult-to-absorb components, used for removal of yeast, etc.

Clarifying Cellulose Filter Support Pads

- Made of natural fibers, these filter pads are available in 2mm or 3mm thickness
- These pads are primarily used to support pre-coat layers, such as those made of diatomaceous earth. Because the pads are made with tough, waterproof paper, the pre-coat can be repeatedly peeled off and replaced without changing the filter pad.
- These filter pads are thick, with high internal retention for effective clarification of the beverage.

No.1034-2
- At 2mm, this product is thin for a filter pad, but a high density gives it a high particle retention rate.

No.1034-3A, No.1034-3B
- This is a tough 3mm-thick paper. No.1034-3B in particular has been given special treatment to increase wet strength, and with washing can be used several times.

Cartridge Filters

■ **String Wound (W)**

- Manufactured using "string" of selected materials wound around a core tube
- Core tubes available in polypropylene and three grades of steel
- Continuously wound – no joints that would restrict flow or allow by-pass

See catalog for full range of string-wound media

■ **Multigrade Polypropylene (TCPD)**

- Spirally wound multigrade all-polypropylene construction
- Increasing depth retention gradient; as fluid flows through the cartridge, retention efficiency increases

■ **Single and Triple Layer Polypropylene (TCPE/TCP)**

- All-polypropylene construction, medium is single layer of thermally bonded polypropylene
- TCP – (Triple Layer) Upstream and downstream support
  - Larger effective filtration area
- TCPE – (Single Layer) Thicker grade of polypropylene is stronger and does not require support

■ **Polypropylene (TCP)**

- Multiple layers of nonwoven polypropylene maximize filtration efficiency
- Maximal throughput volumes and retention ratings
- Thermally bonded to prevent fiber slough-off, minimize extractables

■ **Glass Fiber (TCG)**

- Upstream polypropylene followed by a glass fiber layer that is wet strengthened with acrylic resin

■ **Coated Cellulose Acetate – Single Layer (TCYE)**

- High efficiency single layer of coated cellulose acetate
- Excellent particle retention

■ **Cellulose Acetate (TCR)**

- Dual cellulose acetate membranes provide internal prefiltration by placing a larger pore size membrane upstream of final rated pore size membrane
- Polyester membrane support is non-fiber releasing

■ **Polyethersulfone (PES) Membranes (TCS)**

- Dual Polyethersulfone (PES) membranes provide internal prefiltration by placing a larger pore size membrane upstream of final rated pore size membrane
- Low extractables, non-fiber releasing
- Quick rinse down
- 100% integrity tested during manufacturing

For equipment CIP, the following cartridges can be selected:	For Chemicals (TCS, TCP) For Water (TCS, TCR) For Steam (TSP)

Cartridge Filter Housings

In order to achieve the highest performance with our cartridge filters, Advantec MFS has developed a variety of housings with a range of flow rates. The optimum housing can be selected to meet the users' requirements. A variety of housings are available, including standard and sanitary types made of stainless steel and plastic. Please contact us for further information.

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