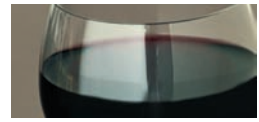
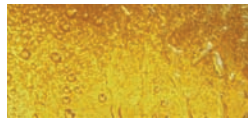
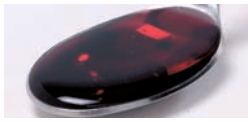




CARLCART
HIGH PERFORMANCE PROCESS AND MEMBRANE FILTER CARTRIDGES
PURITY THROUGH QUALITY™





INTRODUCTION

Carlson's range of process and membrane filter cartridges are manufactured in controlled environments to obtain high quality, contaminant free filter elements which meet the requirements of various international guidelines and requirements.

Carlson filter cartridge elements are used in a broad range of applications from the filtration of wines, beers and lagers to use within the pharmaceutical, chemical processing, cosmetic and water industries.

Typical benefits include:

- high flow rates
- high dirt holding capacity
- long service life
- very good chemical resistance
- high quality assurance

Manufacturing

Carlson's membrane filter elements are quality checked with non-destructive integrity tests such as bubble point test, diffusion and decay pressure test.

Products are sampled and tested for micro-organism retention challenge according to ASTM standard test method F838-83.

The correlations between the results of the integrity test and bacteria retention are available in the Quality Certificate of Analysis and Validation Guides.





Wound and Spun Bonded Filter Elements.

Carlson's range of high quality wound depth filter cartridges offer high contaminant retention capacity at low operating costs. These cartridges are available in various wound materials including:

- polypropylene
- cotton
- glass fibre

with various inner support cores in

- polypropylene
- stainless steel
- tin plate

Various micron ratings, lengths and end cap configurations are available.

Typical applications include:

- pre-reverse-osmosis water treatment
- chemicals
- metal plating
- food and beverage



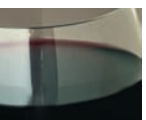
The wound process produces the formation of thousands of channels with a controlled porosity decreasing from the outside section to the inner layer. Progressive removal of particles provides true depth filtration and high dirt holding capacity.

The Carlson range of spun bonded depth filter cartridges is the right choice for applications where good chemical compatibility combined with high contaminant retention and low operating costs is required.

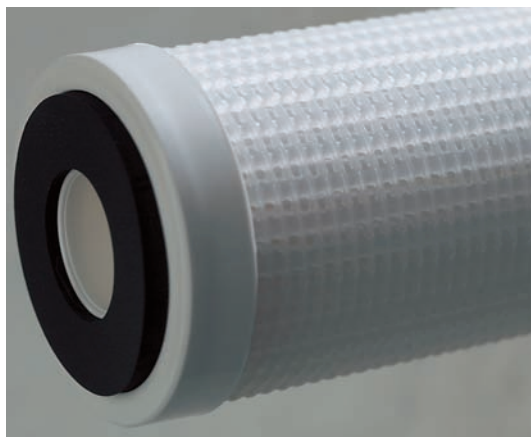
Carlson spun bonded depth filter cartridges are manufactured from either 100% polypropylene or polyester ES fibre (depending upon grade chosen). The stable pores are formed by thermobonding where the fibres come into contact with each other and a true graded density structure is obtained. These cartridges are available in either nominal or absolute ratings at various micron ratings, lengths and end cap configurations.

Typical applications include:

- beers and lagers
- syrups
- edible oils
- cleaning water (process water)
- cosmetics
- resins and adhesives



Depth and Pleated Filter Cartridges



Carlson's range of depth and pleated filter cartridges is suitable for various pre-filtration and final filtration applications, with both nominal and absolute filtration ratings available.

Carlson depth and pleated filter cartridges are available in the following materials:

- polypropylene
- polyester
- borosilicate (glass fibre)



Typical benefits include:

- high surface area
- high resistance with high dirt holding capacity
- regenerable
- steamable
- sanitisable
- EC listed materials for food contact
- FDA listed materials per CFR21
- Validation guide on request (for certain types)

The range includes pleated elements which are pre-fluxed with non-pyrogenic water and suitable for pharmaceutical applications, through to multi-layered pleats of decreasing porosity to achieve high effective filtration area and high dirt holding capacity.



Typical operating conditions

max continuous temperature	-	60°C
regeneration	-	2% NaOH solution @ room temperature
sterilisation with steam	-	continuously with cycles of 20 minutes at 121°C
sanitization with hot water	-	80°C max
sanitization with chemicals	-	can be sanitised by standard chemical agents
max differential pressure	-	5.0 bar at 25°C
recommended change out differential pressure	-	2.0 bar at 25°C



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Membrane and Final Sterilizing Filter Cartridges

Carlson's range of membrane elements and final sterilizing cartridges is suitable for a vast range of applications, including final filtration in the pharmaceutical and food and beverage applications. There are specific elements for the wine and beer industry, which give cost benefits and optimum performance in cold microbiological stabilisation.

The membranes are manufactured in a controlled environment, with rigorous testing during the manufacturing process, to guarantee the highest standard and quality.

Carlson membrane elements incorporate hydrophilic asymmetric PES (Polyethersulphone) media, with either Polyester, Polypropylene or Glass Fibre upstream and down stream support layers.

Other options of multilayered cartridges with a higher effective filtration area are available. Absolute filtration is available down to 0.1 micron and is guaranteed through integrity testing and regular bacteria challenge testing.



Typical benefits include:

- high effective filtration area
- in situ and easy integrity testing
- repeatedly steamable in situ or in autoclave
- sanitizable and regenerable
- thermowelded construction
- EC listed materials for food contact
- FDA listed material ref CFR 21 (USP)
- validation guide on request (only on certain types)

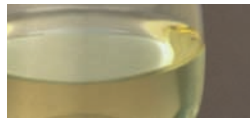
Typical operating conditions

max continuous temperature	- 65°C
max cumulative time of steam sterilisation	- 40 hours at 121°C with cycles of 30 Minutes
sanitization with hot water	- 80°C max
sanitization with chemicals	- can be sanitized by standard chemical agents
regeneration	- 2% NaOH solution at room temperature
max differential pressure	- 5.0 bar at 25°C
recommended change out differential pressure	2.0 bar at 25°C
recommended rinse up volume	- 3 litres / 10" cartridge



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Metallic Filter Elements

Carlson's range of metallic filter elements include various pleated, mesh and sintered stainless steel filter elements. Metallic filter elements are regenerable by backwashing and cleaning and have a very high mechanical and temperature resistance.

Typical applications are:

- filtration of drinkable and process water
- paints
- resin
- wax
- corrosive chemicals
- trap filtration



Housings

Carlson offer a range of industrial, process and sanitary housings, suitable for single and multiple cartridges. Carlson housings provide a cost effective investment, easy change costs and low maintenance and are available in different materials. Stainless steel housings can be internally and externally electropolished with different closure and inlet outlet connections.

Be-spoke housings are available and made to customer requirements, including skid mounted units. All housings are pressure tested, CE marked and comply with the various PED directives and can be designed to meet ATEX directives.



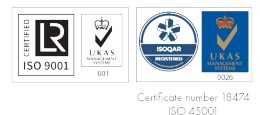
Dealer stamp

Carlson Production Facility



ISO 9001: 2000

Purity through quality™ since 1923



Certificate number 18474
ISO 45001



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