Water Solutions

DuPont HYPERSHELL™ Elements

Product FAQs

What are HYPERSHELL™ Elements?

DuPont HYPERSHELL™ Elements are sanitary elements for use in Food and Dairy applications. The HYPERSHELL™ Element product line combines three technologies: robust FILMTEC™ membrane, precision automated rolling, and a machined polypropylene shell.

What are the benefits of the HYPERSHELL™ Elements?

The rugged HYPERSHELL™ Elements provide safer and faster loading and removal of elements from a system, improved hydrodynamics through the element scroll, reduced bypass, and a reduction in premature element failure. This adds up to savings in time and energy, and an increase in production.

How do the HYPERSHELL™ Elements save energy?

The key to energy savings is in the design of the shell. The larger diameter of the shell and the nonporous material of the shell reduce the amount of exterior fluid bypass. Compared to mesh-wrapped elements, there is up to 64% less bypass area with HYPERSHELL™ elements. That means more feed flows through the element for processing instead of around the element and through the mesh.

In a typical application, HYPERSHELL™ elements require approximately 30% less flow than a mesh-wrapped element to achieve the same pressure drop. To take advantage of the energy savings, the operating parameters should be optimized for the HYPERSHELL™ elements.

Are the mesh-wrapped sanitary elements being discontinued?

After a 6-month transition period, the mesh-wrapped versions of 8" elements for use in food and dairy processing applications were discontinued. Now orders are filled with HYPERSHELL™ Elements.

Note: The 3.8" mesh-wrap sanitary elements will continue to be available for use in Food and Dairy processing applications.

Do the HYPERSHELL™ Elements have FDA food contact status?

All materials of construction comply with U.S. Food & Drug Administration regulations for indirect contact with food.

It is the responsibility of the user to meet any additional regulatory requirements required for specific applications.

How is the 8038 model different from the 390 model?

The 8038 model is 38" long and the 390 model is 40" long. The leaves (tails) of the 8038 are trimmed, making the element suitable for applications in which the concentrate is the desired product. The 390 model is suitable for applications in which the permeate is the desired product. The 390 model has polysulfone ATDs included and the 8038 does not.

Will the shell expand during use, making the element difficult to remove from the system housing upon replacement?

Customers report that HYPERSHELL™ Elements are easier and safer to remove from a system. Unlike mesh-wrapped sanitary elements, the rigid shell of the HYPERSHELL™ elements does not deform, and preserves the elements shape in use. This is one of the primary benefits of the product technology.

Since the outer diameter of the HYPERSHELL™ Element is bigger than the mesh-wrapped version, will it fit in my vessel?

HYPERSHELL™ Elements are designed to fit Schedule 40, 8" stainless pipe (nominal 7.98" ID), and should pose no problems with tolerance and fit.

Can I use the same operating conditions as I used with mesh-wrapped fullfits?

The same operating conditions that are used for mesh-wrapped sanitary elements can be used with the HYPERSHELL™ Elements.

Where is the serial number? How do I identify the element?

The serial number and product name of each element is laser etched into the polypropylene shell for easy identification. This is another benefit over traditional mesh-wrapped elements, since the serial number and product name will not wash away with use.

Can the HYPERSHELL™ Element be installed with mesh-wrapped elements in the same pressure vessel?

DuPont does not recommend mixing different element types within a given installation, and expects that the product benefits (energy savings, etc.) would be diminished. DuPont has no reason to believe the elements would be incompatible in this scenario, but no testing has been done to determine overall performance expectations.

How are the elements maintained for transportation and storage prior to use?

HYPERSHELL™ Reverse Osmosis Elements can be shipped wet in a storage solution containing 1% by weight sodium bisulfate.

HYPERSHELL™ Nanofiltration Elements can be maintained in a buffered storage solution.

HYPERSHELL™ Elements can be shipped dry. Dry elements have no sodium bisulfate solution.

How long is the shelf life?

Wet elements can be stored up to one year. Refresh storage solution as needed. Dry elements can be stored indefinitely.

Have a question? Contact us at: dupont.com/water/contact-us

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