

# Get more from milk.

## FilmTec™ Hypershell™ NF245XD Elements for Dairy Applications

### Dairy Ingredients

On a global scale, milk and milk derived dairy products are some of our most important forms of nutrition. Milk is a complex mixture of fats, proteins, lactose, and minerals in water. Concentrating the milk for drinking and separating out the essential ingredients, such as milk powder, whey protein, lactose, and other nutrients, enables products from milk and cheese to infant formula and protein shakes.

Demand for dairy ingredients continues to grow globally supported by the increasing number of health-conscious consumers, the ready availability of dairy products, high income levels across developing economies and increasing investment by food companies to launch new dairy products.

### Enabling Processing of Dairy Ingredients

Dairy processing may involve several separation, concentration, and purification steps requiring nanofiltration, reverse osmosis membranes, and ion exchange resins.

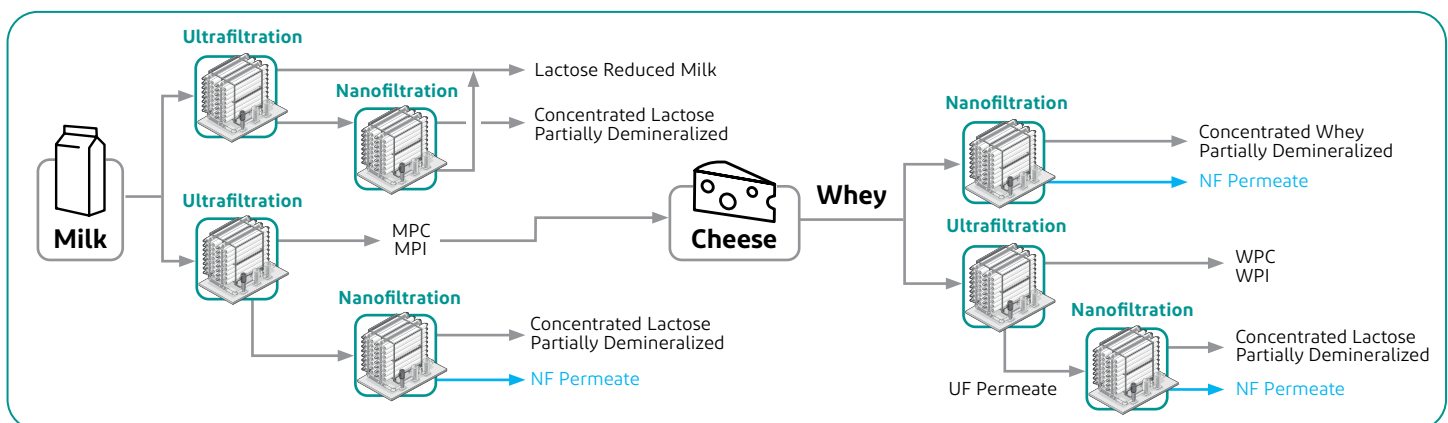
Nanofiltration elements are used for the separation of divalent and monovalent ions, making them an excellent choice for separation and demineralization of whey protein and lactose.

### Separation and Demineralization of Whey Protein and Lactose

Separation and demineralization of whey protein and lactose requires a nanofiltration membrane that has an appropriate molecular weight cut off to reject organic molecules such as whey protein and lactose but yet is open enough to allow significant transport of monovalent salts.

FilmTec™ Hypershell™ NF245XD elements help enable long-lasting separation and demineralization from milk and whey streams that maximizes operational efficiency.

## Separation and demineralization of milk and whey streams.



# FilmTec™ Hypershell™ NF245XD Element Portfolio that is Built to Last without Compromising Performance



**Longer Service Life**



**Enhanced Chemical Resistance**



**Improved Permeability**

**FilmTec™  
Hypershell™**



**Industry Leading Membrane Quality**



**Less Frequent Replacements**

Note: Performance depends on the characteristics of each milk and whey plant. Always follow DuPont's recommended operation and cleaning guidelines which can be found on the [product data sheet](#)

## Unlock durable performance even in challenging conditions.

Nanofiltration FilmTec™ Hypershell™ elements now have up to 20% longer service life compared to competitive NF elements. This is achieved by having an improved membrane chemistry expertly engineered to endure the stress caused by the demanding conditions of daily cleanings.

## Achieve improved product yields.

The key to improved yields is in the stability of the membrane. FilmTec™ Hypershell™ NF245XD elements are designed to maintain rejection and concentration performance during the element's service life. This results in less product loss during operations and reduced production downtime compared to competitive NF elements.

## Experience high efficiency.

New membrane chemistry with enhanced permeability enables up to 10% more productivity vs competition due to increased flow through the membrane which can translate to lower energy consumption.

## Less Hassle and Inconvenience.

Products that last, contribute positively to cost and time savings associated with replacing elements, helping to prolong replacement cycles.

## DuPont NF Product Portfolio

Short Name	Name	Feed Spacer (mi)	Outer Wrap	ATDs included	Rating max	Cleaning limits
NF245XD	FilmTec™ Hypershell™ NF245XD-8038-FF	33	Outer shell	No	50°C/ 54.8bar	pH 1.8-11 at 50°C
	FilmTec™ Hypershell™ NF245XD-8038/48-FF	48	Outer shell	No		
	FilmTec™ NF245XD-3838/30-FF	30	Mesh Wrap	No		
	FilmTec™ Hypershell™ NF245XD-3838/48-FF	48	Outer shell	No		
	FilmTec™ NF245XD-3840/30-FF	30	Mesh Wrap	No		
NF	FilmTec™ Hypershell™ NF-8038-FF	33	Outer shell	No		
	FilmTec™ NF-3838/30-FF	30	Mesh Wrap	No		
	FilmTec™ NF-3840/30-FF	30	Mesh Wrap	No		



- Full-fit element configuration that minimizes stagnant areas for a sanitary design.
- Sanitizable with peracetic acid or hydrogen peroxide up to 1,000 ppm at 25° C for 20 minutes recirculation (one-twice a week).
- Elements are designed to fit schedule 40, 8-inch stainless pipe (nominal 7.98-inch ID).
- Maximum element dP is 0.9 bar and maximum entire vessel dP is 4.1 bar.
- Maximum element recirculation cross-flow is: 18.2 m³/h (80 gpm) for 8 inch and 6.8 m³/h (30 gpm) for 4 inch elements.



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**Water Solutions**

**[www.dupontwatersolutions.com](http://www.dupontwatersolutions.com)**

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