

FILTERITE® NEXIS® SERIES
FILTER CARTRIDGES WITH
CoLD® FIBER TECHNOLOGY

Although filter cartridges produced from conventional melt blowing technology have provided superior performance to those produced from string wound fiber and molded technology, they frequently exhibit limitations in filtration consistency, inferior mechanical strength, premature surface blinding, and random unloading of captured contaminant. Clearly, a technology was needed that could leverage the strengths of conventional melt blowing technology yet overcome its intrinsic shortcomings.

Filterite has developed that technology, consisting of an innovative melt blown web structure comprised of micro-thin fibers intermingled with large diameter support fibers. This proprietary CoLD (Co-located Large Diameter) fiber structure results in filter elements that offer a combination of highly efficient contaminant removal, long on-stream life cycles, and improved mechanical strength.



NEXIS SERIES FILTER DESCRIPTION

Nexis Series high efficiency depth filter cartridges are constructed using an advanced, microprocessor controlled CoLD MELT® production process that permits the creation of multiple filtration zones within a single filter cartridge. The multi-zone design produces a gradient pore structure which effectively captures larger particles in the outer sections of the filter cartridge while providing highly efficient and consistent removal of smaller particles in the inner sections.

Our patented* CoLD fiber technology has been selectively integrated into critical zones of the Nexis filter to enhance the cartridge's retention, efficiency and mechanical strength. The interlocking and thermal bonding of support fibers with ultra-thin filtration fibers creates a rigid filter matrix that withstands dynamic operating conditions. The array of micro-thin melt blown fibers in the Nexis cartridge creates a high degree of internal void volume enabling the filter cartridge to capture more contaminant

than conventional melt blown, string wound or molded filter cartridges. As a result, Nexis filter cartridges provide lower operating costs through longer service life cycles and less frequent cartridge change-outs.

Additional performance advantages of Nexis filters with the innovative CoLD fiber structure include:

■ PROPRIETARY CENTER CORE

This provides greater mechanical strength and temperature resistance than coreless melt blown products and permits the fiber design of the filter cartridge to be optimized for filtration. Coreless filter cartridge designs compress the innermost fibers to provide mechanical support, which may compromise the critical inner fiber matrix and contribute to shortened filter life and inefficient retention.



CoLD (Co-located Large Diameter) fibers enhance the strength of the fiber matrix in the most critical filtration zones.

* U.S. Patent Nos.: 5,591,335 5,653,833
 5,681,469 5,690,782
 5,730,820 5,733,581
 5,741,395 5,783,011
 5,910,229

■ PURITY OF CONSTRUCTION

Nexis filter cartridges are available in high purity 100% polypropylene and 100% nylon. Both are surfactant, silicone, binder and adhesive free. By utilizing chemically inert materials of construction, Nexis filters may be used in a wide array of applications.

■ CONSISTENT EFFICIENCY

The pore structure of string wound and conventional melt blown depth filter cartridges can change in response to variable flow and pressure conditions, thereby releasing contaminants previously captured by the filter cartridge. Unlike conventional filters, the support fibers used in the CoLD fiber design hold the filtration fibers firmly in place. This rigid pore structure results in more consistent, reliable, and reproducible filtration.

■ IMPROVED FILTRATION OF VISCOUS FLUIDS

Excessive filter media compression, especially in cartridges that use very fine melt blown fibers, can limit the service life and efficiency of melt blown cartridges. The enhanced mechanical strength and integral fluid transport system provided by the CoLD fiber structure resists compression, thus providing significant improvements in filtration performance.

■ LONGER LIFE CYCLES

Nexis filter cartridges with CoLD fiber technology do not collapse or compress in response to increasing differential pressure as do conventional melt blown filters, which experience media compression and a resulting rapid increase in differential pressure. The result is very efficient filtration of contaminants over extended life cycles. When compared to conventional depth filter cartridges of equal

efficiency ratings, Nexis filter cartridges provide significantly longer life cycles, in some cases up to six times longer.

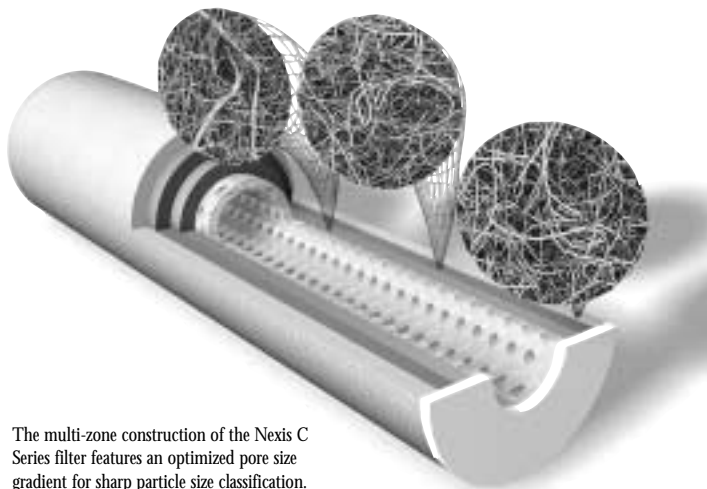
NEXIS C SERIES

Filterite has developed a new filter cartridge that features all of the benefits of the original Nexis, with CoLD fiber technology, and is engineered with a pore size gradient for sharp particle size classification. The Nexis C is specifically designed for use in applications with a narrow particle size distribution, such as found in many paint and coating formulations.

The Nexis C depth filter technology is for use with fluid formulations, which require a high degree of particle classification, coupled with high performance deformable particle retention. The patented microprocessor controlled melt blowing process developed by Filterite is capable of producing a filter cartridge with a truly classifying pore size gradient. This gradient throughout the filter's depth provides classifying filtration with long on-stream life and low pressure drops.



Some depth filters do provide classifying filtration, but do not have such a gradient, resulting in surface capture of particles, and hence, short on-stream life, poor flow characteristics and high pressure drops, when used in fluids with narrow particle size distributions. The modified pore size gradient in the Nexis C provides complete utilization of the entire filter depth as compared to other depth filters, when used with such fluids. Other depth filters have too steep a pore size gradient and tend to capture particles in only one zone when subjected to monosize particle distributions. This also results in short life.

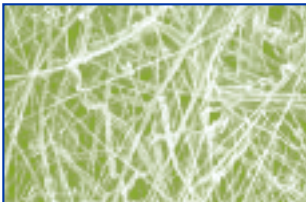


The multi-zone construction of the Nexis C Series filter features an optimized pore size gradient for sharp particle size classification.

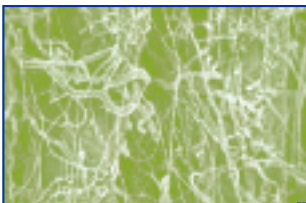
Graded Pore Structure
 Micrographs of
 Nexis Series Filters
 Magnification 75X



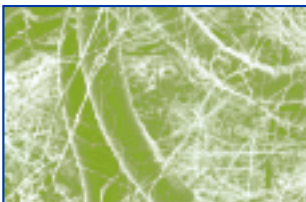
Outer PreFiltration Zones



Intermediate PreFiltration Zones



Intermediate PreFiltration Zones
 with CoLD Fibers



Final Filtration Zone:
 Micro-Thin Fibers Interwoven
 with CoLD Fibers



APPLICATION SUCCESS

AQUEOUS PARTS WASHERS

ON-STREAM LIFE CYCLES INCREASED
 33%.

NO CARTRIDGE DELAMINATION.
 SUBSTANTIAL COST SAVINGS.

OPTIONAL END CAPS

- *Thermally sealed to the filter cartridge*
- *No adhesives or foreign material added*

PROPRIETARY CENTER CORE

- *Provides enhanced structural support*
- *Stands up under rigorous applications*
- *Allows optimization of media for filtration*

UNIQUE MELT BLOWN MEDIA

- *Incorporates CoLD Fiber Technology*
- *Choice of polypropylene or nylon construction*
- *Surfactant, binder, silicone and adhesive free*

OPTIONAL O-RINGS OR ELASTOMER GASKET SEALS

- *Improved cartridge to housing seal*
- *Prevent fluid bypass*

Product Feature	Product Benefit	Customer Benefit
100% Polypropylene or 100% Nylon Construction	Broad Chemical Resistance Biologically Inert	Reduced Inventory Costs Since Elements Can Be Used In Multiple Applications Within A Facility Fine Filtration of Solvents Possible With All Nylon Nexis
Patented CoLD Fiber Technology	Consistent Filtration As Differential Pressure Increases Cartridge Will Not Randomly Unload Contaminants Improved Flow Performance In Viscous Fluids	High Performance Filtration In Critical Applications Consistent And Reproducible Filtration Results Less Rework Due To Inconsistent Filtration
“C” Series for use in fluids with narrow particle size distribution	Optimum Pore Gradient Utilization of Entire Depth of Filter Cartridge	Highly Efficient Classification of Solid and Deformable Particles Significantly Longer On-Stream Life Than Other Depth Filters
Continuously Gradient Pore Structure	Outer Layers Provide Cost Effective Pre-Filtration While Inner Sections Provide Highly Efficient Final Filtration	Longer On-Stream Life Cycles Lower Annual Filtration Costs Minimizes Annual Disposal Costs
Proprietary Center Core	Higher Collapse Strength Improved Temperature Resistance Optimized Flow Distribution	Versatile Filter Can Be Used In Rigorous Applications Uniform Filtration Results
Micro-Denier Melt Blown Filtration Fibers	High Efficiency Particle Removal Greater Void Volumes Than Conventional Depth Filters Non Fiber Releasing	Enhanced Filtration Results Elimination Or Reduction Of Recirculation To Achieve Desired Filtration Results Clean Filtrate
Highly Automated Computer Controlled CoLD MELT Manufacturing Process	Minimal Lot To Lot Variability Custom Engineered Formulations Achievable	Improved Product Quality Higher Production Yields Lower Filtration Costs
Weld Free Continuous Length Filters To 40”	Minimizes The Chance Of Particle Bypass Uniform Fluid Distribution Full Utilization of Filter Media Area	Enhanced Product Quality Improved Production Yields

Advanced designs, innovative features and stringent quality control make Nexis filter cartridges truly exceptional for the most critical processing applications.

Nexis Series	Retention Ratings (µm)	Efficiency	Media	Feature	Type of Applications	Examples
NXA NXT	0.5-120 0.5-200	Absolute 90%	Polypropylene	CoLD fiber technology with gradient pore structure	Fluids with broad particle size distribution ; deformable contaminant removal	Bulk chemicals, machine coolants, make-up water, acids, mouthwash, perfume, Pre-RO
NXC	1-100	90%	Polypropylene	CoLD fiber technology with modified pore size gradient	Fluids with narrow particle size distribution ; high performance solid and deformable particle removal	Automotive coatings, inks, slurries, industrial coatings, photoemulsions, lacquers, architectural coatings
NXN NXNT	5-70 3-40	Absolute 90%	Nylon	CoLD fiber technology with gradient pore structure	Aggressive and/or high temperature application with broad particle size distribution ; deformable contaminant removal	Aromatic and chlorinated solvents, ceramic dispersions gasoline, hydraulic oils, solvent based coatings, vapor degreasing, methylene chloride



Nylon Nexis filter cartridges are ideal for delivering high efficiency filtration of solvents and oils used in a variety of applications.

NEXIS SERIES FILTER CHEMICAL COMPATIBILITY

Classification	Excellent	Good	Suggest Testing	Not Recommended
Organic Acids	██████████		██████████	
Inorganic Acids		██████████	██████████	
Solvents	██████████		██████████	
Alkalies	██████████	██████████		
Oils	██████████	██████████		
Water (Ambient)	██████████			
Oxidants			██████████	██████████
Brine Solution	██████████			
Stream Sterilization		██████████		██████████
Micro-Organism Resistance	██████████			

NYLON
 POLYPROPYLENE

APPLICATION SUCCESS

FOOD GRADE COATINGS

TIME BETWEEN CHANGEOUTS

INCREASED 2 FOLD.

PASSED TASTE AND EXTRACTABLES TESTS.

FILTRATION COSTS CUT IN HALF.

This data is for general guidance only. Our Technical Service Department can provide more specific data. Trial compatibility tests are recommended to optimize results.



*The American
Filtration Society Users
Committee selected the
Nexis Series Filter
Cartridge New
Product of the Year for
1996*

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