



3M Science.
Applied to Life.™

3M Separation and Purification
Sciences Division

Filtration and Separation Solutions.

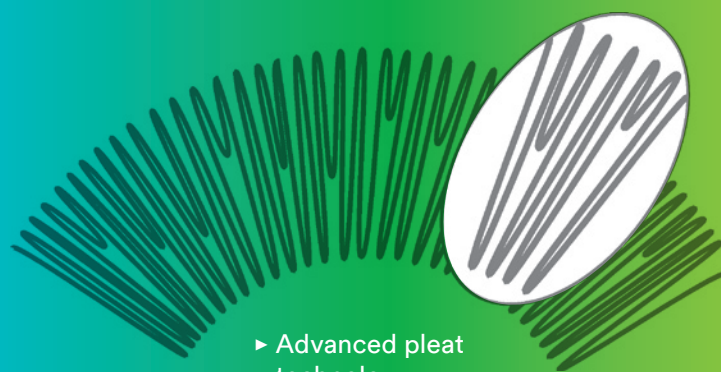
Products Overview

Innovative solutions to tackle your
toughest filtration and dissolved
gas control challenges.

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Innovative technology you can count on.



► Advanced pleat
technology

3M™ High Flow Filter

- Compound radial
pleat design



3M™ Liqui-Cel™

- Membrane dissolved
gas control technology



Improving efficiency and process effectiveness is our specialty.

When it comes to optimizing your process, you need just the right solution for the job. That is why customers around the world turn to 3M Filtration and Separation Solutions.

We understand the potential challenges many industries face on a daily basis, and we're constantly exploring new ways to help you overcome them. Because when your business operates at full capacity, you need filtration and dissolved gas control solutions that can keep up – and do so reliably.

Working with 3M, our customers have access to a global network of sales professionals, application engineering experts, and passionate teams driven to help with your challenges.

For more information, visit

3M.co.uk/FiltrationSeparation
or

3M.co.uk/Liqui-Cel



Depth Filter Cartridges

Meet the needs of a variety of applications with an extensive line of cartridges in a cylindrical depth filter construction, featuring various materials, configurations and grades.



Absolute Rated – 3M™ Betapure™ Filters

► AU Series

Uniform porosity, rigid cartridges manufactured from thermally bonded polyolefin or polyester fibers for classification applications in fluids like coatings, specialty chemicals and electronics slurries.

► NT-T Series – European food standard 1935/2004

Polypropylene, wound non-woven cartridges featuring innovative design resulting in superior flow characteristics.

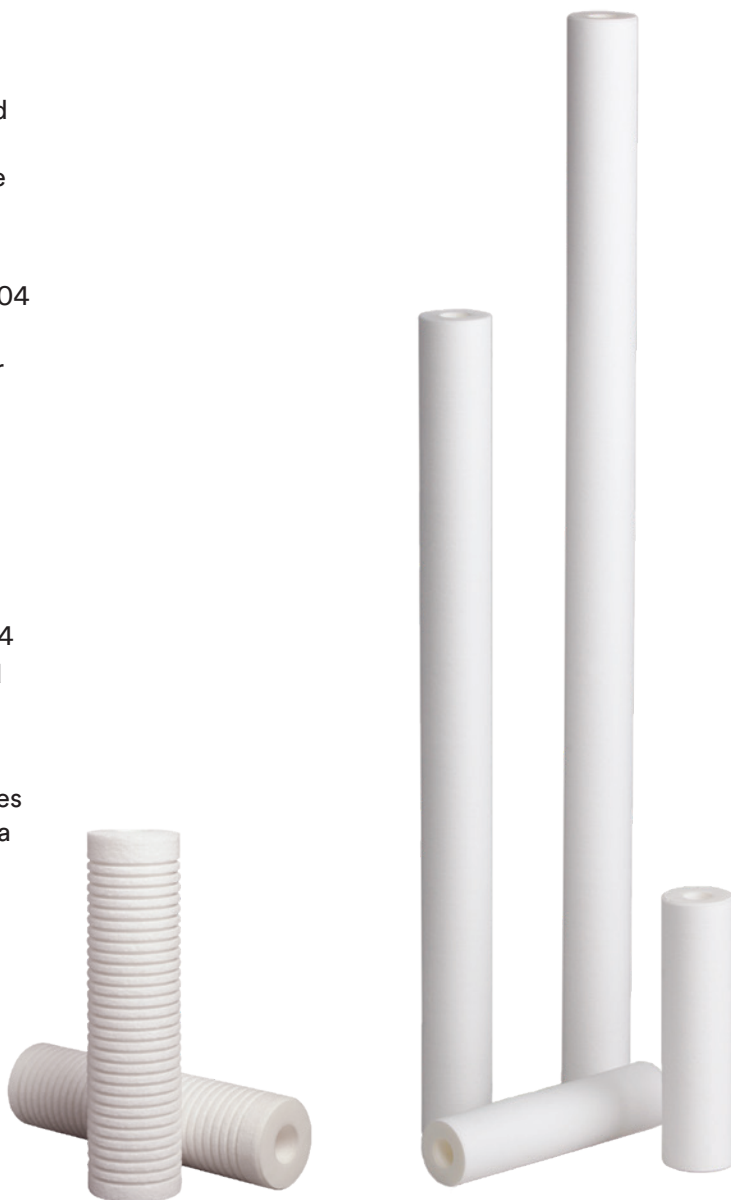
Nominally Rated – 3M™ Micro-Klean™ Filters

► RT Series – European food standard 1935/2004

Rigid polypropylene cartridges for water-based and other industrial fluid applications.

► D Series

Cotton or polypropylene string wound cartridges with integrated layers of non-woven filter media and multiple core options.



Surface Filter Cartridges

Extensive line of absolute-rated surface filter cartridges can provide advantages in various applications and are available in multiple materials of construction, configurations and grades.



Pleated Polypropylene – 3M™ Betafine™ Series Filters

- ▶ **XL Series** – European food standard 1935/2004
All polypropylene pleated non-woven cartridges utilizing 3M Advanced Pleat Technology (APT) resulting in optimized filter media utilization and extended filter life.
- ▶ **PBG Series** – European food standard 1935/2004
Multi-layer polypropylene non-woven graded-porosity filter cartridges featuring APT to capture contaminant throughout the filter media to maximize filter life. Ideal for Food & Beverage Markets and high temperature sanitization.
- ▶ **PEG Series**
Multi-layer polypropylene non-woven graded-porosity filter cartridges featuring APT to capture contaminant throughout the filter media to maximize filter life. Suited for Electronics and other Industrial markets.



Pleated Membrane – 3M™ LifeASSURE™ Series Filters

- ▶ **BA Series** – European food standard 1935/2004
Nylon, single-zone microporous membrane filters for final filtration in Food & Beverage applications.
- ▶ **BLA Series** – European food standard 1935/2004
Nylon, multizone microporous membrane filters for prefiltration in Food & Beverage applications, or as a final filter in non-critical applications.
- ▶ **BNA Series** – European food standard 1935/2004
PES, highly asymmetric microporous membrane filters for final filtration in Food & Beverage applications.
- ▶ **BDA Series** – European food standard 1935/2004
PES, dual-layer, asymmetric microporous membrane filters for sterile filtration in Food & Beverage applications.
- ▶ **PFS and PBS Series**
PTFE microporous membrane filters for sterile air/gas filtration.

*Not all products may be available in every region.
Please contact your local sales representative.*

Charge Modified Filter Cartridges

Our full line of charge modified depth filters trap contaminants through depth straining, but also via electro-kinetic adsorption of particles smaller than the rated pore size. They're composed of cellulose, a variety of application specific filter aids and proprietary binding resins.



3M™ Zeta Plus™ Series Filters

▶ Activated Carbon Series

Activated carbon containing filters capable of reducing trace organics, color, and other contaminants without the cleanup problems associated with bulk activated carbon.

▶ HT Series – European food standard 1935/2004

Featuring very high tensile strength media, this series is well suited to most Food & Beverage applications where repetitive hot water flushing is common, as well as in demanding general industrial applications.

▶ MHT Series – European food standard 1935/2004

Two layers of high tensile strength media combined into a single filter offers increased throughput in Food & Beverage applications. The first, more open layer provides prefiltration while the tighter, second layer provides retention of finer contaminants.

▶ C Series

Designed to reduce haze in several industrial applications.

▶ S Series

General purpose series used to control turbidity and contaminating fine particulate in general industrial applications.



Large Diameter Cartridge Systems

Meet the needs of a variety of applications with an extensive line of large diameter filter cartridges (flow rate capabilities up to 113 m³/hr) available in multiple configurations, media types sizes and grades.



- ▶ **High Flow Series** – European food standard 1935/2004

All polypropylene cartridges featuring different high efficiency polypropylene microfiber media (HF/HFM) in a unique radial pleat configuration. Outside to inside flow geometry with large inner diameter supporting high flow applications such as pre-RO and other industrial processes.

- ▶ **HFR Series**

Pleated polypropylene cartridges featuring 3M high efficiency microfiber media, with inside to outside flow pattern. This configuration allows for direct retrofit into many existing large diameter housing installations.

- ▶ **700 Series** – European food standard 1935/2004

All polypropylene cartridges featuring 3M high efficiency polypropylene microfiber media in a unique radial pleat configuration. Outside to inside flow geometry with high dirt holding capacity. Ideally suited for many refinery, oil & gas and industrial chemical applications.

- ▶ **HF and HFM Media** – European food standard 1935/2004

The standard of HF media is ideal for the removal of general particles and suspended solids. However, if you are filtering biofoulants and deformables then the HFM media option with its greater depth filtration capability should be your choice. All versions of the 3M High Flow filters are completely interchangeable, so no matter which filter option is needed during different operational conditions, 3M has you covered.



Bag Filters

A full line of bag filtration solutions in a variety of form factors supporting cost-effective filtration in a wide variety of industries.



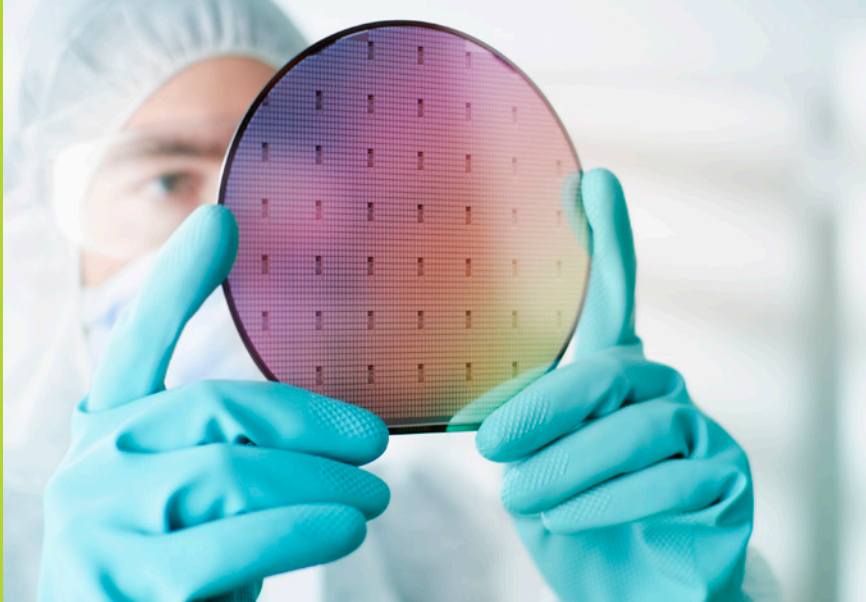
Bag Products

- ▶ **NB Filter Bags** – European food standard 1935/2004 (only applies to polypropylene version)
Nominally rated polypropylene and polyester felt and nylon monofilament nominally rated filter bags. Cost effective filtration for industrial, automotive and oil & gas applications.
- ▶ **DF Series** – European food standard 1935/2004 (only applies to polypropylene version)
Nominally rated, graded porosity polypropylene and polyester felt media in a unique two-cylinder design with high dirt holding capacities and up to five times the life of conventional nominally rated bags. Easily retrofittable for use in bag filter housing systems.
- ▶ **100 Series**
Single-layer, high efficiency, 3M polypropylene microfiber media in a bag configuration. Ideally suited for industrial applications requiring high particle removal efficiency, with the added benefit of oil contamination reduction.
- ▶ **500 Series**
Multi-layer, high efficiency. 3M polypropylene microfiber media in a unique wrapped bag configuration. High dirt holding capacity allows for much longer life than conventional filter bags.



Specialty Systems*

Unique products with critical advantages in specialty applications, from fine chemical filtration, to fully-enclosed systems, to advanced metal ion reduction solutions.



Specialty Products

► NanoSHIELD™ Hollow Fiber Series

Absolute rated, polypropylene, nylon or polyethylene hollow fiber membrane filter cartridges designed for critical applications in the high purity electronics industries.

► CUNO™ CTG-Klean Systems

A totally enclosed filtration system designed to isolate the product being filtered from the filter housing. Available with 3M Industrial filter cartridges, and size configurations is ideally suited for applications which reduce direct contact with contaminated filter, reduced system cleanup requirements and operator exposure.

► Activated Carbon

Activated carbon bed with integral polypropylene filtration inside a polyethylene shell for reduction of trace organics in industrial applications.

► Metal Ion Purifier

3M™ Metal Ion Purifiers are designed to reduce metal ions in high purity solvent systems to the sub 50 ppt level. Utilizing 3M's immobilized particle technology, which is comprised of either a strong acid cation exchange resin or a chelating ion exchange resin in a polyethylene matrix, 3M Metal Ion Purifiers provide effective, single pass reduction of metal ions from high purity resins and solvents, such as PGMEA, TMAH, BARC, and other lithography chemistries.



** Not all technologies may be available in your region. Please contact your local sales representative.*

Gas Transfer Membrane Contactors

In a compact design, 3M™ Liqui-Cel™ Membrane Contactors can add gases to or remove dissolved gases and bubbles from compatible liquid streams utilizing hollow fiber membrane technology.



3M™ Liqui-Cel™ Membrane Contactors

► EXF Series

Microporous polypropylene hollow fiber membrane contactors used to control dissolved gases in mid- to high-flow rate water streams. Designed to enhance fluid flow dynamics, contactors maximize membrane utilization to strip dissolved gases to ultralow levels in effectively designed systems.

► SP Series

Non-microporous, gas-permeable polyolefin hollow fiber membrane contactors commonly used to remove bubbles and dissolved gases from liquids with low surface tensions. Membrane characteristics enable degassing and debubbling of compatible solutions containing surfactants or organic solvents.

► MM Series

Our smallest degassing (or debubbling) contactors, MM Series pack a high membrane surface area into a small footprint for low-flow rate applications. Commonly used in benchtop, laboratory, and analytical applications, degassing with these small, point-of-use contactors can improve measurement reliability, reduce rework, and improve product quality.



Not all products may be available in every region. Please contact your local sales representative.

Filter Housings

Our line of filter housings, for use in filtration applications, provides users quality, ease of use, flexibility and economy in ASME: PED code and sanitary designs. From single cartridge housings to large multi-cartridge housings designed to handle flow rates in the thousands of cubic meters per hour, we provide solutions to meet even the most stringent process requirements.



3M™ Filter Housings – Single Cartridge

► CT Series Filter Housings

These stainless-steel, three-piece housings with ring nut closures are available in one-high or two-high configurations and lengths.

► ZW, IW and ZV Series

These all stainless steel, sanitary design single and multi-cartridges housings are available in T-style (ZS & IW) or in-line (ZV), and in a wide variety of sizes.

All vessels are available with full PED compliance.

3M™ Filter Housings – Multiple Cartridge

► DS & CH Series Filter Housings

These economical stainless-steel multi cartridge housings are available in a wide variety of sizes.

► ZW & IW Series

These all stainless steel, sanitary design multi-cartridge housings available in a variety of configurations.





3M™ Large Diameter Cartridge Filter Housings

▶ HF and HC Series Filter Housings

Single and multi housings are available in a variety of sizes to meet various flow capacities.

3M™ Zeta Plus™ Cartridge Filter Housings

▶ ZP & IP Housings

Sanitary design Zeta Plus housings in 8", 12" and 16" diameter, and a variety of configurations your application's needs.

3M™ Bag Filter Housings

▶ 3M™ ME Series Bag Housings

These economical stainless-steel single round and multi round bag housings are available with 3M DF or NB Series baskets.

Product data sheets are available for all 3M Filtration and Separation products. For additional information, please visit 3M.co.uk/FiltrationSeparation, 3M.co.uk/Liqui-Cel, or contact your local 3M Filtration and Separation representative.



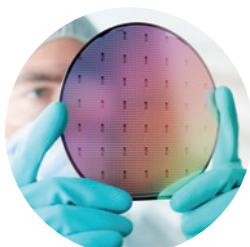
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Helping protect your products and equipment.

3M Filtration and Separation provides filtration solutions across a wide variety of markets and industries.



**Food and
Beverage**



Microelectronics



**Industrial Water
Systems**



**Ultrapure
Water**



Power Generation



**Waste Water
Treatment**



**Paints and
Coatings**



Inkjet Printing



**Upstream Oil and
Gas**



Refining



Chemicals



**Automotive
Assembly**



Metalworking



Utilities



**General
Manufacturing**



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► Find your filtration solution at
3M.co.uk/FiltrationSeparation

► Find your dissolved gas control
solution at **3M.co.uk/Liqui-Cel**.

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