

3M Purification

Industrial Filtration Solutions



Innovative Filtration Solutions

Quality. Consistency. Performance.

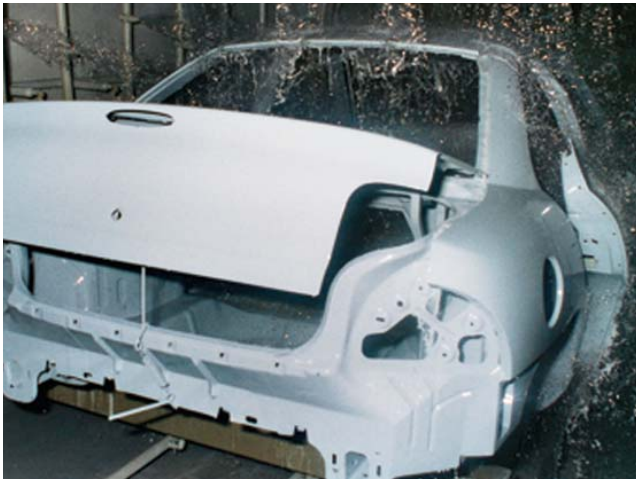
A complete line of filtration products from a single source

- High Performance Products
- Sustainable Designs
- Engineering and Technical Support
- User Friendly Features
- 3M Purification Support
- Air Filtration Cleaner Air Less Energy



3M Purification Filtration Technologies

3M Purification provides filtration and separation solutions for a wide range of industrial processes including:



Paint & Coating



Oil & Gas Processing



General Industrial



Petrochemical / Chemical

Whether the application is process water clarification, high purity water filtration for semiconductor manufacturing, fine ink pigment classification, or the removal of contaminants in petroleum, 3M Purification has the application knowledge and products to provide solutions to the most challenging of requirements. From cost effective, coarse filtration using filter bags, to the finest particle removal using membrane filters, customers depend on 3M Purification for filtration solutions.

Supporting 3M Purification's filtration offering is a dedicated multi-disciplinary team providing a vital link between 3M Purification's filtration knowledge base and customer needs. Using 3M Purification's extensive field and laboratory capabilities, this team is expertly equipped to identify filtration solutions using either the broad array of existing 3M Purification filter products or by working with Research & Development to design a custom solution for the application.

3M Purification is a wholly owned subsidiary of 3M Company. The combination of 3M's history of innovation with 3M Purification's filtration application knowledge provides for unmatched capabilities for customers' current and future filtration needs.

Depth Filter Cartridges

3M Purification offers a full line of cartridges in a cylindrical depth filter construction in various materials, configurations and grades designed to meet the application needs.

Nominal Rated:

- *Micro-Klean™ RB Series Filters*: Graded-density resin bonded cartridges ideal for coatings and general Industrial applications.
- *Micro-Klean™ RT Series Filters*: Rigid polypropylene cartridges providing cost effective filtration for water based and other industrial fluid applications.
- *Micro-Klean™ D Series Filters*: Blanket wrapped cartridges incorporating a unique filter media blanket in a wound support structure.
- *Micro-Klean™ CS Series Filters*: String wound cartridges using single strand winding for uniform performance. Available with stainless steel cores and fibreglass media for high temperature application.



Absolute Rated:

- *Betapure™ PK Series Filters*: Absolute rated resin bonded cartridges designed specifically for Oil & Gas applications.
- *Betapure™ AU Series Filters*: Rigid cartridges manufactured from thermally bonded polyolefin fibers. An exceptional classification filter for coatings and specialty chemical applications.
- *Betapure™ NT-T Series Filters*: Polypropylene cartridges featuring innovative design resulting in superior flow characteristics.

Surface Filter Cartridges

For those applications where use of surface filter cartridges is advantageous, 3M Purification offers an extensive line of absolute rated cartridges in various materials of construction, configurations and grades designed to meet the applications needs.

Polypropylene:

- *Betafine™ DP Series Filters*: All Polypropylene pleated cartridges providing cost effective absolute rated filtration for demanding applications.

Membrane:

- *LifeAssure™ PFS Series Filters*: PTFE cartridges offering compatibility with aggressive fluids. Also designed for vent and process gas filtration.



Charge Modified Filter Cartridges

3M Purification offers a full line of charge modified depth cartridges (Zeta Plus™ Series) composed of cellulose and diatomaceous earth materials, trapping contaminants smaller than the rated pore size via electrokinetic adsorption.

- *Zeta Plus™ H Series Filters*: Designed for general industrial and utility applications requiring efficient filtration in the 1 - 20µm range.
- *Zeta Plus™ Activated Carbon Series Filters*: Carbon containing cartridges capable of removing trace organics and colour removal without the cleanup problems associated with bulk activated carbon.
- *Zeta Plus™ U & UW Utility Series*: Designed for removal of particle contaminants and moisture from dielectric oils. Commonly used in the power generation industry.



Large Diameter Cartridges, Bag Filters and Specialty Systems

3M Purification offers the following large diameter cartridges, bag filters and specialty products.



Large Diameter Cartridge Systems:

- **3M™ 740 Series Filters:** 6.5" diameter, 30" & 40" length cartridges containing high efficiency polypropylene or polyester microfibre media in a unique radial pleat configuration. High dirt holding capabilities designed for use in high contaminant applications (amine, coolant...). Utilises specially designed housings available in a variety of sizes, materials and configurations.
- **3M™ High Flow Series Filters:** 6.5" diameter cartridges containing high efficiency polypropylene microfibre media in a unique radial pleat configuration. Available in 10", 40" and 60" lengths. High Flow capability (up to 1890 lpm for 60" cartridge) makes it ideal for large flow, low contaminant applications (pre-RO, process water...). Utilises specially designed housings available in a variety of sizes, materials and configurations. High flow cartridge capability reduces required housing size for a given flow rate optimising housing foot print and capital cost.



Bag Products

- **3M™ Series NB Filter Bags:** Polypropylene & Polyester felt and Nylon Monofilament nominally rated filter bags providing cost effective filtration for industrial applications. Available with metal ring or plastic collars.
- **3M™ DF Series Filters:** Graded porosity polypropylene & polyester felt media in a unique two cylinder design providing for higher dirt holding capacities and up to five times the life of conventional nominally rated bags. Easily retrofitable for use in bag housing systems.
- **3M™ 100 Series Filters:** Single layer high particle removal efficiency polypropylene microfibre media in a bag configuration. Ideal for oil contamination reduction.
- **3M™ 500 Series Filters:** Multi layer high efficiency polypropylene microfibre media in a bag configuration. High dirt holding capacity allows much longer life than conventional bags.



Specialty Products

- **Cuno™ CTG-Klean Systems:** Sealed filter pack system that eliminates direct contact of contaminated filter reducing system clean-up requirements and operator exposure. Available in many filter types and sizes.
- **Activated Carbon:** Polyethylene cartridges containing a granulated activated carbon bed for removal of trace organics in industrial applications.
- **Carbon Canisters:** Activated carbon canister is designed for use in natural gas processing contact solvents, such as amine, glycol, etc. as a foam control tool.



Metal Cartridges

For those applications where use of reusable metal based cartridge is preferred, 3M Purification offers the below products:

- *Cuno™ EF Series Self Cleaning Metal Filters:* Metal edge filters capable of filtering highly viscous fluids. Spacing between two metal surfaces determines the degree of filtration. Typical applications include lubricating oils, fuel oils, hydraulic fluids and greases. Cuno™ EF series self cleaning metal filters cleaned by turning a handle, resulting in solids reduction and full flow restoration. Larger capacity Cuno™ EF series self cleaning metal filters available with self cleaning capabilities. Two-stage filtration version of Cuno™ EF series self cleaning metal filters available capable of reducing particles down to 37 micron (nominal).
- *Cuno™ Metal Screen Filters :* Stainless steel screen mesh elements ideal for corrosive fluids and other fluids that cannot be filtered by fibre type media.
- *Cuno™ Sintered Metal Filters :* Stainless steel filter elements formed from porous sheets of sintered powdered metal, ideal for high temperature liquids, gases and corrosive fluids.
- *Metal Strainers:* A wide range of strainers manufactured from either stainless / carbon steel. Range includes simplex, duplex basket, auto and manual backwashing, cone / temporary, bucket, 'T' and 'Y' type strainers. Ideal for coarse or low running cost applications. A cast range of strainers are available from 25mm to 80mm in various materials including stainless steel, aluminium, bronze and cast iron.



Industrial Filter Housings

3M Purification carries a complete line of filter housings for use in industrial applications offering superior quality, ease of use, flexibility and economy. From single cartridge housings to large multi cartridge housings designed to handle large flow rates and designed to AS1210, 3M Purification provides housings capable of meeting even the most stringent process requirements.



Bag Housings

- *3M™ BHT Series Bag Housings:* AS1210 code design and stainless steel single and multiple round bag housings available in over the top inlet connection.
- *3M™ DF Series Bag housings:* AS1210 code design stainless steel single and multiple round housings for use with innovative DuoFLO elements.

Filter Housings - Single Cartridge:

- *3M™ 1B Series Filter Housings:* All metal three piece single cartridge housings featuring centrepost construction.
- *3M™ 1H Series Filter Housings:* An all-welded, high pressure design single cartridge housing with bolt-on type head suitable for compressed air & gas applications as well as liquids.
- *3M™ CT Series Filter Housings:* Stainless steel three piece single cartridge housings with ring nut closure available in 1 and 2 high configurations.
- Model AP11 or AP12: Plastic housings available in 1 and 2 high as well as jumbo style for high flow rates. Offering broad chemical compatibility.



Filter Housings - Multi Cartridge:

- *3M™ 12ZP & 16ZP Series Filter Housings:* All metal housings for use with Zeta Plus cartridges available in 1 to 4 high configurations wide range of sizes. Available as separate units or skid mounted for mobile use (ideal for transformer oil filtration). Applications include transformer oil filtration.
- *3M™ DC Series Filter Housings:* Economical stainless steel multi cartridge housings available in a wide variety of sizes. Available in V band or swing bolt closure. Whilst all DC's are designed to AS1210 the swing bolt designed vessels are registered with work cover authority.
- *3M™ SL Series Filter Housings:* All metal housing designed to AS1210. Available in standard model or customised options. Materials can be stainless steel, carbon steel, rubber lined and duplex stainless steel.



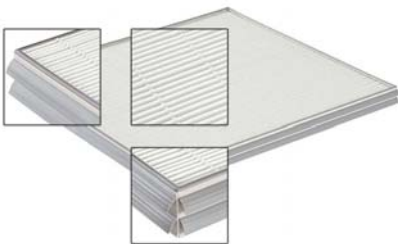
HVAC - Cleaner Air Less Energy

The problem with certain kinds of conventional air filters, is that depending on the filter type they can have high initial differential pressure or can block too much airflow as particles become trapped in the filter particularly on the surface of the media. The end result is that airflow through the equipment can be severely restricted. To maintain the required airflow, the filters may require frequent replacement, and /or the equipment may require frequent cleaning or other maintenance.

3M Purification has a range of air filtration media referred to as Filtrete which may offer an ideal alternative in applications where regular filter replacement is difficult or impractical, but where low airflow resistance is important.

The Filtrete media was developed using innovative 3M technologies. Filtrete's media has an open channel construction which offers low initial airflow resistance, while its unique microstructure and electrostatic charge provides effective particle capture and retention. In certain applications, this may translate into fewer filter changeouts...reduced coil cleaning...and /or reduced maintenance costs.

Together with these benefits Filtrete can offer immediate energy savings by reducing your HVAC fan's energy to overcome airflow resistance through your existing filters. The energy savings by reducing airflow resistance by 0.5" WG (125Pa) in a building of 1 million square feet of office space and at an electricity cost of say 12 cents/KW Hr and operating 3400 hours /year will translate into electrical savings of approximately \$52,000 /year plus a reduced carbon footprint.



Filtrete - Commercial Air Filtration

The unique microstructure and electrostatic charge construction of 3M Filtrete HVAC media offers approximately 58% lower initial airflow resistance as compared to conventional HVAC media which translates into significant energy savings plus a reduction in carbon footprint. Together with these benefits are fewer changeouts, reduced maintenance and waste disposal costs.

3M Purification Sustainability

3M Purification have a long standing commitment to sustainable development through environmental protection, social responsibility and economic progress. To us, that means meeting the needs of society today, while respecting the ability of future generations to meet their needs. We recognise that the company's long term success springs from adopting and implementing the principles of sustainable development: stewardship to the environment, contributions to society, and to the creation of economic value and worth. At the same time, we recognise that only by continuing to be a viable and successful enterprise can we continue to be a positive contributor to sustainable development.

3M Purification Corporate Values

- Act with uncompromising honesty and integrity in everything we do.
- Satisfy our customers with innovative technology and superior quality, value and service.
- Provide our investors an attractive return through sustainable, global growth.
- Respect our social and physical environment around the world.
- Value and develop our employees' diverse talents, initiative and leadership.
- Earn the trust and admiration of all those associated with 3M worldwide.



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