



**Graver Technologies**

FILTRATION | SEPARATION | PURIFICATION

# LIQUID PROCESS FILTERS

— PRODUCT OFFERING —

## Discover the Clear Choice

Graver Technologies has been designing and producing superior filtration, separation and purification solutions for more than 100 years. Our liquid process filters offer high quality, high performance and cost effective solutions for common industrial, high purity water and other critical process streams in food and beverage, healthcare, microelectronics and industrial applications.

## Industry Leading Quality

- Graver's quality system has been certified to meet ISO 9001:2015 standards.
- Graver filter cartridges are manufactured using current Good Manufacturing Practices.
- Some of the industry's best lead times, with 5–7 working days for most products.
- Complete traceability of membrane filters is ensured by the engraving of lot numbers and pore size identification to assist customer installation accuracy.
- Membrane filters are flushed, tested and packaged in an ISO Class 7 cleanroom.

## DEPTH FILTERS

### CMBF

Nominally rated melt blown polypropylene depth filters with the unique Crystal Core to prevent collapse even at elevated temperatures. The robust media construction provides dependable, economic filtration in pore sizes from 1 to 75  $\mu\text{m}$ .

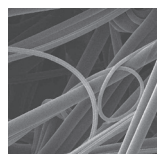
### MBC™

An economical, nominally rated disposable filter element constructed of 100% polypropylene media for chemical compatibility with a variety of process fluids. The molded core provides among the highest pressure ratings available in melt blown polypropylene products.

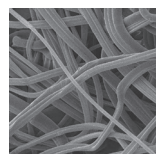
### Stratum®

**Stratum A Series** melt blown depth filters deliver 99.9% efficiency from 0.3 to 100 microns for the most demanding applications. By utilizing multiple zones of ultra fine fibers and controlled thermal bonding, the Stratum A series retains captured contaminant even at higher differential pressures.

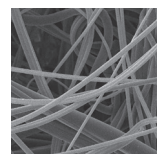
**Stratum C** melt blown filters deliver exceptional performance from 0.5 to 100 microns in precise 90% removal efficiencies. With a multi-zoned construction, true clarifying filtration is achieved with no unloading of captured contaminant in applications requiring precise and repeatable depth filtration.



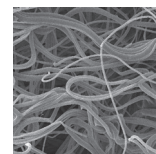
Outer prefilter zone



Inner prefilter zone



Final prefilter zone



Final filtration zone

## PLEATED MICROFIBER FILTERS

### PMC™

Cost-effective, pleated polypropylene filters with nominal ratings from 0.25 to 50 µm. The fixed pore structure prevents dirt unloading at elevated pressures, and the pleated element offers an economical alternative to non-pleated filters.

### PMA™

Economical, absolute efficiency filtration in pore sizes ranging from 0.2 to 100 µm. The all-polypropylene construction incorporates a non-migrating pleated media.

### PME

Designed for cost driven applications, this all polypropylene filter delivers absolute efficiency in a broad range of particle sizes. It is suitable for a wide range of applications and carries all the needed industry certifications to satisfy most critical requirements.

### QMC™

Pleated filters manufactured with multiple layers of graded density, melt-blown polypropylene. Nominal ratings of 0.1 to 10 µm provide outstanding protection for final membrane filters.

### QMA™

0.2 to 10 micron absolute rated, high-surface area pleated polypropylene filter cartridges provide low initial pressure drop, high dirt holding capacity and a long, consistent service life.

### QSL™

Incorporating a polypropylene microfiber media over a polyethersulfone membrane, the serial layered cartridge design offers excellent retention characteristics and extended life to provide long lasting protection of downstream membrane filters.

### QXL™

Formulated with multiple layers of microfiber media to provide absolute rated efficiency from 0.45 to 40 microns. This innovative pleated/depth design combines the high surface area of pleated filters with a graded pore structure.

### GFC™

The borosilicate microfiberglass media with a natural positive charge exhibits exceptionally high dirt holding capacity. Available in nominal ratings from 0.2 to 30 µm with thermally bonded polypropylene components.

### GFP™

Utilizing the same media as in the GFC, the product has polyester support components for those applications requiring temperature ranges up to 230°F (110°C).

### GSS

High efficiency, economical filter element is constructed of pleated borosilicate microfiberglass media with a 304 stainless steel core and end caps. The construction provides excellent thermal tolerance for higher temperature applications in both liquids and gases.

### High Flow

Large geometry to handle higher flows with fewer filter elements and excellent dirt holding capacity, extending the time between filter changeouts. Available in multiple configurations to retrofit most popular commercially available designs.

### QCR™

The Cyst Reduction filter contains an absolute 0.8 and 1 micron filter media designed to meet and exceed the minimum log reduction credit of >3.0 for cysts based on the test requirements of the Long term 2 Enhanced Surface Water Treatment Rule (LT2).

### CelluTEC®

This Cellulosic filter provides enhanced filtration with a pleated cellulosic and PP media combined in a dual layer cartridge. It come in standard and high flow cartridges sizes for easy retrofitting. The DE impregnated cellulosic help trap impurities.

## SPECIALTY FILTERS

### RTEC™ G

Featuring a microfiberglass/phenolic resin construction that produces an extremely rigid pore structure, allowing the filter to withstand extremes of viscosity and temperature without compression or collapse.

### TPE

Made from either titanium or 316 stainless steel powder that is sintered to form a rugged, fixed pore structure. The filters are made to withstand temperature extremes, high pressures and repeated cleaning/backwash cycles.

## MEMBRANE FILTERS

### Citadel®

Pleated PTFE membrane cartridges with PFA structural components to provide excellent chemical and temperature resistance for aggressive chemical applications. Exhibits outstanding particle cleanliness and very low metal extractables.

### ZTEC™ P

Double layer polyethersulfone membrane cartridges fully validated for complete bacterial retention at 0.2 micron to yield product sterility by ASTM 838-05 for the most critical healthcare applications.

### ZTEC B

Membrane cartridge filters constructed of hydrophilic, asymmetric polyethersulfone membrane and polypropylene components. ZTEC-B filters have been validated for the removal of microorganisms.

### ZTEC E

ZTEC E microelectronics grade cartridges represent Graver's latest development in ultrapure water filtration technology. The cartridges exhibit rapid rinse-up to 18 MΩ-cm resistivity and single digit ppb levels of TOC.

### ZTEC WB

Utilizes a special polyethersulfone membrane to provide consistent removal of spoilage organisms. The product offers excellent retention efficiency and extended on-stream life making it an ideal filter for the clarification of beer, wine and bottled water.

### ZTEC G

General grade pleated filter element is constructed of absolute rated, hydrophilic, asymmetric polyethersulfone membrane with extended surface area to allow for a high system flow rate.

### TefTEC™

Naturally hydrophobic expanded PTFE membrane filters designed for vent and gas applications. With over 8.5 square feet of filtration area, TefTEC filters provide outstanding flow rates. TefTEC filters are 100% flushed and integrity tested in a cleanroom environment.

### TefTEC P

Naturally hydrophobic e-PTFE Membrane cartridges validated for complete bacterial retention to yield product sterility in biopharmaceutical final filtration applications. The sterilizing grade PTFE membrane cartridges are well suited for compressed air applications, fermentation feed air and tank vent applications where absolute microbial retention is critical.

### TefTEC V

The economical PTFE membrane cartridge filter provides superior hydrophobicity as compared to polypropylene filters commonly used in utility and tank vent applications. TefTEC V has been demonstrated to produce sterile air utilizing a bacterial aerosol challenge.

### WaterTEC™

Constructed of absolute rated, hydrophilic, asymmetric polyethersulfone membrane and polypropylene components. The filter is designed for overall filtration economy and provides excellent flow rates and throughputs.

## FILTER HOUSINGS

Graver Technologies offers a full line of stainless steel cartridge vessels to accommodate the breadth of product offered, including sanitary, high purity, economy industrial as well as ASME and CE code stamped vessels.

## INDUSTRIAL AIR & GAS FILTERS

Graver Technologies also offers a full line of industrial air and gas filters. Our designs include custom, OEM HEPA filters, air intake filters, compressed air and gas filters and filter/separators, vacuum and vacuum exhaust filters as well as filter vessel meeting both ASME Code & PED certifications.



## SUPERIOR PRODUCTS & GLOBAL REACH

Whether your business is around the corner or around the world, Graver Technologies can support you with superior products and services. Our ion exchange, adsorbent, filtration, and membrane products deliver exceptional performance in some of the harshest process environments in North America, Europe, Asia, the Pacific Rim, South America, and Africa.

Graver Technologies is a member of The Marmon Group (a Berkshire Hathaway Company), an international group with more than \$12 billion in annual sales. Around the corner or around the world, Graver Technologies is a fast growing company with the technical resources and financial strength that make us the perfect partner for your business.



## GLOBAL PRESENCE

Exporting on average more than 25% of our products, Graver Technologies is recognized worldwide. Our global presence extends from North and South America, across Europe and into Asia—including the Pacific Rim, Japan, and Australia. We are headquartered in Glasgow, Delaware, with additional manufacturing and marketing facilities in Newark, New Jersey; Honeoye Falls, New York; Singapore and Shanghai, China.

## REGISTRATIONS & CERTIFICATIONS

Graver has a number of applicable registrations and certifications to ensure we develop and manufacture products to meet the most rigorous global standards, including:

- ISO 9001
- 10CFR50 App.B — Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
- ASME Section VIII, Division I
- PED 2014/68/EU
- NSF International
- EU 1935/2004
- Halal and Kosher certified

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