

# Filtration Solutions for High Purity Water

As consumer product quality and health care regulations continue to tighten, so does the demand for manufacturers to produce a cleaner, higher quality product. As a significant ingredient, power source or cleansing agent in many manufacturing processes, pure and ultrapure water are becoming a substantial part of the equation for success.

The majority of pure and ultrapure water (UPW) systems must meet strict regulations of industry-specific governing bodies, such as the FDA, EPA, USP, or EU. Each of these organizations set guidelines for the production and usage of pure and ultrapure water within their respective industries. However, regardless of who sets the standard, micro-filtration is always a crucial part of the formula.

## DID YOU KNOW....

### ULTRAPURE WATER MARKET SIZE

- Ultrapure water market size forecast to reach \$11 billion by the year 2026

### FACTS

- High purity water is an essential manufacturing component to the global distribution of the COVID-19 vaccines
- Semiconductor plants use ultra-pure water as a cleaning agent
- High purity water is a critical component for delivering high-quality dialysis therapies

### INDUSTRIES USING ULTRAPURE WATER

- High purity water systems
- Active pharmaceutical ingredients
- Fine chemicals
- Wine, beer & spirits
- Blood & serum
- Cell culture media & diagnostics
- Semiconductor

## NEW PRODUCT

### Ideal For Ultrapure Water Processes

#### GSTL-Series

GSTL-Series Single-Sanitary Cartridge Liquid Filter Vessels are suited for applications involving chemical systems, ultrapure water processes and critical applications demanding certified sanitary standards.

Our Sanitary vessels are designed, built and certified to inhibit the growth of bacteria with focus on easy drainage and optimal cleaning performance.

Continuous or point-of-use service, as well as small batch processing applications are ensured reliable and highly secure seal with our "V" style clamp fittings. Vessels are available in 316 stainless steel, and rated for 150psi service.

Electropolished head and elbows plus a mirror polished bowl ensures optimal cleanability in critical areas while maintaining cost-effectiveness.



Contact our  
Vessel Product Manager today!  
A number of options are available  
in the GSTL-Series to  
optimize your application.

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## High Purity Water Filtration Process Optimization

### GSTL - Series Stages: 4,6,7

Global Filter's stainless steel sanitary vessels are an ideal filtration solution in the prevention of microbial contaminants

### Stage: 1, 2 & 3

Protects downstream equipment

### Stage: 4

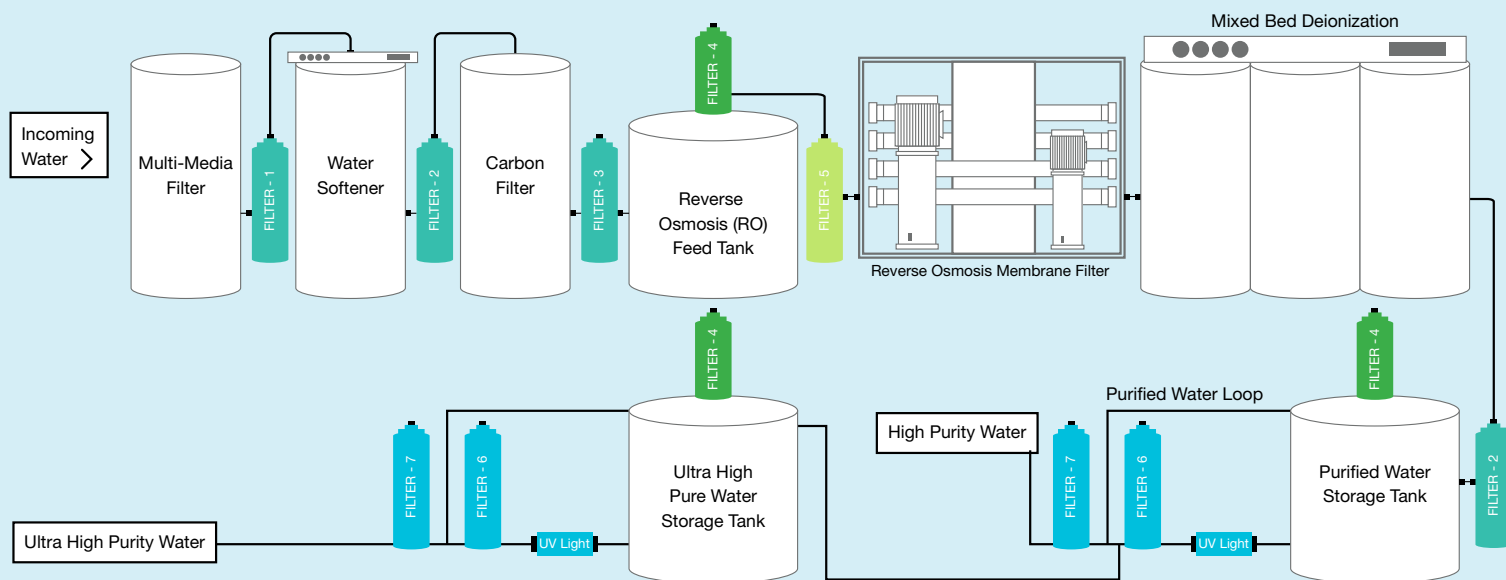
Prevents particulate and moisture from contaminating tanks

### Stage: 5

Protects RO Membranes

### Stage: 6 & 7

Removes microbial contaminants



### Sediment, Particulate & Trap Filter Stages: 1, 2, 3

#### Pleated Polypropylene

PP, PPE, HFPP Series

#### Pleated Microglass

FG, FGE, HFFG Series

#### Polypropylene Meltblown

GWTF, GCTB, GATB Series

Protecting the activated carbon, deionization tanks, and the RO or Ion Exchange Units (IEU) is critical. Surface or groundwater is typically treated and softened before filtration with a filter that removes particles larger than 10 microns, then filtered down to one to five microns filter to protect downstream equipment.

### Tank Filter Stages: 4

#### PTFE

#### (Hydrophobic) Membrane

GGPTFE Series (General)  
EPTFE Series (Electronics)  
BRPTFE Series (Bio-burden Reduction)  
PPTFE Series (Sterilizing)

#### Polysulfone

#### (Hydrophobic) Membrane

PSH Series

Storage and fill tank vent filtration allows for bacteria and particulate-free air to pass during filling and evacuation, protecting the storage tank and its contents from contamination. This filter is typically rated at 0.2 micron and is hydrophobic and bacterial retentive, which prevents moisture airborne contaminants from entering the tank.

### Pre-Filtration Filter Stages: 5

#### Pleated Polypropylene

PP, PPE, HFPP Series

#### Pleated Microglass

FG, FGE, HFFG Series

Removes fine particles and suspended organic matter and serves as pre-filtration to the RO and deionization system. If water has IEU treatment, a 5-micron filter may be installed between the IEU and the water storage tank to prevent fractured beads from entering.

### Bio-Burden/Polishing Filter Stages: 6 & 7

#### Polyethersulfone

#### (Hydrophilic) Membrane

GEPES Series (Electronics)  
GFPES Series (Food & Beverage)  
BRPES Series (Bio-Burden Reduction)  
PPES Series (Pharmaceutical)

#### Nylon 6,6 membrane

GFHNY/GFHNY+ Series  
(Food & Beverage)

Reduces and removes virtually all microorganisms and contaminants down to 0.2 micron as final filtration to high purity applications and as further polishing in downstream ultra high purity water systems.

### REVERSE OSMOSIS

Various UPW applications require water to be disinfected/sterilized by removing microbial contaminants. UPW systems often require reverse osmosis for the filtration process. These systems typically include stored water circulated at a high temperatures to inhibit bacterial growth. Facility's house water treatment equipment in a controlled environment to prevent cross contamination from outside elements.

### Good Manufacturing Practices

(GMP) vary between users, but as part of these processes, specifications for water quality are predetermined. These parameters include total organic carbons (TOC), total dissolved solids (TDS), and maximum levels of ions/extractives (measured as low as 'parts per billion'). Maintaining these specifications helps to monitor the high purity water system and allows for adjustments to help sustain final product quality.



# Industry Best Net Value

Global Filter designs innovative and efficient filtration solutions. Our high-quality filters combined with our technical expertise allow us to offer you solutions that take the guess work out of your process. Our solutions optimize the service life of filters, reducing waste to positively impact the environment, while increasing your productivity. Consistent, cost-effective and high-quality filters allow you to achieve a consistent, high-quality product while adding to your bottom line.

## Our Filtration Solutions Are:



### Safer

Our products meet US and EU standards for purity and safe use with food and beverages



### Healthier

We develop products that improve the quality of life for humans and animals



### More Productive

Our solutions allow you to produce more product at a lower cost, improving your bottom line

## Advantages To Working With Global Filter:

- Access to an extensive network of filtration professionals from all over the world who have experience with thousands of unique processes and applications
- Manufacturing facilities in North America, Europe and Japan
- Products designed to maximize your productivity, product quality and bottom line
- Built to grow with you and help navigate the challenges and changing landscapes of your industry
- Technical support from initial conversations to implementation and beyond
- Shortest lead times and industry-leading value

