



USFilter

SERVICE DEIONIZATION

GUARANTEED QUALITY

AT AN ECONOMICAL PRICE

Service Deionization (SDI) from USFilter is a safe and economical way for you to obtain consistent, high-purity water from potable feed water. Our reliable SDI systems consist of activated carbon and ion exchange resin contained in portable tanks connected directly to your tap water supply.

*With SDI systems,
capital investment
ardous chemicals.
of factory-trained*



*there is no major
or handling of haz-
Our large network
local service repre-
sentatives will deliver tanks, install and maintain the
equipment. With USFilter you get the highest quality, most
economical product, backed by the largest service network in the
industry. We will custom-design and configure an SDI system
to meet your water purity requirements, flow rates and budget.*

SDI Application Benefits

	Reduced Organics	Megohm Quality	Silica Reduction	Fewer Particles	High Capacity
Pharmaceutical Biotech	✓	✓			✓
Microelectronics	✓	✓	✓	✓	✓
General Industry		✓		✓	✓
Dialysis	✓	✓			✓
Rinsing	✓	✓	✓	✓	✓
Laboratory	✓	✓	✓	✓	✓

DEPENDABLE AND RELIABLE



No matter what purity water you need, USFilter can provide the solution.

Unlike permanent-bed deionizers, Service Deionization (SDI) requires no system installation, chemical handling, waste neutralization or maintenance by you. When the resins in the tanks exhaust, our local service representatives remove and replace the tanks with freshly regenerated tanks. You have a constant supply of high-purity water and no chemicals are brought into your facility.

We Put the “Service” in Service Deionization

We understand how critical it is to have a reliable and continuous supply of high-purity water. USFilter has been supplying companies like yours with high-quality SDI systems for years. With the largest

local service network in the industry, we guarantee fast, first-rate service wherever and whenever you need it. And, with our 24-hour, toll-free customer service hotline and team of technical support professionals, help is just a phone call away.

SDI is the answer if you...

- Want a consistent source of high-purity water?
- Need a system designed just for you?
- Use a small amount of water and don't want to purchase a permanent system?
- Have limited maintenance resources?
- Have a limited capital equipment or operating budget?
- Want to eliminate handling regeneration chemicals and hazardous waste neutralization?
- Want to increase or decrease the size of your system as water requirements change?
- Have a temporary need for deionized water?

We offer a wide range of systems and resin types for general manufacturing and industrial special grades of resin for critical applications such as dialysis, medical, biopharmaceuticals and pharmaceuticals.

Activated Carbon

These units remove chlorine, chloramines and dissolved organic contaminants. Each replacement carbon unit contains virgin carbon to assure maximum water quality and service life of the bed. No reactivated carbon is ever used in USFilter carbon units.

Maximum Operating Parameters	
Operating Conditions:	
0.25 - 3.6 ft ³	80 psig/95°F
12 - 60 ft ³	100 psig/100°F
Turbidity	5 NTU
Color	5 units
Organics	3 ppm
Manganese & Iron	0.3 ppm
Free Chlorine	0.2 ppm

Cation Deionizers

Cation resins remove positively charged dissolved ionic contaminants such as calcium, sodium, magnesium, potassium, iron and manganese. The cation resins used are very

durable to provide stability against osmotic, thermal and impact shock.

Anion Deionizers

Anion resins remove negatively charged dissolved ionic contaminants such as carbonate, bicarbonates, sulfates, chlorides, nitrates and silica. The anion resins used offer stability against osmotic, thermal and impact shock. A variety of anion resins are available suitable for any water application.

Mixed Bed Deionizers

For higher quality water with a more neutral pH than separate bed systems, as well as enhanced silica and CO₂ removal mixed bed deionizers are recommended. USFilter units produce the quality of water required for any application, up to 18.3 megohm-

monitors immediately alert users when resin tanks need to be changed.

Ultra Mixed Bed Deionizers

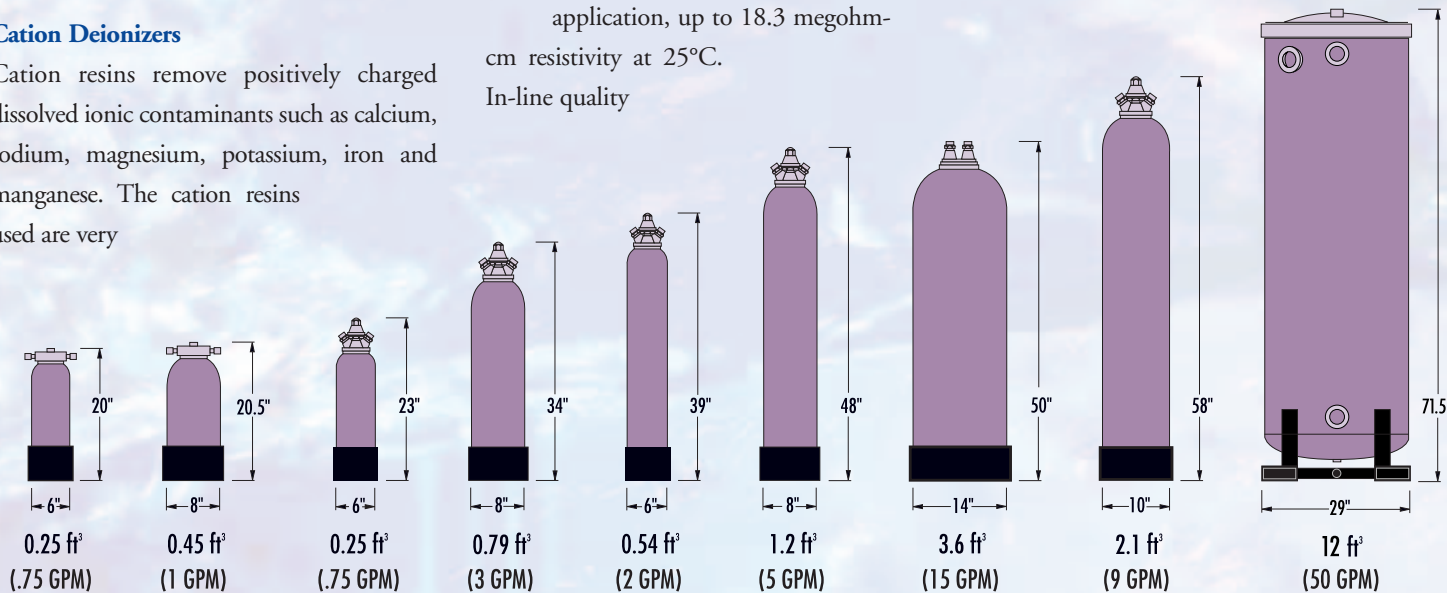
Ultra mixed beds provide superior silica removal and significantly lower TOC levels. They are ideal for microelectronics and pharmaceutical applications requiring stricter control of critical contaminants.

Quality System Requirements (QSR) Mixed Bed Deionizers

Mixed bed deionizers are specifically processed under QSR requirements in an FDA registered facility as a 510 k medical device for hemodialysis and ultra pure laboratory applications. These resins are controlled for not only ionic contaminate

cm resistivity at 25°C.

In-line quality



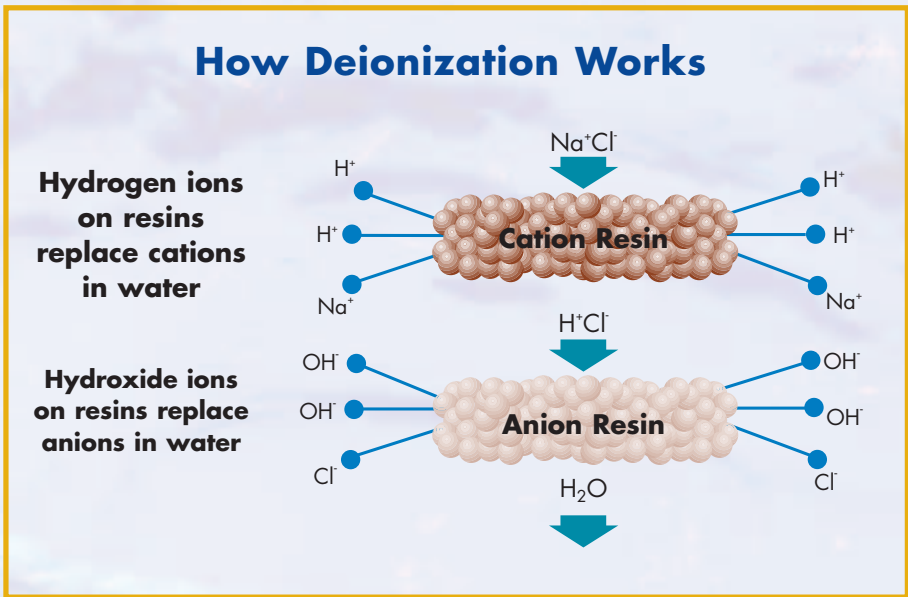
We offer activated carbon units and deionizers in flow rates from 0.1 gpm to 50 gpm.

Industrial rinsing, as well as pharmaceutical and microelectronics.

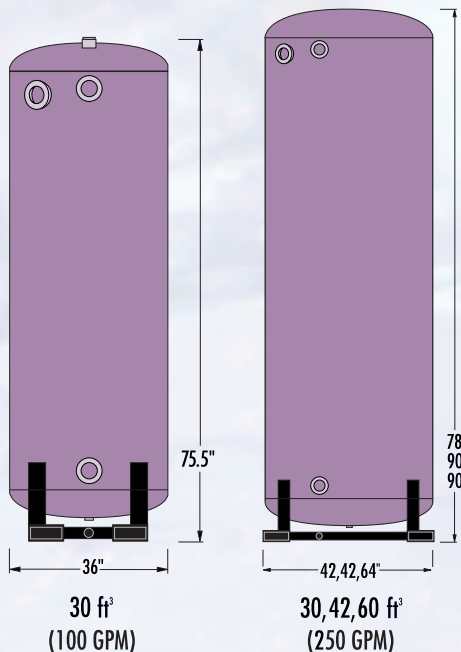
removal but also for reduced bacterial and endotoxin limitations.

Scavenging Resins

With extra large internal surface areas, the microporous scavenging resins provide high adsorption of dissolved and undissolved organic contaminants. The colloidal scavenging resins remove inorganic and organic anions. They efficiently remove colloids. Both types of resins are extremely resistant to organic fouling.



Deionization (DI) is one of the most efficient processes for removing dissolved ionic minerals and salts, as well as some dissolved organics, from water.



over 250 gpm or more.

Conductivity and Resistivity

(CaCO₃ solutions at 25°C)

Conductivity (micromhos-cm)	Resistivity (ohms-cm)	Dissolved Solids (parts per million) (as CaCO ₃)	Grains/Gallon (as CaCO ₃)
0.056	18,000,000	0.0277	0.00164
0.063	16,000,000	0.0313	0.00181
0.072	14,000,000	0.0357	0.00211
0.084	12,000,000	0.0417	0.00240
0.100	10,000,000	0.0500	0.00292
0.125	8,000,000	0.0625	0.00368
0.167	6,000,000	0.0833	0.00485
0.250	4,000,000	0.125	0.00731
0.500	2,000,000	0.250	0.0146
1.00	1,000,000	0.500	0.0292
1.25	800,000	0.625	0.0368
1.67	600,000	0.833	0.0485
2.00	500,000	1.00	0.0585
2.50	400,000	1.25	0.0731
5.00	200,000	2.50	0.146
10.0	100,000	5.00	0.292
20.0	50,000	10.0	0.585

CONVERSIONS

<p>Resistivity/Conductivity</p> $\text{ohm-cm} = \frac{1}{\text{mho/cm}} = \frac{1}{\text{Siemens/cm}}$	<p>Total Dissolved Solids</p> <p>1 grain per gallon = 17.1 parts per million (ppm)</p> <p>1 part per million ≈ 1 milligram per liter (mg/l)</p>
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A TOTAL COMMITMENT TO QUALITY CONTROL

PROPER REGENERATION IS
CRITICAL FOR OPTIMUM PERFORMANCE



At USFilter, there are no shortcuts on quality. Proper regeneration is critical for optimum performance, exchange capacity, total volume output and low operating cost. Our quality control specialists carefully pretest, then select only resin lots that meet our stringent requirements, assuring you the highest quality water and maximum performance from each regenerated deionizer. For critical hemodialysis applications our SDI systems are regenerated in FDA registered facilities in accordance with QSR/GMP (Quality System Regulations/Good Manufacturing Practices) requirements as well as meeting all Health Canada medical device regulations.

Quality Tested Before it Reaches You

Each regenerated service unit is tested for pressure integrity and product water quality before it is installed in your plant.

Quality Control

Incoming QC: Raw materials must meet quality specifications.

In-Process QC: Each component has its own operating criteria, and the entire process is monitored.

Final Product QC: Materials are double-checked for quality with results recorded in the batch record.

Sanitization

Each service unit is chemically sanitized before refilling.

Document Control

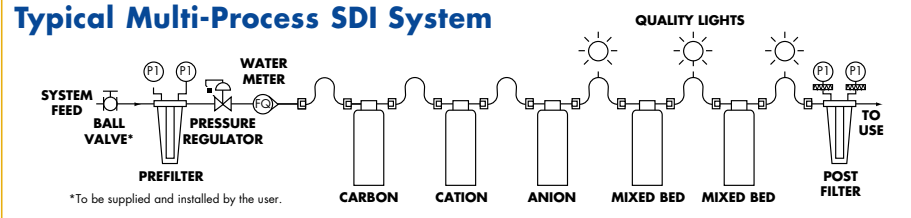
We have a comprehensive document control system. No process changes are made without proper notification and approval.

Tank Traceability

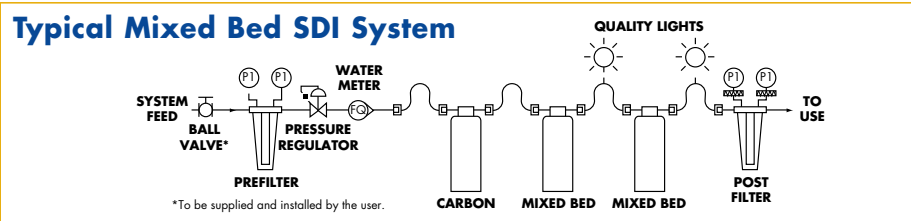
The serial number of each service unit is recorded on the production control log, so total traceability is ensured.

YOU CAN DEPEND ON OUR SERVICE PROFESSIONALS FOR:

- Emergency Service
- Preventive Maintenance
- Back-up Systems
- Field Engineering and Evaluation
- System Installations and Upgrades
- Water Sampling and Analysis
- Mobile Water Treatment
- Turn-key Projects
- Resin Regeneration
- Membrane Cleaning and Regeneration
- Membrane Replacement
- Loop Piping Sanitization
- Custom Resin Processing
- Troubleshooting



Where water quality greater than 1 megohm-cm is required but with low water volumes, a system commonly consists of a carbon tank followed by two mixed bed tanks.



When the product water is used for applications requiring less than 1 megohm-cm quality water, excluding dialysis applications, a typical system includes a carbon tank followed by a cation and anion tank. No matter what your water needs, we can create the ideal system.

QUALITY ACCESSORIES AND SPARE PARTS:

- Ion Exchange Resins
- Filter Media
- RO, NF and UF Membranes
- Disposable Cartridge Filters
- Filter Housings
- Carbon Filters
- Resistivity and Conductivity Monitors
- Multimedia Filters
- Storage Tanks
- Lab System Replacement Cartridges
- UV Lamps
- pH and Flow Meters
- Chemical Feed Systems
- Pumps
- Carbon
- and more...

Customized to Meet Your Water

Quality and Quantity Requirements

We work with you to determine what system configuration best suits your current and future needs. Flexibility in design sets our service deionization systems (SDI) apart from other deionization options. The components for your SDI system will be selected based on your feedwater quality, flow rate and product water quality requirements. For water quality greater than 1 megohm-cm, where large volumes of water are required, an SDI system typically includes a carbon tank followed by cation, anion and two mixed-bed tanks in series.

filter cartridges, membranes, parts and accessories. USFilter offers a wide variety of accessories for SDI systems and maintains the industry's largest inventories of spare parts for ours and competitor systems. We can maintain your system with a comprehensive service contract. Our products and services will keep you up and running.



Stainless steel filter housings.

We understand that keeping your water systems running at peak performance requires the highest quality replacement