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GE Infrastructure
Water & Process Technologies
Pharmaceutical Industry

complete prescription



timely solutions



Driving excellence and innovation

Pharmaceutical water solutions from GE Infrastructure Water & Process Technologies help you gain a powerful productivity and profit advantage. As a single source for water production, management and asset optimization, GE can help you drive down operating costs, protect your product quality and integrity, and bring your products to market faster.

Our expertise extends beyond water to include digital tools that enhance process quality and satisfy regulatory requirements.

Meeting the toughest standards worldwide

We supply solutions for production in the full spectrum of operations:

- Pharmaceuticals
- Biopharmaceuticals
- Botanicals
- Bulk enzymes
- Veterinary products
- Personal care products
- Active pharmaceutical ingredients (API)

GE has decades of experience in water purification system design to meet the most stringent pharmaceutical-grade water standards, including USP, EP and JP. We also have the expertise to help you quickly achieve and maintain process validation. GE offers USP class VI and NSF 61 tested pharmaceutical membrane elements and filters. In addition, we supply products compliant with CFR regulations.

As a global company, we can supply solutions for unique facilities or multiple, repeatable systems for operations across continents. We use Six Sigma quality improvement methodologies; our Quality Management System is ISO 9001:2000 registered and includes our manufactured products and services.

We support your critical processes with water treatments and management programs that make your in-plant utilities more cost-efficient and reliable. GE has the strength and resources to function as a partner dedicated to your profitable growth, now and in the future.

global consistency

Proven treatments with accountability

As a vertically integrated manufacturer, GE produces major equipment subcomponents and is accountable for performance. Our offerings, built on more than 100 years of experience, include Betz treatment chemistries and Osmonics membrane purification technologies.

GE water treatments protect boilers and cooling towers, optimizing performance, conserving energy, and reducing water consumption. Products and services include:

- Membrane and chemical treatments for boiler feed
- Corrosion inhibitors
- Deposit control agents
- Biocides and cleaners
- Legionella risk minimization programs

GE also delivers a wide range of process enhancements, including:

- Fermentation aids
- Active ingredient filtration and separation systems
- Steam treatments
- Reactor services

Pure water systems you can trust

We are industry leaders in electrodeionization (EDI) technology. Our E-Cell* EDI system eliminates chemical handling and related costs,

helps prevent cross-contamination, and enables continuous water production. Our water purification offering also includes:

- Pre-engineered, easily validated reverse osmosis (RO) and deionization systems, available with short lead times
- Hot-water sanitizable RO and EDI systems that minimize bacterial build-up
- Validation assistance with FAT and SAT protocols and IQ and OQ documentation

Furthering our breadth of expertise, GE Healthcare Biosciences is a global partner in delivering engineered API separation, purification and filtration systems.

GE enhances sanitization, reduces costs

For a United States cosmetics manufacturer, GE replaced an anion/cation mixed bed deionized water system with a new hot-water sanitizable RO/EDI unit. The new system enhanced sanitation while eliminating costly, time-consuming resin regeneration. It brought the company into regulatory compliance and eliminated issues with presence of bacteria in the water generation system.

GE enhances efficiency, reduces costs

Our OptiTherm* reactor cleaning service uses proprietary chemistries that safely and effectively restore thermal efficiency. For a European pharmaceutical manufacturer, we corrected iron oxide fouling that was severely limiting production schedules in four glass-lined hydrogenators. The deposits were removed without damage to the glass linings, process efficiency was restored to design parameters, and the production schedule was no longer restricted.



We don't just
promise value

we prove it

A world of expertise on your side

GE people are industry specialists who understand your business and work on your site to give you personalized solutions. They help you by:

- Analyzing processes and prescribing treatments
- Performing diagnostics and troubleshooting
- Servicing and maintaining equipment
- Using Six Sigma methodology to solve your most difficult problems and optimize processes
- Responding quickly to emergencies

GE delivers measurable benefits because we understand the special demands of bio/pharmaceutical production. The industry-exclusive Value Generation Plan identifies what is important to you and quantifies how we:

- Increase productivity
- Reduce costs
- Improve regulatory compliance
- Save energy

Our Internet Customer Portal lets you check the status of orders, invoices and shipments.

We support you at every step with cost-effective service and maintenance programs, which we can tailor to most needs. For example, the PlantGuard* program provides comprehensive consumables, services and equipment with levelized monthly billing. Your program can include flexible financing for capital purchases and extended warranties on equipment and membranes.

Constant innovation, continuous improvement

The advantages GE brings today will grow even bigger tomorrow. Our Global Research Center, part of a USD \$200 million annual R&D investment, makes discoveries each year that can directly benefit your business. New and emerging technologies include:

- InSight* remote monitoring and diagnostics for your boilers and cooling towers via the Web, and supporting compliance with digital data management.
- PaceSetter* Platinum automatic chemical feed control, which continuously optimizes water treatments based on changing process conditions.

As a GE customer, you also have access to technologies and services from other GE businesses:

- Protein separation and isolation from GE Healthcare Biosciences
- Systems that enable rapid drug discovery from GE Healthcare Discovery Systems
- Control, trending, alarming, workflow solutions and automation systems from GE Fanuc Automation
- Thermal process measurement and validation technologies from GE Infrastructure Sensing
- Factory automation, calibration, service and integration solutions from GE Energy Automation Services

GE people, solutions and technologies help you prosper today and ensure a successful and profitable future.