High Purity Media Systems for Generation, Storage and Distribution.
Syntegon Technology is your reliable partner for process and packaging technology in the global pharmaceutical and food industries. Whether you are an aspiring start-up or a global market leader, we offer intelligent and sustainable solutions for everyone.

Individual machines, systems or services – as a full-service provider, we take responsibility right up to fully integrated end-to-end solutions. Fields of application in the pharmaceutical industry are the production, processing, filling, inspection and packaging of liquid and solid active ingredients in all common packaging materials.

In the food industry, we offer solutions for the primary and secondary packaging of dry, liquid and frozen food as well as process technology for the production of confectionery.

We are at your side from project planning, development and implementation to comprehensive digitization, qualification and validation services. In addition, you always have access to our worldwide network of service specialists who support you throughout the entire machine life cycle.

High purity media systems are essential for the production of liquid pharmaceuticals. At Syntegon, we rely on our globally proven Pharmatec expertise.

We offer you everything that is required for a seamlessly integrated system infrastructure – from cold and hot generators to storage and distribution systems; from pre-configured units to highly customized high purity media systems.

Whatever solution you choose, our systems ensure a trouble-free process from generation to distribution at the point of use, incl. the associated CIP systems. You benefit from a flexible design of individual modules that can be seamlessly combined to a complete system.

Your advantages at a glance:
- Seamlessly integrated system infrastructure
- Cold or hot generators as required
- Storage and distribution systems for all common media
- From pre-configured to highly customized
- Flexible and modular for your specific processes
Your custom-fit high purity media system

The Pharmatec high purity media systems from Syntegon make sure you have the right pure water quality at any time all over the world!

Our portfolio ranges from compact generator systems for water treatment to pure steam generators and complete supply systems for pharmaceutical production processes.

State-of-the-art membrane or distillation systems are used for the generation of PW\(^1\), WFI\(^2\) and PS\(^3\). Thanks to their modular design, you can adapt the capacities to your individual requirements.

Our engineers’ many years of experience enable us to deliver even highly complex systems ready to use. Moreover, we are delighted to support you in all project phases, from concept design to start-up.

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1. PW = Purified Water
2. WFI = Water for Injection
3. PS = Pure Steam

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Your advantages at a glance:
- High purity water for pharmaceutical and biotech applications at all times and worldwide
- In line with national and international regulations
- From compact machines to complete supply systems
- Efficient and inexpensive adaptation of standard platforms
Pretreatment of potable water

No matter the quality of the potable water supply – you are on the safe side with the Pharmatec potable water pretreatment systems!

Depending on the origin and quality of the available potable water, different processes and treatment stages are required. Our offer is therefore based on a modular system that allows you to implement tailored pretreatment measures.

We not only provide the generator units; we offer you the entire design including water analyses, as well as specific operation and maintenance concepts. Our portfolio ranges from the removal of particulate matter to the conditioning of potable water. Of course, softening units and sanitization modules can also be integrated.

Your advantages at a glance:
- Always the best PW quality
- Modular system for tailored pretreatment
- From filtration to ultrafiltration

Raw Water Ultrafiltration
removal of particulate matter and bacteria
Do you need purified water in PW or WFI quality? We’re sure to have the right processes for your particular application!

We can offer you everything from multi-layer filters and ultrafiltration systems to physical-chemical processes – of course including reverse osmosis, electrodeionization, as well as advanced monitoring and analysis functions.

We have developed a new series of generator units especially for WFI. It is based on the “cold” membrane process of reverse osmosis, which is combined with an electrodeionization modul and a further ultrafiltration stage. The system can be sanitized chemically or with hot water. Measuring instruments and sensors make sure that the water and filter quality are controlled during the entire production process.

Your advantages at a glance:
- Processes for PW and WFI quality
- Energy efficiency thanks to cold membrane process
- Modular system for specific requirements
- Small footprint and overall height
- Easy to maintain thanks to excellent accessibility
Whether you need a single, dual, or triple mode distillation unit – you can always rely on the Pharmatec expertise in thermal generation for the production of WFI and pure steam!

Our multi-column units (Still) use the natural circulation process for distillation. All you need for operation is heating steam for the first column; all other modules are heated in an energy efficient manner utilizing the heat generated during the previous process stage. Patented droplet separation systems eliminate remaining pyrogens. The sterile steam is condensed to high-purity water of WFI quality in the next stage.

Sterile steam is indispensable for cleaning and sterilizing production systems and autoclaves. It is generated from PW-quality water in an evaporation column driven by heating steam. Non-condensable gases are eliminated by thermal degassing or an integrated membrane degassing module.

Your advantages at a glance:
- Many years of Pharmatec expertise
- Robust system type
- Safety through thermal processes
- Low maintenance requirements
The storage and distribution of PW and WFI are among the most critical processes in pharmaceutical production. A well-designed system concept makes sure it is done right!

A precise requirement analysis for the system design makes sure that the water is available at all points of consumption without any loss of quality. Particular attention must be paid to monitoring and hygiene during cold or hot storage.

Pure water tanks with modular distribution skids are available for cold storage and distribution of PW or WFI. Ozone can be added to protect against microbial contamination. During production, a UV system in the supply system of the ring line ensures that the dissolved ozone is depleted.

During hot storage, WFI is constantly circulated. The storage and distribution water temperature is between 80 and 85°C. Cold taps are realized via subloops with integrated cooling module.

When you opt for a Pharmatec system, you receive a full package: from digital data acquisition, to periodic sanitation or sterilization, to distribution skids. Thanks to their modular design, we can expand or convert all storage and distribution systems to meet your specific requirements.

Your advantages at a glance:
- Comprehensive storage and distribution systems for PW and WFI
- Well-designed solutions for cold and hot storage
- Continuous monitoring of all quality-relevant attributes
- Various sanitization methods according to requirements
- Easy expansion thanks to modular design
System Overview

### Pretreatment

We offer the right pretreatment solution for every water quality.

#### Options:
- [ ] Raw water ultrafiltration
- [ ] Activated carbon filter
- [ ] Hot water sanitization
- [ ] Multimedia filter
- [ ] Chemical dosing

<table>
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<th>Membrane-based generation processes</th>
<th>Thermal generation processes</th>
<th>Storage</th>
<th>Distribution</th>
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<td><strong>MWFI</strong></td>
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#### Options:
- [ ] Softening
- [ ] Antiscalant dosing
- [ ] Thermal sanitization
- [ ] Chemical sanitization
- [ ] Sanitization and softening during operation mode

- [ ] Hot WFI production
- [ ] Antiscalant dosing
- [ ] Thermal sanitization
- [ ] Chemical sanitization
- [ ] Sanitization and softening during operation mode

- [ ] Dual mode (WFI or PS)
- [ ] Triple mode (WFI and/or PS)
- [ ] Thermal degassing
- [ ] Membrane degassing

Intermediate sizes are available upon request, as well as a wide range of other modular options that can be integrated into customer-specific systems.
100% line competence = 100% partnership

Our broad line and system competence makes us your partner of choice when it comes to planning and developing your production lines.

Our services include:
- Process design
- Product development
- Line configuration
- Project management
- Qualification & validation

Ask our experts!
Digital products

Let our versatile and proven software solutions support you in your daily work.

The digitized value chain is becoming increasingly important in the age of Industry 4.0. We are looking forward to developing your ideal digital solutions that meet all regulatory requirements.

Advanced analytics
- Anomaly detection
- Process stability
- Predictive maintenance
- Image classification

I 4.0 functionalities
- Production management
- KPI management
- Event tracking
- Condition monitoring

SCADA/MES functionalities
see ISA 95 automation pyramid

Customized service solutions for the entire life cycle of your machine.

By investing in a Syntegon High Purity Media System, you gain access to an extensive range of services. We are always there for you, providing reliable services from a single source, all over the world. It begins during the project phase with services such as process consulting, system planning, or lab services. Service continues during operation: from spare parts and field service offerings to stock optimization, modernization, and preventive maintenance, all the way to remote and data-based services and training. Whether it’s a customized solution or a standard service – together with us you achieve maximum output with minimum downtime and optimize the profitability of your machines.

For detailed information please visit our homepage:
www.syntegon.com/services
Connect with our team.