

# **cGMP Sterilization**

& Laboratory Equipment Solutions





#### Steripro Saturated Steam Sterilizers (GMP)

Steripro cGMP vacuum steam sterilizers are designed for production in biotech and pharmaceutical facilities where repeatability is critical. Specially designed for the sterilization of dry goods, porous materials, and solutions in vented or sealed rigid containers.

- Sanitary 316L piping and components.
- · High-capacity vacuum pump.
- Temperature distribution better than +/- 0.5°C.
- 316L stainless steel chamber (high polish), jackets, and doors.
- · Lubricant-free door gaskets.
- · High-grade non-proprietary components.



## Electric Pure / Clean Steam Generators (GMP)

BMT USA electric pure and clean steam generators are equipped with heating elements and sanitary ASME pressure vessels made from 316L stainless steel. All connections on the vessel, including the heat exchanger, are sanitary and sloped to drain. Piping in contact with feedwater and clean steam is 316L with sanitary components and connections.

- Available in capacities from 50 lbs/hr up to 1000 lbs/hr.
- · Steam separator for pure steam demands.
- Allen-Bradley or Siemens industrial PLC control systems.
- 316L stainless steel construction, including feed water piping, heating elements, vessel, and pure steam piping.
- Available feedwater and pure/clean steam conductivity monitoring and recording.



## Ventipro Steam-Air Mixture Terminal Sterilizers (GMP)

Ventipro steam-air mixture sterilizers provide fast and effective terminal sterilization of liquids in open, sealed, or heat-sensitive containers. Pure steam is mixed with overpressure air to compensate for the rising temperature and pressure building inside the liquid container. Internal fans mix steam and air to ensure no cold pockets remain inside the chamber.

- · Fast convection heating and cooling.
- Ideal for heat-sensitive containers such as PVC, bags, plastic bottles, syringes, blister packs, etc.
- Fan shaft seal designed for ease in inspection and to prolong useful life.
- Product containers leave the chamber dry and ready for labeling.
- High-grade non-proprietary components.



#### **Steam-to-Steam** Pure / Clean Steam Generators (GMP)

BMT USA steam-to-steam generators utilize plant steam as the heating source to produce pure or clean steam. The tube and shell heat exchanger is 316L stainless steel and available in single or double tube-sheet construction. A steam separator can be equipped for applications requiring pure steam. When condensed, the pure steam will meet waterfor-injection standards.

- Available in capacities from 50 lbs/hr up to 5000 lbs/hr.
- Steam separator for pure steam demands.
- Allen-Bradley or Siemens industrial PLC control systems.
- 316L stainless steel construction, including feed water piping, vessel, and pure steam piping.
- Available feedwater and pure/clean steam conductivity monitoring and recording.



# Aquapro Hot Water Cascade Terminal Sterilizers (GMP)

Aquapro water cascade sterilizers provide fast and effective terminal sterilization of liquids in sealed or heat-sensitive containers. Recirculating water is heated by an external heat exchanger and then directed to a perforated tray that evenly distributes the cascading water over the product. Even heat distribution is achieved due to the recirculating water's high flow rate.

- Ideal for large volume liquids in sealed containers.
- No pure steam is needed as recirculating water is externally heated.
- High-capacity recirculation pump for even temperature distribution.
- Fast and effective cooling provided by an external heat exchanger.
- High-grade non-proprietary components.



#### Class 5 (100) Depyrogenation Ovens / Dry Heat Sterilizers (GMP)

ISO class 5 dry heat ovens are designed for critical depyrogenation applications in clean room areas. ISO class 5 conditions are achieved throughout the cycle, including heating and cooling, with exposure temperatures up to 280°C without ramping significantly improving overall cycle speed.

- Fully welded chamber, no screws or rivets are used, making the chamber easier to clean.
- ISO Class 5 up to 280°C throughout the entire cycle, tested and documented.
- No temperature ramping required, reducing cycle time.
- Consistent temperature distribution with no need for adjustments.



## **Combipro** 3-in-1 Combination Sterilizers (GMP)

Combipro sterilizers are ideal for contract manufacturers or process development centers due to the ability to sterilize almost any product or container. Combipro sterilizers are equipped with a vacuum pump for effective sterilization of dry goods, a fan system for the steam-air mixture process, and water recirculation pipework for the water cascade process.

- Combination vacuum, steam-air mixture, and water cascade process built into one sterilizer.
- Allows for programming any type of cycle or combination of cycles.
- Insulated chamber and piping reduces utility consumption.
- All BMT USA GMP Sterilizers are available with an Allen-Bradley or Siemens PLC control system compliant with FDA 21 CFR Part 11.



### Class 7 (10,000) Depyrogenation Ovens / Dry Heat Sterilizers (GMP)

ISO class 7 dry heat ovens are designed for critical depyrogenation applications in clean room areas. ISO class 7 conditions are achieved throughout the cycle without the need for internal HEPA filters. External HEPA filters are equipped on the air inlet and exhaust. The absence of internal filters reduces the unit's overall footprint and significantly reduces the initial investment.

• Fully welded chamber, no screws or rivets are used, making the chamber easier to clean.

• Class 7 up to 300°C throughout the entire cycle,

- tested and documented.

  No temperature ramping required, reducing
- Consistent temperature distribution with no



#### Sterilab Custom, Bulk Capacity Laboratory Sterilizers

Sterilab sterilizers are designed to meet the requirements of Good Laboratory Practices while being upgradeable to include cGMP features at anytime before or after production. With a range of available chamber sizes and flexible feature options, Sterilab sterilizers can be tailored to an individual project while maintaining the ability to reconfigure the unit for future applications.

- · Sanitary chamber fittings.
- Optional effluent sterilization cycles available for BSL-3 applications.
- Modular design for ease of installation.
- Available with medium, large and bulk chamber sizes.
- Constructed of 316L stainless steel.
- "GMP Ready" design allows for future upgrades for improved flexibility and longevity.



# **Sterivap** Laboratory Steam Sterilizers

Sterivap laboratory steam sterilizers are designed for the sterilization of laboratory materials such as instruments, textiles, rubber goods, liquids, agars, and animal diet and cages. With a range of standardized options, Sterivap sterilizers can be configured to meet your requirements without sacrificing value.

- Double microprocessor controls and instrumentation for maximum load safety.
- 8.4" color touch-screen.
- 316L stainless steel chamber and 316Ti jacket with 15-year non-prorated warranty.
- Mechanical vacuum pump provides consistent vacuum performance.
- Water recirculation system for up to 75% reduced water consumption.



# **Unisteri** Compact Swing-Door Laboratory Steam Sterilizers

Unisteri swing door steam sterilizers are designed to offer a compact footprint and are ideal for sterilizing laboratory materials, such as instruments, textiles, rubber goods, liquids, agars, and animal diet and cages. With a range of options, including recessed wall mounting, EN285 compliant air detectors, and effluent sterilization cycles, Unisteri sterilizers can be configured to match your exact requirements.

- Swing door design reduces overall footprint.
- Double microprocessor controls and instrumentation for maximum load safety.
- 8.4" color touch-screen.
- 316L stainless steel chamber and 316Ti jacket with 15-year non-prorated warranty.
- Mechanical vacuum pump provides consistent vacuum performance.
- Double pressure sensors prevent unlocking the door until the chamber equalizes to atmosphere.



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