

# Growth Media Sterilization



- **Continuous Thermal Process**

- **Range**

*Flow-through capacity  
200 to 30,000 lph  
(50 to 8,000 Gall/hour)*

- **Available Heating Units**

- *Actijoule®: patented electric heating unit*
- *Actitube®: steam operated heat exchanger*



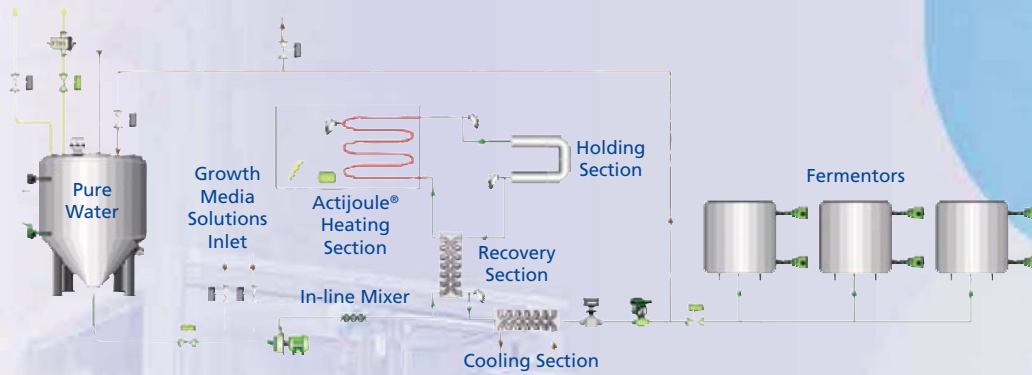
## > Goals

- *Sterilize nutritional media before culture*
- *Thermally inactivate all culture germs after fermentation while preserving their qualities*

## > Applications

- **Growth Media**
- **Glucose Solutions**
- **Agar-agar solutions**
- **Fermentation solutions**

## > Flow Diagram



## > Design Features

- Fully aseptic tubular exchanger
- Heating system with direct or indirect energy recovery section
- Precision regulation ensuring efficiency while eliminating risks of overheating or damage to the treated solutions
- Sanitization with medium produced by the unit or from external source
- PLC-controlled cleaning cycles

## > Advantages

- Precise control of the aseptic process
- Full automation ensuring maximum process integrity
- 100% continuous process ensuring
  - maximum productivity
  - low energy costs
  - high flexibility
- Optimized cleaning cycles
- Low maintenance
- Power failure security system

## > Standard Capacities and Dimensions

Capacity	Standard Dimensions/Weights			
	Length	Width	Height	Weight
200 - 500 l/h 50 - 130 gal/h	3,500 mm 137.75 in	1,200 mm 47.25 in	1,800 mm 70.75 in	1,500 kg 3,300 lb
1,000 - 2,000 lh 260 - 530 gal/h	3,500 mm 137.75 in	1,500 mm 59.00 in	2,200 mm 86.75 in	2,500 kg 5,500 lb
4,000 - 6,000 l/h 1,000 - 1,500 gal/h	4,600 mm 181.00 in	1,600 mm 62.00 in	2,200 mm 86.75 in	3,000 kg 6,600 lb
10,000 - 12,000 l/h 2,000 - 3,100 gal/h	6,500 mm 258.00 in	1,800 mm 70.75 in	2,400 mm 94.50 in	3,500 kg 7,700 lb
20,000 l/h 5,300 gal/h	6,500 mm 258.00 in	2,100 mm 82.75 in	2,400 mm 94.50 in	4,500 kg 9,900 lb
<b>Other</b>	Upon request			

## > Preliminary Scheme

- Study of the specifications
- Technical recommendations and commercial offer

## > Design

- **Preliminary study:** delivery of the simplified functional analysis, equipment dimensioning, preliminary layout, structure of the automation for validation
- **Detailed study:** delivery of the manufacturing drawings, nomenclature, materials data sheet, and detailed functional analysis for validation.
- Design in accordance with the cGMP and CFR guidelines

## > Manufacturing to the Factory Acceptance Tests (FAT)

- Scheduling and production scheme in compliance with the "Quality Plan Project"
- Manufacturing & Assembling
- Finalization of the documentary file
- Delivery of the FAT protocols
- Complete FAT in our technical plant before shipment

## > Installation to the Site

- Assembling on site
- SAT (Site Acceptance Test)
- Assisting the Installation and Operation Qualifications
- Training

## > Maintenance

- Data processing telemaintenance through modem
- Preventive maintenance contract on site
- Curative maintenance intervention

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