Prepare, sterilize and dispense culture media.

Systec Mediaprep. Media preparators.
Systec Mediafill. Plate pourer and tube filler.

Systec
the autoclave company

Performance and competence.

Experience counts

We only make two things. Laboratory autoclaves and devices for the improved sterilization and handling of culture media. Always with the goal of making laboratory work safer, easier, more accurate, reproducible and validatable, and consequently more economical. With over 20 years of experience and continuous intensive cooperation with experts and users, we know how to provide optimal solutions for even the most complex sterilization tasks.

We have the knowledge and experience to produce the best results!

Our expertise and know-how are available for you worldwide through specialized and specially selected partners.

The power of innovation.
For the simple, precise and efficient preparation of culture media.

Systec media preparators, plate pourer and tube filler

Systec media preparators, the plate pourer and tube filler ensure that the production, preparation and automatic filling of Petri dishes with culture media and their subsequent automatic stacking, or the automatic filling of test tubes, is safer, easier, accurate, reproducible and validatable.

Contents

Systec Mediaprep.
Compact solutions.

For 10 to 30 litres

Simple and safe handling
These particularly compact media preparators can be positioned anywhere. The smallest vessel even fits on the laboratory bench. Both of the two larger vessels are on rollers with locking brakes for transportable use. The touch display for operation, positioned at the front, is clearly legible and easy to reach.

Quickly heated, rapidly cooled
Powerful heating elements ensure rapid heating. Cooling is also rapid.

An integrated compressor provides the necessary support pressure which prevents the medium from foaming or over-boiling.

3 models
from 10 to 30 L
effective space

Systec Mediaprep-10   Systec Mediaprep-20   Systec Mediaprep-30

Dimensions and performance

Systec	Mediaprep–10	Mediaprep–20	Mediaprep–30
Chamber dimensions Ø x height (mm)	296 × 250	296 × 450	296 × 650
Chamber volume (L)	17	30	44
Media vessel dimensions Ø x height (mm)	270 × 222	270 × 422	270 × 622
Media vessel volume (L) total / nominal	12 / 10	23 / 20	34 / 30
Vessel dimensions (mm)			
– Height	480	715	915
– Width	555	555	555
– Depth	635	635	635
Heating power (kW)	3.6	9.3	9.3

Mediaprep-10: Voltage 220 - 240 V, 50 / 60 Hz, 16 A.
Mediaprep-20: Voltage 380 - 400 V, 50 / 60 Hz, 16 A.
Mediaprep-30: Voltage 380 - 400 V, 50 / 60 Hz, 16 A.
Other supply voltages available on request.

Systec Mediaprep.
For high volumes.

For 45 to 120 litres

Simple and safe handling
All of these vessels are on rollers with locking brakes for transport-able use, and can be positioned ideally anywhere within the laboratory. The touch display for operation, positioned at the top on the door, is clearly legible and easy to reach.

Quickly heated, rapidly cooled
Powerful heating elements ensure rapid heating. Cooling is also rapid.

An integrated compressor provides the necessary support pressure which prevents the medium from foaming or over-boiling.

**4 models
from 45 to 120 L
effective space**

Systec Mediaprep-45   Systec Mediaprep-65   Systec Mediaprep-90   Systec Mediaprep-120

Dimensions and performance

Systec	Mediaprep-45	Mediaprep-65	Mediaprep-90	Mediaprep-120
Chamber dimensions Ø x height (mm)	400 × 485	400 × 690	500 × 610	500 × 790
Chamber volume (L)	65	90	126	162
Media vessel dimensions Ø x height (mm)	380 × 452	380 × 657	480 × 572	480 × 752
Media vessel volume (L) total / nominal	51.3 / 45	74.5 / 65	103.5 / 90	136.1 / 120
Vessel dimensions (mm)				
– Height	1080	1210	1110	1240
– Width	550	550	650	650
– Depth	780	780	895	895
Heating power (kW)	20	20	20	20

All models: Voltage 380 – 400 V, 50 / 60 Hz, 32 A.
Other supply voltages available on request.

Safe
handling.

Easy to operate

Control of the door and loading hatches is temperature-
and pressure dependent. Inadvertent opening is impossible.
The media vessels are exchangeable, and thanks to the
integrated handle grip, easy to remove and clean.

Standard features

5.7" touch display - for simple and intuitive operation	■
7 predefined programmes, up to 100 programmes can be created and saved	■
Exchangeable media vessel	■
Separate loading hatch for the addition of additives	■
Integrated compressor for sterile-filtered support pressure in the cooling phase	■
Safety valve for pressure relief in the event of thresholds being exceeded	■
Water level protection	■
Overtemperature protection	■
Continuous mixing via magnetic stirrer	■
Flexible PT-100 temperature sensor	■
USB interface for external documentation	■
RS-232 interface for external documentation (network-capable)	■
RS-485 interface for communication with a Systec Mediafill	■

Available as an option

Integrated printer for batch documentation	☐
Systec ADS documentation software package for comprehensive documentation	☐
Documentation SD: data storage on SD card for up to 10,000 sterilization cycles and transmission of data to a PC	☐
Systec ADS CFR documentation software package with conformity to FDA 21 CFR Part 11	☐
AuditTrail: unalterable and traceable documentation according to FDA 21 CFR Part 11	☐
Aquastop	☐

■ Standard
☐ Optional

Everything under control.

The fully programmable microprocessor control unit is a unique feature of the Systec Mediaprep.

The automatic process ensures that the prepared and sterilized media is of a consistently high- and repeatable quality.

During the process, the medium is mixed thoroughly, heated, sterilized and cooled down to the selected filling temperature. The medium is maintained at the filling temperature for the filling process.

Highly effective heating and cooling

Powerful heating elements ensure fast heating. The rapid cooling is effected through water circulation at the external walls of the media vessel with sterile demineralized water that is cooled with external water via a heat exchanger.

The total cycle time including heating, sterilizing and cooling is between 60 and 120 minutes, depending on the vessel size, the amount of medium and the temperature of the cooling water. The sterile-filtered support pressure prevents the medium from foaming or over-boiling. A compressor is installed as standard in all Mediaprep models.

Operation by Touch Screen technology for all media preparators

Operation is easy and rapid via a large (5.7 inch), highly visible touch screen interface. This innovation offers additional options and increased flexibility when working with the autoclave.

For example, process data can be displayed numerically or graphically. 7 programs are pre-defined but can be expanded (up to 100) as required by the user.

To initiate a new program, the user is guided through the process by menu dialog. Every new program is automatically allocated a permanent, unalterable name and can also be given an individual designation by the user. All process parameters can be individually altered.

Predefined programmes
1 Media
2 Media
3 Media and additive
4 Free steam
5 Liquids and cooling
6 Liquids
7 Cleaning

001 - Media-Agar	14:53:08 00151
099.0 °C	**101.5** kPa
	Ready
⟳ 000/000	
START DOOR MENU PROGRAM	

PROGRAM	002/007
001 Media Additional name	SterTemp 122,0 °C
002 Media Additional name	SterTime 015,0 min
003 Media+Additive Additional name	End. Temp 46 °C
004 Free Steam Additional name	Disp. Temp 45 °C
005 Liquids+Cool Additional name	StirrerHeat 0000 rpm StirrerCool 0000 rpm

001 - Media-Agar	34:53:08 0151
099.0 °C	Pressure test 00:03:46
101.5 kPa	
⟳ 000/000	
STOP GRAPH MENU PROGRAM	

001 - Media-Agar	01:50:23 0151
500 kPa / 150 °C 400 / 125 300 / 100 200 / 75 100 / 50	TS1 121,5 °C TS2 124,5 °C TS3 125,0 °C TS4 122,5 °C TS5 123,6 °C TS6 123,2 °C CP 210,5 kPa
STOP BACK MENU PROGRAM	

Everything under control.

Options for documentation

Printer
Optional integrated printer for documentation of program type, batch number, date / time, temperature / pressure progress and sterilization phase.

Systec ADS documentation software package
Via RS-232 interface for direct connection to a PC or for connecting to an Ethernet network via converters. Special software for Windows for documentation of all process flow data such as pressure, temperature, time, and sterilization phase including relevant diagrams. The Systec ADS documentation software processes documented data both graphically and numerically.

SD card

Extensive documentation on up to 10,000 sterilization cycles*
via an (optional) integrated card slot and a 1024 MB SD memory
card. All the recorded data is available, via the SD memory card,
for processing with the Systec ADS documentation software.

*only in combination with the optional Systec ADS software.

Systec ADS CFR documentation software package
with conformity to FDA 21 CFR Part 11

Optional documentation for the Systec Mediaprep models.
Download of the process flow and audit trail data from the
media preparators. This solution ensures documentation
according to the provisions of the FDA 21 CFR Part 11. The Systec
ADS documentation software with conformity to FDA 21 CFR Part 11
processes the documented data, both graphically and numerically.

21 CFR Part 11

AuditTrail

AuditTrail allows you to set up and administer the users of
the Systec Mediapreps. You can specify which user can perform
which actions on five different authorization levels. In addition,
the access rights for the stored sterilization programs can be
specified individually. The user must log in with a username and
password before each action. All the actions carried out (e.g.
the changing of parameters, or the starting or stopping of
sterilization programs) are documented and can be traced back to
the user responsible, and can also be identified by a time-stamp
(date and time). All the data generated by the user's actions
or by the documentation of a sterilization cycle are protected
against manipulation and marked with the electronic signature
of the respective user.

Safe media dispensing.

Sterile addition of additives

It is possible to add controlled amounts of additives after sterilization via the filling port. The filling port is generously dimensioned and has a safety lock. The additives can be introduced with sterility maintained by using a bottle into the open port or with a syringe through a silicone septum embedded in the locking cap.

Sterile dispensing

The dispensing port can be opened for the sterile dispensing of the medium from the media preparator. A silicone tube is connected to the dispensing port using a dispensing lance. To ensure the sterile dispensing of the medium, the dispensing lance and the silicone tube must be pre-sterilized in an autoclave.

The medium can either be dispensed using the Systec Mediavalve via sterile-filtered air pressure generated by the integrated compressor, or by connecting any commercially available peristaltic pump or a device that is equipped with an integrated pump.

Dispensing alternatives

The prepared and sterile medium is dispensed via a flexible tube. The internal aspiration tube and the dispensing port are also automatically sterilized as part of each sterilization process via the inlet of steam. The tube separate to the vessel and the dispensing adapter connected to the tube must be pre-sterilized using a suitable steam sterilization process and must be connected to the dispensing port under sterile conditions.

■ **Systec Mediavalve – automatic tube valve**
An economical method for dispensing uniform quantities. While a pre-selectable constant slight overpressure in the media vessel ensures that the medium flows, the Mediavalve controls the time for the opening and closing of the pinch valve. Enter the desired quantity once, the vessel calibrates itself according to the viscosity of the medium via a sample dosing.

■ **Systec Mediapump – peristaltic pump**
High precision and high speed are a hallmark of this system. The dispensing volume can be set from between 0.1 ml to 10 L. The system works at a tolerance of $\pm$ 0.5% and ensures reproducible results thanks to the automatic calibration. Alongside simple manual dispensing, there are 45 individually configurable programmes available.

■ **Systec Mediafill – plate pourer and tube filler**
The Systec Mediafill plate pourer and tube filler dispenses culture media automatically, safely and efficiently into Petri dishes. It can be configured as an option for the most diverse of applications and, for example, be converted to a tube filler.

■ **Other systems**
Commercial peristaltic pumps and dilutors can also be connected.

Systec Mediavalve

Systec Media-pump

Systec Mediafill.
Dispensing and stacking of culture media into Petri dishes.

Fully automatic, safe and efficient

Whether with a diameter of 35, 60, 70 or 90 mm, whether standard- or up to 26 mm deep Petri dishes, Systec Mediafill dispenses into all Petri dishes. The system is simple and intuitive to operate. For example, the dimensions of the Petri dishes being used can be called up from the database via the 5.7" display.

Sterile automatic dispensing is performed precisely via an integrated peristaltic pump.

Depending on requirements, there are three carousel sizes for 220, 440 or 660 Petri dishes.

Having a range of options, the Systec Mediafill can be configured ideally for the most diverse of applications, for example through an additional pump for the simultaneous addition of additives.

Furthermore, the Systec Mediafill can be converted into a tube filler using the same vessel and little effort. This automatic system can be fitted with up to 4 racks and processes test tubes with diameters of 13, 16, 20, 25 and 30 mm. Racks with test tubes of different diameters can be filled simply and efficiently in one work sequence.

Up to 900 units per hour

Dimensions and performance

Systec	Mediafill	Stack 220	Stack 440	Stack 660
Length (mm)	683			
Width (mm)	662			
Height (mm)	348			
Diameter (mm)		566	566	566
Overall height (mm)		730	1094	1444
Max. stack height for Petri dishes (mm)		345	682	1030
Petri dish diameter (mm)		90	90	90
Petri dish height (mm)		12 to 26	12 to 26	12 to 26
Capacity (Petri dish height 16.5 mm)		220	440	660
Weight (kg)				
– Mediafill	37.5			
– Stacker (without Petri dishes)		6.9	9	14.3
– Additives pump (optional)	0.5			
– Peltier cooling (optional)	1.7			

Pump	
Filling volume main pump (ml)	1 to 999.95
Filling accuracy at 15 ml (%)	1
Filling volume additives pump (ml)	1 to 10

Maximum fill rate	
Manual filling (ml/min)	1000
Dish filling (ml/min)	600
Fill delay (sec)	0 to 10

UV light	
Output (W)	9
UVC light emission (W)	2.3 (254 nm)
Interface	RS-485
Power connection	100 V – 240 V, 50/60 Hz

Technical features as standard.

Standard features	
5.7" touch display - simple and intuitive operation	■
One-touch Petri dish selection - integrated database for pre-programmed Petri dish dimensions	■
Unsupervised, fully automatic process - filling and stacking without user intervention	■
Smooth and quiet operation - noise emission reduced to a minimum	■
Smooth aluminium surfaces - easy to clean, no holes or joints in which deposits of the medium can remain	■
Three stacking carousel heights available - for up to 220, 440 and 660 Petri dishes	■
EasyStack - the stacking carousel can be fully removed from the Systec Mediafill	■
Integrated peristaltic pump (main pump) - for the precise dispensing of media	■
DropStop™ function - prevents uncontrolled bleeding at the filling port	■
Shaker function - optimum distribution of the media in the Petri dishes	■
UV lamp with 2.3 W UVC light emission - reduces the risk of contamination	■
Manual filling function - either via foot switch or via timer	■

Available as an option	
Ink jet printer for labelling the Petri dish side	☐
A second integrated pump for the addition of additives immediately prior to dispensing	☐
Tube filler, up to 4 racks possible, for filling test tubes with diameters of 13, 16, 20, 25 and 30 mm	☐
Cable connection Systec Mediafill > Systec Mediaprep printer for documentation	☐
Pager function - automatic message from the System Mediafill to the user when intervention is necessary	☐
Option for filling bi-plates and tri-plates	☐
Peltier cooling unit for rapid agar solidification and minimizing condensation	☐

■ Standard
☐ Optional

Pager function: Automatic message
from Systec Mediafill to the user

labelling on the sides of Petri dishes

Systec Mediaprep printer for
documentation

Systec Tube-Filler

Systec Mediafill with Petri dishes

Systec Mediafill with Tri-Plates

Systec Mediafill key points:

- 220, 440, 660 Petri dishes
- 35, 60, 70 and 90 mm diameter Petri dishes
- Integrated additives pump: pump integrated into the Systec Mediafill, connected to the same control system, synchronous with the main pump at the touch of a button, optimum mixing ratio
- Manual filling: foot switch or timer
- Optional: filling of bi-plates and tri-plates possible
- Optional test tube filler: the same vessel can be converted / up to 4 racks possible, diameter 13, 16, 20, 25 and 30 mm
- Optional pager: with info function, when the cycle is complete
- Optional printer: for printing on the sides of the Petri dishes

Other important functions:

- DropStop™ function (tube pump is withdrawn during pauses, in order that no medium bleeds into the next Petri dish)*
- Pump back function: in the event of malfunctions, the medium is pumped back to prevent gelling in the tube*

*Activation via user selectable.

Quality performance.

Product–related services:
- Development
- Design
- Production of series products
- Production of custom products
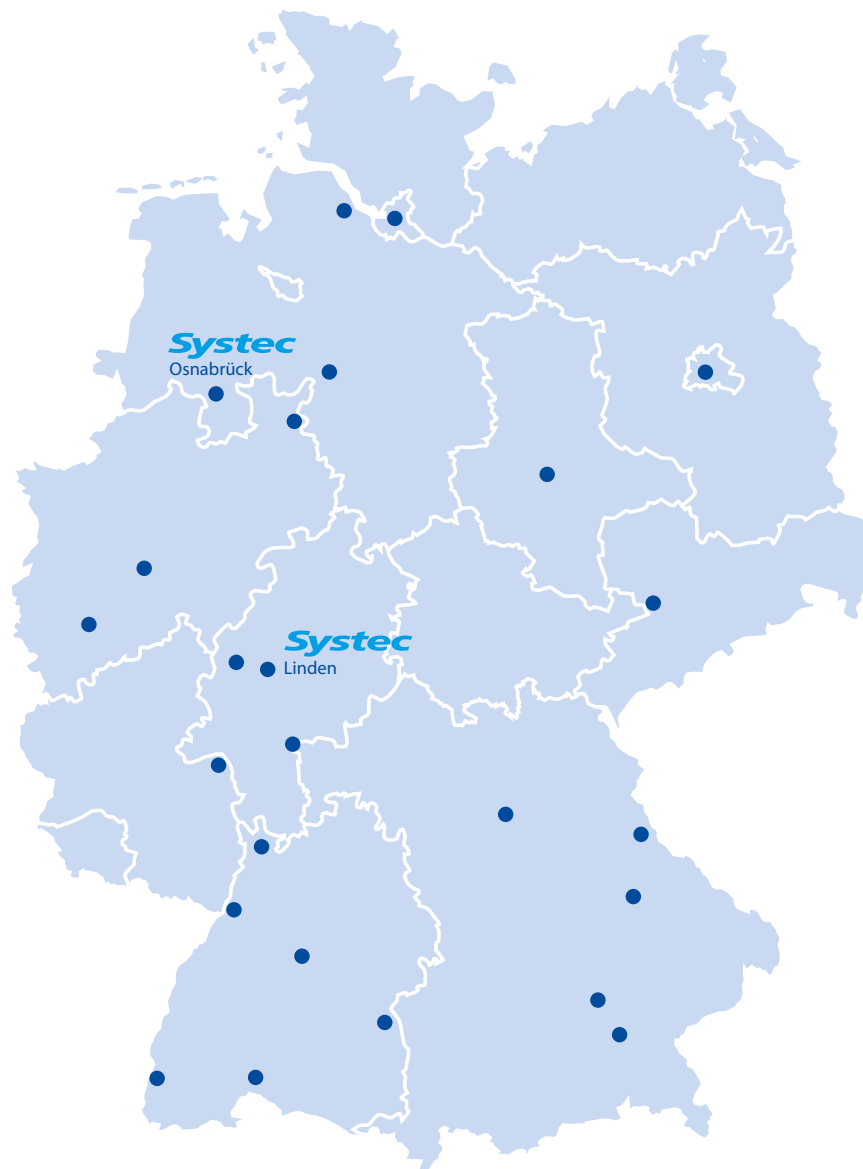- Application and technical advice

Additional services:
- Installation and start-up
- Special technical developments
- Tests and process development
- Individual service on-call
- Contract service
- Qualification and validation
- GMP-compliant documentation
- Consultancy on sterilization processes
  and special requirements
- Process development

Qualification and validation
Within the scope of our service we offer you qualification and validation work with GMP-compliant documentation:
- DQ – Design Qualification
  Definition of requirements regarding the autoclave with respect to process technology.
- IQ – Installation Qualification
  The autoclave is manufactured and installed according to the defined DQ requirements.
- OQ – Operation Qualification
  The autoclave to function as specified in DQ.
- PQ – Performance Qualification
  The autoclave sterilizes the product permanently according to pre-defined specifications.

Quality Assurance according to ISO 9001
Our Quality Management is such that it complies with the most stringent requirements of testing and documentation.

Each component is subject to exhaustive control and each autoclave is checked and tested for all functions before delivery. A Certificate of Acceptance is provided.

Our environmental management system according to ISO 14001
In addition, our environmental management system is certified according to DIN EN ISO 14001. We are happy to provide our customers with details of our environmental policy upon request. A Certificate of Acceptance is provided.

In accordance with standards and regulations
Systec Media preparators comply with the following standards:
Pressure vessel:
- 2014 / 68 / EU Pressure Equipment Directive
- ASME Boiler & Pressure Vessel Code, Section VIII, Division 1
- China Stamp

Other guidelines:
- 2014 / 35 / EU Low Voltage Directive
- 2014 / 30 / EU on Electromagnetic Compatibility
- 2006 / 42 / EC Machinery Directive

All media preparators are CE marked.
We will be happy to provide a complete list of standards and summary of regulations on request.

Sales and service
in Germany.

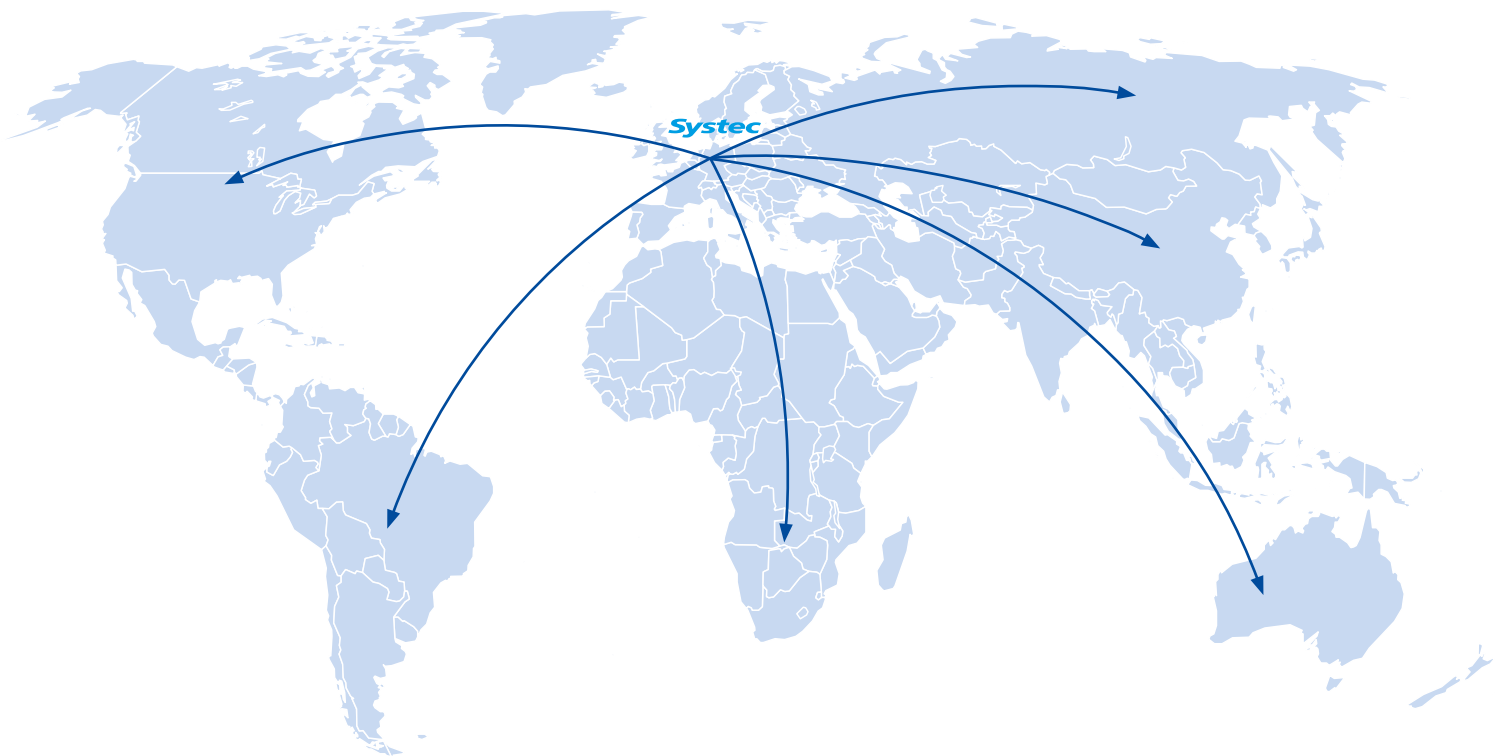## Systec service stations in Germany

A Systec service technician is always near you and can
be contacted any time through our central service number:
+49 6403 67070-0.

Sales and Service.

Worldwide via trained partners

Systec laboratory autoclaves and Systec media preparators are
performing reliably in numerous countries on every continent.
Our qualified partners are available to you for consulting, sales
and service.

Complete program.

Autoclaves.

Autoclaves as horizontal or vertical construction. Pass-through autoclaves for wall recessing in safety areas (e.g. biological safety laboratories or clean rooms).

- Vertical floor-standing autoclaves
  Systec V series
  40 to 150 litres

- Horizontal bench-top autoclaves
  Systec D series
  23 to 200 litres

- Horizontal floor-standing autoclaves
  Systec H series
  65 to 1580 litres

- Pass-through autoclaves
  Systec H series 2D
  90 to 1580 litres

Prepare, sterilize and dispense culture media.

Systems for the preparation and sterilization of microbiological culture media and the automatic filling of Petri dishes, bi-plates, tri-plates and test tubes.

- Media preparators
  Systec Mediaprep
  10 to 120 litres

- Plate pourer and tube filler
  Systec Mediafill

Systec

the autoclave company

MADE IN
GERMANY