



Autoclave Validation Testing Training



The items below were demonstrated by the trainer and performed by the technician.

Autoclave Maintenance:

- Perform autoclave maintenance as recommended by the manufacturer. Utilize contract service providers for all autoclaves unless not contracted

Autoclave Validation:

- Perform biological indicator testing to validate the effectiveness of an autoclave in the following circumstances and during periodic maintenance as above:
 - When using a new type of packaging material or tray
 - After training new personnel to use the autoclave
 - After repair of an autoclave
 - After any change in the autoclave loading procedure
 - New machine
 - Uncertain that load has reached proper temperature

At every cycle:

- Use black stripe autoclave tape or steam sterilization strips to verify appropriate temperature, time and pressure have been reached.
- Record autoclave controls confirming appropriate time and temperature have been reached.

Biological Indicator Testing:

- Perform biological indicator testing at intervals as indicated above.
- *Geobacillus stearothermophilus* is the indicator organism of choice for steam sterilization.
- Choose the appropriate biological indicator test for the autoclave and cycle being used. i.e. Attest 1262/1262P

Dry items

- Place biological indicators for surgical instruments within a cotton wrapped surgical pack or a towel pack/gown.
- Place biological indicators for bedding in the center of a bag of bedding and in a typical load.
- ABSL-2/3 areas, indicators may be placed in a small clear autoclave bag closed in a similar fashion as the bedding bag to mimic the process without contaminating/wasting the autoclaved bedding.
- Always place biological indicators in the area within the load that produces the greatest challenge to air removal and steam penetration. Note: In a steam sterilizer this is generally on the bottom shelf, near the door, and over the drain.

Liquid items:

- Use a biological indicator specifically for liquid cycles.
- Place the biological indicator vial into one of the liquid items and place in the center of the autoclave
- Run the cycle
- Carefully remove the biological indicator once cycle has completed

Removal of biological indicators

- After the autoclave cycle has completed
 - Fully open the autoclave door and wait for at least 5 minutes before removing the biological indicator.
 - Wear safety goggles and heat resistant gloves when removing the biological indicator.
 - If the indicator is inside a surgical pack, break sterility by opening the surgical packs when removing indicators.
 - Check the chemical indicator on the biological indicator for a color change (e.g., rose to brown).
- Complete the Autoclave Cycle form and place it in a box next to the incubator along with the biological indicator vials.

Incubation of biological indicators

- Incubate the biological indicator at least two (2) hours within completion of the sterilization cycle.
- Activate biological indicators per manufacturer's instructions.
- Place in a metal block in an upright position with the cap remaining above the metal block.
- Incubate the biological indicator per manufacturer's instructions
- Incubate a biological indicator control as a positive growth control. Note: The control must be of the same lot and manufacturing date as the test biological indicators used.
- Incubate at appropriate times per manufacturer's recommendations (e.g., Attest 1261P: 24 hours and Attest 1262P: 48 hours).
- Examine the incubators at 24 and 48 hours and interpret results:

Successful sterilization:

- The control will turn yellow, and the sterilized biological indicator test remains purple.
- Faulty biological indicator:
The control remains purple, this indicates that biological indicators were faulty and biological indicator testing must be repeated.

Failed sterilization:

- The control and sterilized biological indicator turn yellow. Contact your supervisor for further directions.
All previous items sterilized since the last good biological test must be considered unsterile.
- Record results in log provided

Bowie Dick Test:

- Place a small disposable Bowie Dick test pack into the autoclave (empty chamber) on the lowest shelf above the drain and run the autoclave at a 4-minute sterilization cycle.

Pass test:

- Complete color change to black.

Failed test:

- Lack of or a partial color change.
- Contact your supervisor for further directions.
- Record results in the log

Autoclave tape:

- Utilize autoclave tape in each steam sterilization load.
- Place autoclave tape outside of a load in an area that produces the greatest challenge to air removal and steam penetration.

Sterilization cycle completed

- Confirm the autoclave tape has turned black to indicate sterilization.
- If tape does not change to the appropriate color, this indicates that sterilization did not occur. Note: the color varies based on the brand of indicator.
- Contact your supervisor for further instructions.
- Autoclave tape visually indicates a temperature of 121°C for ten (10) minutes or two (2) minutes at 132°C have been reached in a steam sterilizer.

Steam Sterilization Indicator Strips:

- Surgical and veterinary supplies:

- Place one steam sterilization indicator strip in each cloth pack.

- Paper pouch

- Place one steam sterilizer indicator strip in at least one pouch per load.

- Note: The steam sterilization indicator strip should be easily visualized without opening the pouch.

- Place one steam sterilization indicator strip under the load in the autoclave.

- ABSL-3 materials: Tape steam sterilization indicator strip to outside of load.

- Nesting and bedding materials:

- Place a steam sterilization indicator strip in the middle of the load if possible.

- Note: If it is not possible to place a steam sterilization indicator strip within the load, place it on the outside of the load.

- After the sterilization cycle has completed, confirm that the visible steam sterilization indicator strips have changed to the appropriate color. Note: The color change will vary with brand.

- If the sterilization strip does not change to the appropriate color, this indicates that adequate sterilization did not occur. Contact your supervisor for further instructions.

- ABSL-3, nesting, and bedding materials:

- Place steam sterilization strip(s) in an autoclave log or calendar and label with date.

[https://olac.berkeley.edu/SOP-%26-Guidelines WIN 615](https://olac.berkeley.edu/SOP-%26-Guidelines%20WIN%20615)

Name:	Cal Net ID:	Any questions?	
Trainer:	Date:	Verified By:	Date:
Trainer:	Date:	Verified By:	Date: