



## LTSF process developed in MACHANA sterilizer 130LF

LTSF process is a modified steam sterilization process that uses steam with the addition of formaldehyde as a sterilant (active agent). The process is carried out at subatmospheric pressure, with 2 different temperatures as per the selected cycle.

These are the main steps of the cycle:

### 1. Air Removal and Absorption

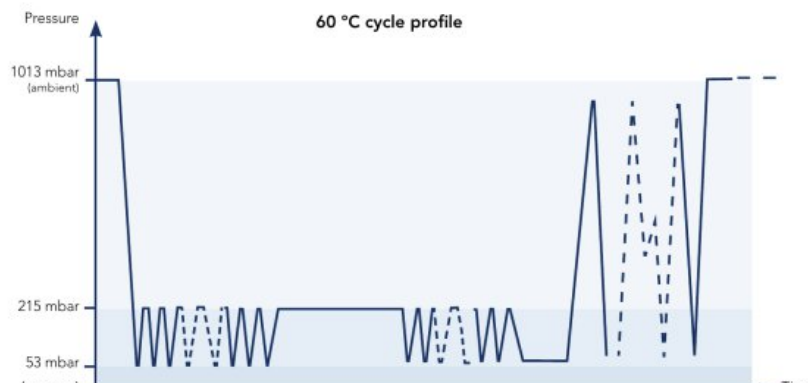
Transport of the effective media. The sterilizing agent must reach all surface areas of the medical device which shall be treated, in sufficient quantity. The sterilizer executes different consecutive phases of formaldehyde steam injection pulses (pressure increase) alternating with vacuum stages (air removal).

### 2. Sterilization – Holding time

Microbicidal interaction. The sterilizing agent must be available at defined concentration for a minimum of time at specified physical conditions. During this phase, the pressure in the sterilization chamber is kept at constant level via barometric adjusted pressure-control and re-feeding. During the entire reaction time of the media the sterilization chamber is automatically tested for tightness. If the pressure in the chamber exceeds a specific value above the working pressure (e. g. due to a leakage), a failure message is emitted.

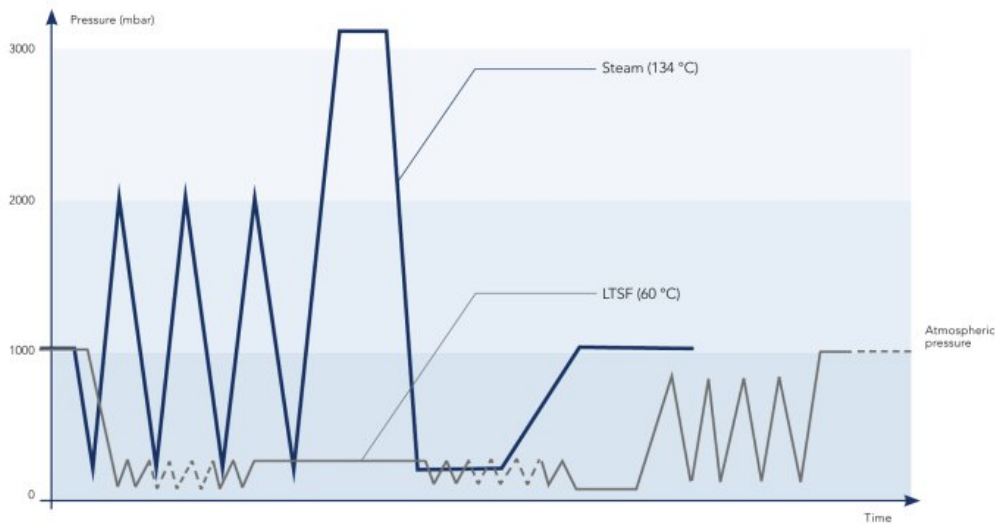
### 3. Desorption

The sterilizing agent and eventually further chemical reaction components must be fully removed from the medical devices by several vacuum pulses with steam. To do so, the air from the sterilization chamber is alternately evacuated and pure water steam is fed several times into the chamber. The program ends after a vacuum-drying phase and an aeration phase. Upon indication "Cycle End" the sterilizer may be opened and the sterilized materials unloaded and used with patients without extra-aeration needed.





## Comparative chart between LTSF and Steam Sterilization



The LTSF process has certain similarities with steam sterilization, both cycles have also a similar profile but with the following relevant parameters differences regards to temperature, pressure and time.

## Programs and applications

### Test program

**Vacuum test:** Program to test tightness of the sterilization chamber.

### Sterilization programs

#### 60 °C program: UNIVERSAL CYCLE

Sterilization time: 30 minutes

- Flexible endoscopes of all types, without restriction lumens, number of channels or diameters
- Electrical Scalpels
- PHACO emulsifiers
- Epidural pressure catheters
- Bipolar cables
- RX transducers
- Sternum saws
- Biopsy bottles
- X ray cover
- Ophthalaser boxes
- Ophthalaser gums
- Chondrotome

#### 78 °C program:

Sterilization time: 10 minutes

- Rigid endoscopes and their accessories
- Microsurgical instruments
- Ophtalmological instruments, including PHACO emulsifiers
- ECG and electro cables
- Light guides cables

Most of the materials that are sterilized with 60 °C program could be also sterilized at 78 °C. However, MATACHANA specially recommends this cycle for these type of items.

Low temperature sterilizer  
**Matachana 130LF**

.matachana.com

Characteristics

- Long and narrow lumens
- Ultrasound transducers, etc.

In a general way, any material compatible with ethylene oxide sterilization is likewise compatible with the LTSP process.

Of course, 78 °C program can be used for non thermo-labile materials which are normally sterilized by steam as their shelf life is extended by this sterilization method.

