

ETO CUM STEAM STERILIZER ...



SALIENT FEATURES :

Autoclave Steam Sterilizers are operated using external steam or with built in steam generators, depending upon the availability of the steam. Different cycles can be selected, depending upon the product to be sterilized

Contact parts like the chamber is made of S.S. 316 and jacket is made of S.S. 304.

Specially designed radial or sliding type door Locking..

Sturdy Square mounting for the equipment.

Tri-clover end connector is provided for the equipment with S.S. 304 / S.S. 316 piping.

Better temperature uniformity inside the chamber reduces the heat loss due to radiation.

Self locking safety features for doors is also provided, due to which the doors can't open under pressure.

Designed in compliance with the regulations laid down for pharmaceutical products to meet cGMP norms.

ETO STERILIZER FEATURES ...

EtO Sterilization

EtO sterilization is used for products that cannot withstand heat. An example of this is a catheter.

The most important parameters in an EtO process are RH, temperature and pressure. For EtO use, it is crucial to control RH and temperature within certain limits. Vacuum (pressure) is pulled to remove air prior to the introduction of EtO making sure the EtO gas permeates the product being sterilized.

A typical EtO sterilization cycle involves several stages and can basically proceed as follows:

Pre conditions: The product is exposed to a warm, humid environment for at least 12 hours (70%RH, 55°C) to ensure the product is at a uniform temperature and Humidity.

Exposure: Vacuum is pulled and EtO gas is introduced. The product is exposed for 4-8 hours usually. During the process the RH is kept at approx. 70% and the temperature at 55 °C.

Post conditions: The EtO gas is removed by repeatedly pulling a vacuum and then introducing air into the sterilization chamber until the EtO gas is cleared out (8-12 hours).

It should be noted that there is no standardized cycle for EtO sterilization. Generally there is a tremendous variety in exposure times and gas concentration.

The size of the sterilizers can range from small bench-top sterilizers to large rooms. Because of problems with toxicity and risk of explosion, many companies are choosing to contract out this work rather than perform it themselves. EtO use is therefore becoming very specialized and used by a small number of contract companies. A large part of all medical devices are sterilized by the EtO method.

To Sterilize Surgical Medical Device Products like I.V. Sets, Disposable Syringes, Disposable Surgical Set, catheter, Urin Bag, to reduce microbiological load; and increase life span of material.
Modular construction of chamber.
Model is available in Customize sizes as per requirement also.
Easy to operate.
Fully automatic operation based on PLC control (optional).
Fully automatic operation based on PLC control (optional).
Semi Automatic (Pneumatically Operated Ball Valave) Control
Contact parts are SS 304 / 316.
Process time about 8 hrs.
IQ/OQ/DQ documentation(OPTIONAL).
It is useful for prevention of micro biological contamination retaining flavour useful for treatment of spices, dried nuts, Foods Packed cereals etc

Construction ...

1. Main Vessel

* Inner Seal:

The chamber will be fabricated with a complete argon welded SS 316/304 nonmagnetic sheet.

2. Heating:

Water immersion Type Heating Element is fitted in Boiler which is made of SS316 .

3. VACUUM:

Vacuum pump/ventury for vacuum pulsing and air wash is used.

4. Automation:

The machine is provided with PID based or PLC based automation along with an LCD HMI which allows the operator to:

- (a) Change and set the parameters
- (b) Run the cycle according to pre-selected cycles.
- (c) Monitor various phases / individual parameters during the Process.
- (d) View on/off status of the various components of the machine while the cycle is in progress.

Software for controlling, monitoring and recording of various parameters is provided. This makes it possible to operate and monitor the machine by connecting it with any computer where the software is loaded, apart from running it from the machine itself.

The above devices control and regulate all the functions of the machine. It makes the system user friendly and allows the operator to change the process parameters as and when necessary.

The advantage of the above is that the system can carry out multiple programs. It includes features like

- i. Password protection for unauthorized access.
- ii. Analog input of process pressure/vacuum.
- iii. Digital/Analog input for temperature. Temperature is indicated in the sterilization area, by the use of a temperature sensor.
- iv. One pressure/vacuum sensor for display of the current pressure/vacuum, that the load is subjected to, at all times during the process.

5. CYCLE RECORD (Optional):

The Software provided maintains total records required for process parameters during the sterilization cycle. These records are necessary for meeting CE or EN550 norms of sterilization.

The software holds records in memory of the external drive for 6 months to one year. The data can easily be copied on a computer. Hence, this proves to be cost-effective as far as maintaining lengthy records is concerned. It eliminates the need for taking print-outs after every cycle and also saves on expensive thermal printing.

6. PIPING & VALVES:

All the fittings used for the accessories and the main vessel are fabricated from SS 316 stainless steel. All the valves used in the process lines are SS 304/brass/Teflon construction Ball valves. (All standard makes) .

7. TESTING:

Pressure testing and vacuum testing as per specified standards. (1.5 times the working pressure)

8. OPERATION:

The door closing is manual.

Model	Inner dimension (inch)	Capacity (Litres)	Heater load	Sterilization temp & pressure (for Autoclave)	Operating pressure (for Autoclave)
APS - ECSS - 75	16" x 24"	75	8 kW	1.2 Kg/cm ² (15-18psi) at 121°C	From 10 psi to 20 psi
APS - ECSS - 100	18" x 24"	100	8 kW		
APS - ECSS - 125	16" x 36"	125	10 kW		
APS - ECSS - 150	18" x 36"	150	12 kW		
APS - ECSS - 200	18" x 48"	200	16 kW		
APS - ECSS - 250	20" x 48"	250	16 kW		
APS - ECSS - 350	24" x 48"	350	22 kW		