

ETHYLENE OXIDE STERILIZER

Low Temperature Sterilization – ETO



Tabletop Automatic ETO Sterilizer



Cathlab /Hospital ETO Sterilizer

It is one of the most effective sterilization process at low temperature, and has more than 60 years of existence in the medical and pharmaceutical fields. Nowadays, the ETO sterilization process has been developed until reaching a high level of performance and efficiency. It is now a well proven technology for thermo-sensitive products, unable to be sterilized by others traditional sterilization methods like steam or dry heat process.

That chemical sterilization process is based on large gas diffusion (ethylene oxide or EO) able to annihilate the micro-organisms, is a low temperature sterilization method as it is usually used up to 60°C. Thanks to this important advantage, delicate products can be treated like syringes, latex gloves, catheters, etc. ETO is an ideal choice for low temperature sterilization with a low sterilizing cost, space saving and user-friendly features.

The EO gas sterilizer is designed to be used with Ethylene Oxide Gas Cartridge to provide a safe and effective low temperature sterilization process for Hospitals, Individual surgeons Research Centers, Laboratories, and Pharmaceutical applications.

ETO Sterilizer is widely used by Ophthalmic, Orthopedic, Cardiac, Laparoscopy & endoscopy surgeons all over the globe to reprocess there thermo sensitive (heat & humidity) instruments & devices. It is cost effective means of sterilization and reliable hence it's used worldwide by all medical device manufactures. It is also used in food grain, spices industries.

What is the ethylene oxide (EO)?

The Ethylene Oxide is a colorless and odorless gas, which the chemical properties allow:

- ✓ An excellent propagation into the porous materials.
- ✓ A high diffusion and absorption on the thermo-sensitive products (mainly plastics).
- ✓ A preservation of the material characteristics.

Thanks to those specifications, Ethylene Oxide (ETO/EO) gas is able to:

- ✓ Spread into creases and difficult access to be sterilized.
- ✓ Sterilize between 30°C and 60°C (low temperature) ensuring neither deformation nor destruction of the sterilized elements.
- ✓ Go across wrapping membranes that contain the product.

How does the Ethylene Oxide (EO / ETO) sterilization process work?

The sterilization process consists of 3 phases:

1 – Conditioning Phase

Preconditioning prepares the chamber environment to meet the ideal conditions for temperature, pressure and humidity. First air is removed from the chamber to allow for gas penetration. A leakage test is performed, to ensure that staff and environment are safe. Next, some steam is injected into the chamber and humidifies the load, since EtO is only effective in a humid environment. The chamber is heated by either steam or hot water which is present in the jacket. Normally the jacket is kept at the same temperature 24/7 to minimize temperature fluctuations. The working conditions are generally 30-60% RH, 30-60°C, at atmospheric pressure.

2 - Sterilization phase

The second stage is the actual sterilization process. The EtO enters the chamber via evaporation with a certain amount of steam to keep the humidity level up as well as to make sure the EtO is reaching all parts of the load. When the required concentration in the chamber and load is achieved the actual sterilization stage starts. The lower the gas concentration in the chamber the longer is the sterilization time. As EtO is absorbed by many kinds of plastic materials it is important to keep the concentration at the right level. To achieve this EtO is sometimes added to the chamber after a while. It is of major importance to ensure the appropriate concentration level of EtO in the chamber to achieve effective and safe sterilization.

3 - Ventilation or Aeration phase

This phase consists in ventilate the product sterilized, taking out all the EO residual particles from the cardboard, wrapping and product. It's done in the sterilizer by circulating air over load at a temperature of 30⁰ C to 60⁰ C at atmospheric pressure (with a slight negative pressure to avoid EO contamination to the sterilization place).

The Key parameters of this sterilization process which needs to be controlled until during the whole process, controlled until the end of the cycle, which also allow the process optimization:

- Gas concentration.
- Chamber temperature.
- Relative humidity.
- Exposure time.

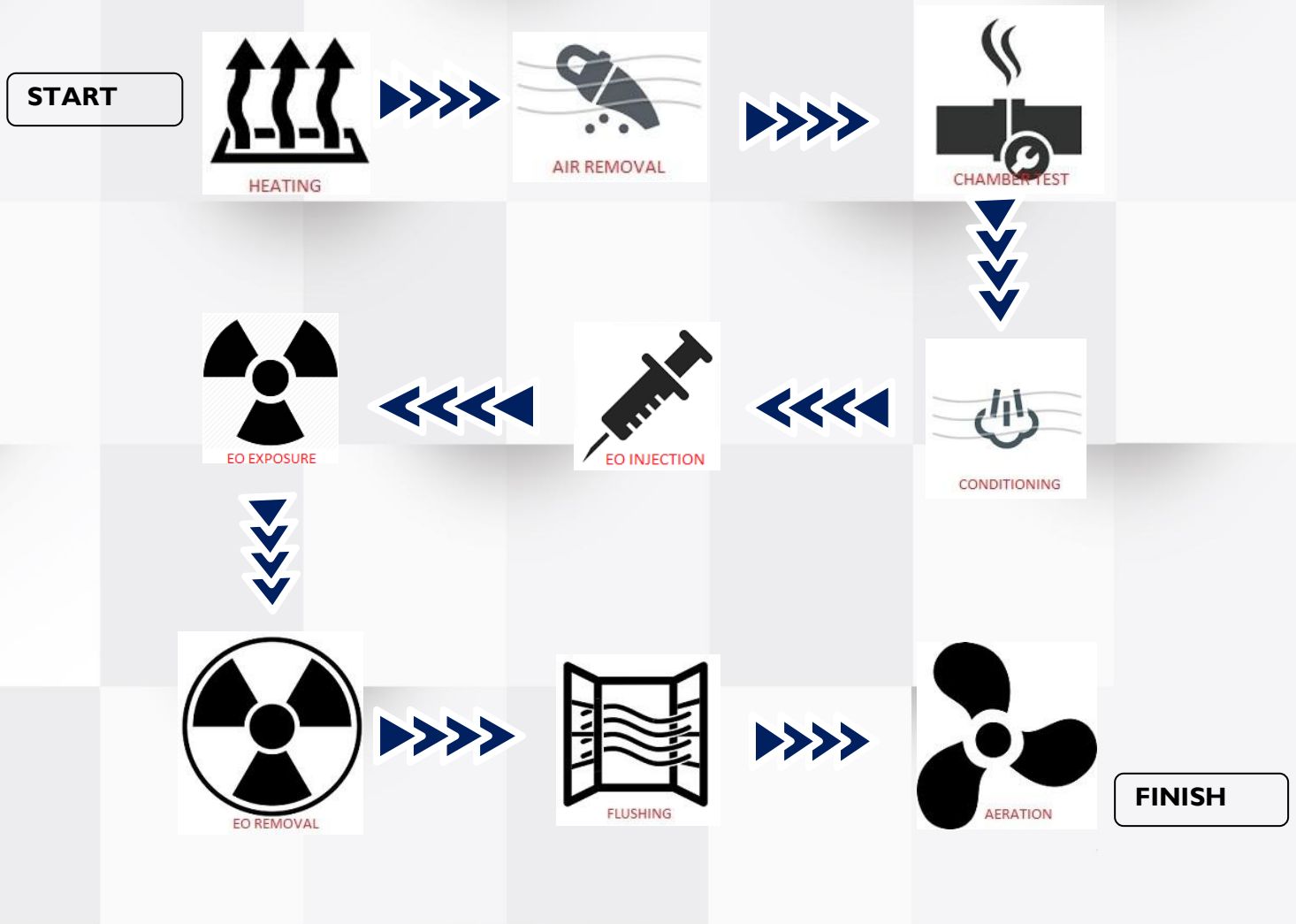
The ETO sterilization is nowadays, without any doubt, one of the most effective sterilization methods for thermo-sensitive products, and takes importance where traditional methods are limited. ETO Process doesn't alter physical qualities of the sterilized product. In other word, this method is one of the most sought for medical device treatment.

Sizes Available:

| Model Name | Volume (Cu.ft) | Chamber Size (inch) | Outer Dimensions |
|------------|----------------------|-----------------------------|-----------------------------------|
| ETO 35 Ltr | 35 Ltrs / 1.25 Cu.ft | 12" (H) x 12" (W) x 18" (D) | 21.5" (H) x 21.6" (W) x 24.5" (D) |
| ETO 50 Ltr | 50 Ltrs / 2.0 Cu.ft | 12" (H) x 12" (W) x 24" (D) | 21.5" (H) x 21.6" (W) x 31.0" (D) |

We also have other sizes 65 / 100 / 135 / 240 Ltrs for Cathlab & Hospital.

CYCLE PROCESS



STERIMAXX INC

"A reliable partner in Sterilization !!!"

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