

## Ethylene Oxide Myth Busters

### Myth #1

Ethylene Oxide is going to be banned.

### Truth

EtO is not being banned. The issue involves the restriction on CFC's and HCFC's that have been used as propellants in 12/88 or 10/90 blends in some systems. The production of CFC's was banned in the US as of January 1, 1996. Certain Hydroflourocarbons (HCFC's) are scheduled to be restricted in future compliance with the Montreal Protocol. All of this is unrelated with the Anprolene and EOGas systems which use 100% EtO.

### Myth #2

Ethylene Oxide is more toxic than other chemicals in the hospital work place.

### Truth

When comparing Time Weighted Averages (TWA) the Comparative Toxicities of Ethylene Oxide to other chemicals this chart clearly shows that higher allowable levels for EtO, proving that EtO is not any more toxic than other chemicals used in the workplace.

**COMPARATIVE TOXICITIES**

<b>SUBSTANCE</b>	<b>IDLH (NIOSH)</b>	<b>TWA (8 hours)</b>	<b>STEL</b>	<b>RQ (EPA)</b>
<b>Common Household Substances</b>				
Acetic Acid	50 ppm <sup>2</sup>	10 ppm <sup>6</sup>	15 ppm <sup>9</sup>	5000 lbs <sup>5</sup>
Ammonia	300 ppm <sup>2</sup>	50 ppm <sup>10</sup>	35 ppm <sup>10**</sup>	100 lbs <sup>5</sup>
Carbon Monoxide	1200 ppm <sup>2</sup>	50 ppm <sup>1</sup>	200 ppm <sup>1</sup>	none

Chlorine Bleach Based Upon a Sodium Hypochlorite Solution		.5 ppm <sup>19</sup>	1 ppm <sup>19</sup>	100 lbs <sup>5</sup>
Cidex	none	none		none
Drano Professional Strength Foamer	none	.5 ppm <sup>7</sup>	1ppm <sup>7</sup>	none
Fantastik All Purpose Cleaner w/ Bleach	none	.5 ppm <sup>20</sup>	1 ppm <sup>20</sup>	none
<b>Other Chemical Substances</b>				
Iodine	2 ppm <sup>2</sup>	0.1 ppm <sup>4</sup>		none
Ethylene Oxide	800 ppm <sup>2</sup>	1 ppm <sup>12</sup>	5 ppm <sup>12</sup>	10 lbs <sup>5</sup>
Formaldehyde	20 ppm <sup>2</sup>	0.75 ppm <sup>3</sup>	2ppm <sup>13</sup>	100 lbs <sup>5</sup>
Gluteraldehyde 2.4%	none	.2ppm <sup>23***</sup>	.05 ppm <sup>23**</sup>	none
Hydrogen Peroxide	75 ppm <sup>2</sup>	1 ppm <sup>14</sup>	none	1 lb <sup>18</sup>
Hydrogen Peroxide/Peracetic Acid Mix	75 ppm <sup>18</sup>	1 ppm <sup>18</sup>		1 lbs <sup>5</sup>
Ozone	5 ppm <sup>2</sup>	0.1 ppm <sup>9</sup>	.3ppm <sup>21</sup>	
Peroxitane Peracetic Acid		.15 ppm <sup>22*</sup>		
Radioactive Iodine				
Turpentine	800 ppm <sup>2</sup>	100 ppm <sup>16</sup>		

\* SAEL

\*\* ACGIH

\*\*\* NIOSH

We recommend that you proceed with caution with all chemicals you use in any situation. Using simple precautions can alleviate problems from happening. Knowing the safety guidelines for that item is extremely important.

We offer free training for the life of your Anprolene or EOGas sterilizer that will cover the safety features and operation of the machine. Call us at 800-523-1276 and ask for your area representative.

### Myth #3

Ethylene Oxide is only used for sterilizing delicate instruments.

#### Truth

EtO can be used to sterilize anything but food, drugs, or liquids. Since there is no heat, pressure, or moisture involved, there is no damage to even the most delicate instruments. Using your EtO sterilizer as your primary form of sterilization saves the life of everything you sterilize. You can cut back on overhead from instrument damage/replacement costs and also re-sterilize those things you might have thrown away therefore saving your facility a lot of money. We have practices that save \$30,000 per year or more. Call today for your load tracking sheet to see how much you save a month, or talk to your representative for a suggestive plan on what you could be sterilizing.

### Myth #4

Ethylene Oxide Sterilizers have to be installed outside the facility.

#### Truth

EtO converts from liquid to gas at 50 degrees Fahrenheit. Our Anprolene sterilizers operate at room temperature for a 14-hour sterilization cycle. If the unit is installed outside, then the temperature is not controlled and therefore sterilization may not be achieved when temperatures fluctuate. Sterilizers should be operated inside a facility in a room with 10 air exchanges per hour. It is safe to install them in any room of your facility; Airscan Monitoring badges allow you the comfort of knowing they pass OSHA's requirements within the workplace.

### Myth #5

Ethylene Oxide sterilization requires a large tank of Ethylene Oxide and use pounds of EtO per cycle.

## Truth

In 1928 when EtO was introduced to fumigate items being brought into the country as an insecticide in a 12/88 mixture it was used in a chamber capacity. A tank of EtO would mix with CFCs and under pressure pump into a room size chamber to sterilize the items inside. EtO was used in this fashion for some time in this market as well as hospital, industrial, laboratory, and government.

In the late 1950's Andersen Product's developed the gas diffusion technology of the Anprolene line. Anprolene and EOGas utilize less than 20cc of EtO per cycle enclosed in a liner bag, which acts as the chamber. The "chamber" or liner bag is contained in an aeration cabinet for the safe release of the EtO to exterior of the building.

By cutting the amount of ambient air the EtO has to deal with down the EtO can work more effectively and in smaller quantities.

Andersen strives each year to improve on the safety features of the aeration cabinet it designs, while the basic technology of EtO will always be the same.

## Myth #6

Ethylene Oxide an old and therefore inferior technology.

## Truth

In the 1950's it was introduced into the hospital arena for sterilization. In the year 2000 75% of US hospitals used EtO to sterilize their devices. While the methods for delivery have greatly changed, the technology is proven as the most effective, least damaging form of sterilization.

Anprolene and EOGas do not use the pounds and tanks of EtO that the grandfathers of the past once used, but they do take advantage of the non-damaging gentle cycle EtO is known for. Using less than 20cc's per cycle they can effectively sterilize without the hassles of a giant chamber system.

### Myth #7

Ethylene Oxide expensive compared to other forms of sterilization.

#### Truth

Anprolene and EOGas only require the gas refills; there is no external water source or heat source necessary. Distilled water and pressurized air sources can add up for other forms of sterilization. While the kit replacement cost is expendable, the money saved on overhead of sterilizing those delicate items more than makes up for it. You also do not have the maintenance of costly repairs associated with moisture and pressure. Anprolene and most of the EOGas models also run on regular 110V electricity, cutting back on those costs as well. So when comparing year-end savings, the advantages of having an Andersen system pay off.

### Myth #8

Ethylene oxide a greenhouse gas.

#### Truth

Ethylene oxide is not a greenhouse gas. It does not persist or accrue when released into the environment and is not on the EPA's list of greenhouse gasses.

### Myth #9

Ethylene Oxide requires special packaging.

#### Truth

EtO can use the same packaging as other forms of sterilization, such as cloth and paper products. The advantage to EtO is that we have a special double-sided plastic product that can be electric impulse sealed, allowing the shelf life of a product to extend past the 30-day rotation most pouches and wraps require. Since EtO does not use

heat, pressure, and moisture the plastic is durable, water resistant, and heat sensitive making double wrapping a thing of the past.

#### Myth #10

Ethylene Oxide require special installation.

#### Truth

Anprolene and EOGas only require a dedicated exhaust and 110/220V electrical for installation, making it the most simple installation on the market. We also are abator compatible, allowing for 99.8 omissions to the outside environment. Some types of EtO require aeration chambers, holding cells, air pressure tanks, water sources, and vacuum. Andersen systems are unique to the market, and do not require those things.