

MEETING OSHA'S ETHYLENE OXIDE REGULATIONS

THE OSHA RULES

OSHA regulations require Ethylene Oxide (EO) users to tightly control worker exposure to the sterilant. These regulations restrict permissible time-weighted-average (TWA) EO exposure of workers to 1 part per million (ppm) for an 8-hour workday and 5 ppm for any 15-minute period. In facilities where worker exposure may exceed these levels, employers must institute numerous measures to meet OSHA regulations. A facility is excused from these measures if it can document that worker exposure levels do not exceed those mentioned below under Initial Monitoring Results.

PERMISSIBLE EXPOSURE LIMITS & MONITORING STRATEGY

Permissible exposure level (PEL)	1.0 ppm	8hr	TWA
Action level	0.5 ppm	8hr	TWA
Short-term excursion (STEL)	5.0 ppm	15min	STEL

Initial Monitoring Results (PPM)		Periodic Monitoring Frequency (per year)	
8 hr	15 min	8 hr	15 min
<5.0	<5.0	---- none required ----	
<0.5	5.0	0	0
0.5-1.0	<5.0	2	0
0.5-1.0	>5.1	2	4
>1.0	<5.0	4	0
>1.0	>5.1	4	4

MONITORING STRATEGY & METHODS

The OSHA law pertains to exposure of individual workers. Requirements can be met by monitoring representative employees (when jobs entail similar duties) on the basis of 15-minute and 8-hour breathing zone samples associated with operations most likely to produce exposures above permissible limits. Accurate determinations of EO levels require careful attention to both collection and analysis.

The least expensive monitoring devices currently available are "badge" type monitors. Andersen products supplies such badge type devices, the AN93.

Electrochemical area monitors, such as the AN2600, may be used as aids in leak detection but should not be used for calculating a TWA.

ANDERSEN PRODUCTS' POLICY

Andersen Products manufactures sterilisation systems, which are capable of meeting both the "action level" and the "excursion limit" requirements. Our company supports OSHA guidelines, and we encourage all of our customers to follow these regulations.

OSHA REQUIREMENTS OF "ACTION LEVEL" OR "EXCURSION LIMITS" ARE EXCEEDED

- **Monitoring Program:** The facility must establish a monitoring program to ensure that worker exposure levels do not exceed the (PEL and STEL) limits
- **Training Program:** The facility must institute a documented training program. Workers who'll be exposed to EO above the (PEL) and (STEL) levels must learn the hazards of exposure and how to use the chemical properly
- **Medical Surveillance Program:** Workers who may be exposed > 30 days/year to EtO levels above the acceptable limits must undergo an annual comprehensive health examination
- **Restricted Areas:** If the 15 minute (STEL) or the 8 hour (PEL) levels are exceeded, OSHA regulations require the establishment of restricted area with limited employee access. Signs warning of cancer and reproductive hazards from exposure must identify these areas.