

ETHYLENE OXIDE

A Critical Building Block for the Fibers and Plastic Industry



Ethylene oxide (EO) is a versatile building block of chemistry. It helps make many of the products we use every day, such as electric batteries, safety glass, and adhesives.

One area where ethylene oxide is used is in the fibers and plastic industry in the U.S.

How is it used?

Ethylene oxide and its derivatives are used in the fibers and plastics industry to produce plastic bottles, packaging materials, and medical devices.

- ✔ Ethylene oxide is a key raw material in the production of polyethylene glycol (PEG). PEG is a polymer with diverse applications in the fibers and plastics industry. It is used as a plasticizer, surfactant, and emulsifier in the manufacturing of various plastic and fiber products.
- ✔ Ethylene oxide is involved in the production of polyethylene terephthalate (PET). PET is a commonly used polymer to make plastic bottles, containers, and fibers. It is widely used in the packaging industry and for textile applications.
- ✔ Ethylene oxide is a key component in the production of polyurethane foam. Polyurethane foams are used in the manufacturing of flexible and rigid foams, including those used in furniture, mattress toppers, and insulation panels.
- ✔ Ethylene oxide is used in the synthesis of surfactants, which are surface-active agents that find applications in the production of plastics and fibers. Surfactants help improve the wetting, dispersing, and foaming properties of these materials.
- ✔ Ethylene oxide is used in the treatment of textiles and fibers to enhance certain properties, such as wrinkle resistance and shrink resistance. Treated textiles may be used in various applications, including clothing and home furnishings.
- ✔ Ethylene oxide is used to ethoxylate various compounds. Ethoxylated compounds find applications in the production of surfactants, detergents, and emulsifiers used in the plastics and fibers industry.
- ✔ Ethylene oxide is a key component in the production of polyester fibers and films. Polyester fibers are used in the production of carpets, rugs, curtain fabrics, draperies, cushions, and throws.
- ✔ Polyester is also used in the production of medical textiles and some implantable medical devices. Polyester fibers are also used for non-woven fabrics for applications like filters and wipes.

The demands on our nation's manufacturing needs continue to grow. As the third largest exporter of textile-related products in the world, the textile/apparel industry is worth over 34 billion dollars with over 286,3000 jobs.¹ Overly conservative restrictions on the production of ethylene oxide could put the needs of the textile and \$432 billion plastics industry with more than 1 million plastic industry jobs² at risk.

Our member companies are dedicated to the responsible manufacture and use of ethylene oxide, and we support strong, science-based regulation of this important chemistry.

¹ National Council of Textile Organizations

² Plastics Today

