

IS 5573 : 1984 SPECIFICATION FOR ETHYLENE OXIDE

Ethylene oxide (EO) is a **colorless, flammable gas** with a slightly sweet odor. It is a **highly reactive compound** and plays a crucial role in the **chemical industry** as an intermediate in the production of various chemicals. Ethylene oxide is primarily used for the synthesis of **ethylene glycol**, which is a key ingredient in antifreeze, polyester, and other products. It is also used as a fumigant for foodstuff, in textiles and pharmaceutical industry.

Consumers anticipate **high-quality, effective products** that meet stringent **health and safety standards**, particularly in **medical device sterilization** and **pharmaceuticals**, where safety and precision are crucial. As a highly toxic and flammable compound, there is an increased demand for **strict regulatory compliance**, transparent labeling, and **hazard mitigation** in handling, and transportation to protect both consumers and the environment.

IS 5573 specifies the requirements such as Description wherein it has been mentioned that **EO** shall be transparent, **colourless** gas or liquid, free from any suspended or entrained matter, and shall have a sweet odour. It shall be soluble in water and organic solvents. Apart from description other specifications such as **Colour**, Aldehydes (as acetaldehyde content), **Moisture content**, Acidity, **Non-volatile matter**, **Ethylene oxide content** etc. have also been specified in IS 5573.

The Standard also states the precaution to be taken while handling, use and storage of the products, owing to the flammability and toxicity of EO in its liquid and vapour states and also owing to the dangers inherent in the combustion or explosive decomposition of EO. Reference has been made to **Gas Cylinder Rules, 1940 of the Government of India** for packaging and marking requirements in cylinders, rail tank-cars and road tankers.