



EUREKA

ETO ANALYSIS

WHAT IS ETHYLENE OXIDE (ETO)?

Ethylene oxide (ETO) is an irritating, carcinogenic, mutagenic, and anesthetic gas which is used to control insects as a fumigant. It is used in high-temperature processes which may damage certain products such as herbs, spices and seeds.

ETO is generally used to prevent microbial contaminants such as Salmonella sps and E. coli sps, reduce bacterial loads, yeast and mold, coliforms and other pathogens. It is also used as a pesticide to control pests. It is employed instead of high temperature processes that may damage certain products such as herbs, spices and seeds. Regarding the chemical properties of Ethylene oxide (EO), it is a colorless, flammable, highly reactive, toxic gaseous organic compound with a characteristic ethereal odor.

Exposure to ethylene oxide causes major irritation to the eyes, skin, and respiratory tract. It induces nausea, vomiting and central nervous system depression. Ethylene oxide is mutagenic to humans and chronic exposure is associated with an increased risk of cancer. 2-Chloroethanol is more toxic to kidneys, causing damage to the heart, liver and kidneys as well as respiratory failure. It could be fatal in some cases. Exposure to 2-Chloroethanol can sometimes lead to death.

REGULATIONS

Due to the carcinogenic and mutagenic concerns, the EU has proposed separate maximum residual limits (MRLs) for ethylene oxide and its primary metabolite, 2-chloroethanol, in different food and agriculture commodities.

From September 2020 to February 2021, there were 500 rapid alerts notified by "European Commission RASFF" for India for Ethylene oxide on different commodities like sesame seed, cereals and bakery products (bread sticks, bread, amaranth), herbs and spices (psyllium powder, dried shallots, curry powder), other food products/ mixes (chilli flavored/ ginger flavoured chickpea spread).

The recent recall of sesame seeds exported from India due to the RASFF alert has put the spotlight on the issue of ETO residues in food. The EU has published the regulation 2020/1540 which controls sesame seeds at the borders. The maximum residue level of 0.05 mg/kg is applicable for ethylene oxide in accordance with Regulation (EC) No. 396/2005.

The EU has proposed separate maximum residual limits (MRLs) for ethylene oxide and its primary metabolite 2-chloroethanol in different food and agriculture commodities ranging from 0.02 to 0.1 mg/kg (Commission Regulation (EU) 2015/868).

WHY US?

Eureka is the first NABL accredited laboratory for Ethylene oxide (ETO) testing in India. We can provide the **ETO Residue Analysis along with 2-Chloroethanol in all matrices with an LOQ of 0.01 mg/kg within the TAT of 2 days.** We assure you of our best services at all times and that your products are safe to market, reducing risk to all stakeholders involved in your global food chain. Testing of food matrices for ethylene oxide contamination using the GC-MS technique in our labs