Ethylene Oxide (EtO)

Background

EtO is listed as a hazardous air pollutant in the 1990 Clean Air Act Amendments. In December 2016 the U.S. Environmental Protection Agency (EPA) updated its EtO inhalation cancer risk estimate. The prior estimate was based on experimental animal results, while the 2016 estimate relies more on human study data. Formerly categorized as a probable carcinogen, the 2016 update concluded that EtO is carcinogenic to humans, in agreement with the International Agency for Research on Cancer (2012). Human studies show that sufficient exposure to EtO may result in lymphoid cancer and breast cancer in females.

Depending on exposure assumptions, the updated EtO inhalation cancer risk estimate is about 30-60 times higher than prior values. This means EPA now believes EtO is considerably more potent than previously thought for inducing human cancer. Evidence considered in the 2016 update indicates that children under 16 years of age have greater susceptibility to EtO's inhalation cancer risk. The updated EtO cancer potency information supports the need to reduce EtO air emissions.

R3 EtO PA facilities with risks greater than 100 in a million*:

B Braun Medical, Inc., Allentown, PA (Commercial sterilizer) Major source—3.3 TPY EtO emissions

R3 EtO PA facilities with risks approximately 50 in a million*:

Oakland VA Medical Center, Pittsburgh, PA (Hospital sterilizer) Minor source—0.002 TPY EtO emissions

**While EtO is the primary risk driver at this location, the total risk includes other air pollutants.*

CAA Compliance Summary – compiled from EPA's ECHO Database.

- B. Braun Medical, Inc. – Allentown, PA; CAA Major Source. Last CAA On-site inspection from PADEP 3/14/2018, last CAA Off-Site Inspection 6/12/18. EPA ECHO Database does not show any formal enforcement actions within the last five years by either PADEP or EPA. Commercial Sterilizer.

- Oakland VA Medical Center – Pittsburgh, PA – CAA Synthetic Minor Source. Last CAA On-Site Inspection from PADEP 8/25/2016, last CAA Off-site inspection 9/11/14. ECHO Database does not show any formal enforcement actions within the last five years by either PADEP or EPA. Hospital/ Sterilizer.