



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RESEARCH AND DEVELOPMENT
National Center for Environmental Assessment
Washington, DC 20460

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NCEA Washington Office (8623D)

MEMORANDUM

SUBJECT: Request for SAB review of the Draft Ethylene Oxide (EtO) Carcinogenicity Assessment

David A. Bussard

FROM: David A. Bussard, Director
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Office of Research and Development

TO: Sue Shallal, Ph.D.
Designated Federal Officer
EPA Science Advisory Board Staff Office (1400F)

This is to request a review by the Science Advisory Board of the draft document entitled "Evaluation of the Carcinogenicity of Ethylene Oxide". This document is an assessment of the carcinogenicity of ethylene oxide (EtO). The assessment was prepared by the National Center for Environmental Assessment (NCEA), which is the health risk assessment program in the Office of Research and Development. The document has been made available for public comment on the Agency's NCEA web site at the following URL:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=157664>. The assessment broadly supports activities authorized in the 1990 Clean Air Act and is of particular interest to EPA's Office of Air and Radiation. However, the assessment should also be applicable to the needs of all program Offices and Regions in evaluating the carcinogenicity of EtO.

EPA last published an assessment of the potential carcinogenicity of EtO in 1985. The current assessment reviews the more recent database on the carcinogenicity of EtO. The scientific literature search for this assessment is generally current through June 2004, although a few later publications are included. This assessment focuses on lifetime cancer risk from inhalation exposure.

EtO is a gas at room temperature. It is manufactured from ethylene and used primarily as a chemical intermediate in the manufacture of ethylene glycol. It is also used as a sterilizing agent for medical equipment and as a fumigating agent for spices. The largest sources of human exposure are in occupations involving contact with the gas in plants (facilities) and in hospitals

that sterilize medical equipment. EtO can also be inhaled by residents living near production or sterilizing/fumigating facilities. This document describes the derivation of inhalation unit risk estimates for cancer mortality and incidence based on human epidemiological data.

Attached is a draft of a charge to the Science Advisory Board that identifies the questions and issues we want the Science Advisory Board to address in reviewing the document.

Attachment