Office of Environmental Health Hazard Assessment

Joan E. Denton, Ph.D., Director
Headquarters • 1001 I Street • Sacramento, California 95814
Mailing Address: P.O. Box 4010 • Sacramento, California 95812-4010
Oakland Office • Mailing Address: 1515 Clay Street, 16th Floor • Oakland, California 94612

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

March 16, 2009

Len Welsh, J.D., M.S.
Chief, Department of Occupational Safety and Health
1515 Clay Street, Suite 1901
Oakland, California 94612

Dear Mr. Welsh:

The purpose of this letter is to give you some background information on naphthalene and its status in California, in anticipation of the discussion of this chemical at the March 25, 2009 meeting of the Health Expert Advisory Committee (HEAC).

Naphthalene is a common air pollutant; it is an industrial intermediate and a component of some fuels. It is emitted into the atmosphere primarily from fugitive emissions connected with the production and use of petroleum fuels and from vehicle exhaust. Naphthalene can be present in soil and groundwater contaminated with diesel and gasoline fuels.

Naphthalene was listed under Proposition 65 as known to the State of California to cause cancer on April 19, 2002 based on studies conducted by the National Toxicology Program (NTP). NTP found clear evidence of a carcinogenic effect in rats exposed to naphthalene. The tumors observed were so rare that they had never been observed in the historical control population, a highly unusual finding. Naphthalene was listed as "reasonably anticipated to be a human carcinogen" in the 11th Report on Carcinogens (ROC) in 2004, following a unanimous vote of a national committee of scientists. International scientists concur: Naphthalene was classified as Group 2B (possibly carcinogenic to humans, based on sufficient evidence of cancer in animals) by the International Agency for Research on Cancer in 2002.

Naphthalene is identified as a Toxic Air Contaminant (TAC) in California as a result of its listing as a U.S. Hazardous Air Pollutant. In view of the importance of naphthalene as an air pollutant, its known carcinogenicity, and the availability of adequate cancer dose-response data, the Office of Environmental Health Hazard Assessment (OEHHA) derived a cancer unit risk value under the TAC program. The process of developing a unit risk value includes public comment, OEHHA response to comment, and review by the California Air Resources Board's Scientific Review Panel (SRP). The SRP concurred with OEHHA's evaluation of the cancer dose-response data for naphthalene, unanimously approving the risk assessment on May 19, 2004.

The cancer dose-response assessment conducted for the TAC program was used as the basis for developing a No Significant Risk Level (NSRL) under Proposition 65. The process of developing the naphthalene NSRL included three public comment periods and a public hearing. In response to the public comments received, the technical support document for the proposed regulatory level for naphthalene was updated and other comments were addressed in the Final Statement of Reasons (http://www.oehha.ca.gov/prop65/law/pdf_zip/FSRSet5Naphth0805.pdf). The NSRL for naphthalene was finalized on June 21, 2005.

All of the scientific evidence on the carcinogenicity of naphthalene, including mechanistic considerations, was carefully considered as part of the above processes. State, national and international bodies of scientific experts that have reviewed the recent science on the compound recognize it to have carcinogenic potential in humans. The current Permissible Exposure Limit (PEL) for naphthalene does not take into account the carcinogenic effects, and estimated cancer risks to workers exposed at the PEL for their working lifetime are high. The table below shows recommended PELs for a range of cancer risks, based on an assumed worker exposure scenario. Note that these recommended PELs do not take into account technical or economic feasibility, which can be considered by the Department of Occupational Safety and Health in establishing the final PEL.

Cancer risk	Recommended PEL[1] (ppm)
1 in 100,000	0.0003
1 in 10,000	0.003
1 in 1,000	0.03

[1] Based on worker exposure of 5 d/wk, 50 wk/yr, 40 yrs; breathing rate of 10 m^3 during workday.

Please feel free to contact me at (510) 622-3202 if you have any questions.

Sincerely,

George Alexeeff, Ph.D., D.A.B.T
Deputy Director for Scientific Affairs