FACT SHEET

BENZENE

CAS #: 71-43-2

This fact sheet provides a summary of the Development Support Document (DSD) created by the Toxicology Section (TS) of the Texas Commission on Environmental Quality (TCEQ) for the development of Regulatory Guidelines (ESL and ReVs) for ambient exposure to this chemical. For more detailed information, please see the DSD or contact the TS by phone (1-877-992-8370) or e-mail (tox@tceq.texas.gov).

What is benzene?

Benzene is a clear liquid that readily evaporates into the air. Benzene is a widely used industrial chemical. It is used to make glues and lubricants to certain drugs, and it is also contained in crude oil and gasoline. It is also called annulene, benzol, benzole, coal naphtha, cyclohexatriene, phene, phenyl hydride, pyrobenzol, pyrobenzole, polystream, benzol coal naphtha, benzine, motor benzol, and mineral naphtha.

How is benzene released into ambient air?

Benzene is released into the air from a variety of sources, including the production of gasoline, gasoline stations, exhaust from your car, tobacco smoke, and natural sources (volcanoes, forest fires). The United States Environmental Protection Agency has indicated that benzene emissions from mobile sources (automobiles, construction equipment, lawnmowers, etc.) account for about two-thirds of the total benzene emissions in Texas, with major facility sources and area/other sources (refineries, gas stations) comprising the remainder.

How can benzene affect my health?

Permitted levels of benzene should not cause adverse health and welfare effects. Both human and laboratory animal studies indicate that damage to blood cells is the most sensitive effect of breathing high levels of benzene. Some occupational workers, who have been exposed to some of the highest air concentrations of benzene for years, experienced a decrease in the number of white blood cells circulating in their blood. Short-term studies in laboratory animals exposed to high benzene air concentrations have confirmed that effects on blood cells are the main concern.

Workers exposed to long-term, high concentrations of benzene in the air have also shown a higher occurrence of cancer known as acute myelogenous leukemia (AML). As a result, several agencies, such as the TCEQ, the United States Environmental Protection Agency, the National Toxicology Program, and the International Agency for Research on Cancer, have designated benzene as a human carcinogen.

Is benzene odorous or harmful to plants?

Benzene has a sweet-solventy odor at high concentrations. No information was located regarding the potential effects of benzene on plants.

Why does the TCEQ set Regulatory Guidelines for benzene?

The TCEQ has set various air quality guideline levels (ESLs and ReVs) to protect human health and welfare. Please see Definitions of ESLs, ReVs, and AMCVs located on the TCEQ DSD webpage for more information. The ESLs and ReVs for benzene have been designed to protect the general public from short-term and long-term adverse health and welfare effects. The general public includes children, the elderly, pregnant women, and people with pre-existing health conditions. If you would like to know more about the specific ESLs and ReVs developed, what the values are and what they are used for, please see the DSD.