FACT SHEET

1,4-Dichlorobenzene

CAS #: 106-46-7

This fact sheet provides a summary of the Development Support Document (DSD) created by the Toxicology Division (TD) 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 TD by phone (1-877-992-8370) or e-mail (tox@tceq.texas.gov).

What is 1,4-dichlorobenzene?

1,4-dichlorobenzene, also commonly known as para- or p-dichlorobenzene, contains two chlorine atoms connected to one benzene molecule. It is a colorless to white solid commonly used to make mothballs, deodorant blocks for garbage cans and restrooms, to help control odors in animal-holding facilities, as an insecticide on fruit, and to control mold and mildew growth on tobacco seeds, leather, and some fabrics. Recently, using 1,4-dichlorobenzene to make resins has become very important. It is not known to occur naturally.

How is 1,4-dichlorobenzene released into ambient air?

1,4-dichlorobenzene sublimates, that is, slowly changes from a solid into a vapor and is released into the air. Humans are exposed to 1,4-dichlorobenzene mainly by breathing vapors from 1,4-dichlorobenzene products used in the home and workplace. People who work or live in buildings where air fresheners, toilet block deodorants, or mothballs containing 1,4-dichlorobenzene are used are expected to have higher exposure to this compound. Workers can be occupationally exposed to 1,4-dichlorobenzene in workplace air at much higher levels than the general public is exposed. In addition, 1,4-dichlorobenzene can be emitted from industrial facilities or hazardous waste sites.

How can 1,4-dichlorobenzene affect my health?

Permitted levels of 1,4-dichlorobenzene should not cause adverse health and welfare effects. Human studies in occupationally-exposed workers have shown that the most sensitive effect of short- and long-term inhalation exposure to high levels of 1,4-dichlorobenzene is eye and nose irritation. Nose and eye irritation findings in humans are consistent with nasal lesions observed in laboratory animals exposed long term.

There are limited data in laboratory animals that long-term exposure to 1,4-dichlorobenzene may cause cancer, at least when ingested. Due to a lack of human data and differences in how the animal cancer data are viewed, there is inconsistency in how various national and international agencies have classified 1,4-dichlorobenzene as to the likelihood that it may cause cancer in humans. For numerous reasons discussed in the DSD, animal cancer data are considered by TD

to be inadequate at this time for conducting a cancer assessment relevant to inhalation exposure to 1,4-dichlorobenzene with an acceptable level of confidence.

Is 1,4-dichlorobenzene odorous or harmful to plants?

1,4-dichlorobenzene has a mothball-like, penetrating odor. No information was located regarding the potential effects of 1,4-dichlorobenzene on plants.

Why does the TCEQ set Regulatory Guidelines for 1,4-dichlorobenzene?

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 1,4-dichlorobenzene 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.