FACT SHEET

Vinyl Chloride

CAS #: 75-01-4

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 Vinyl Chloride?

Vinyl chloride (VC) is a colorless gas with a mild, sweet odor. VC is a man-made chemical and is one of the highest production volume chemicals in the world. It is used mainly in the production of polyvinyl chloride polymers (PVC). PVC is used to make automotive parts, packaging products, pipes, construction materials, furniture, and a variety of other products. It is also called chloroethene, chloroethylene, ethylene monochloride, and monochloroethene.

How is Vinyl Chloride released into ambient air?

VC may be released into the air at places where it is produced or used to make PVC. It may also be detected at higher concentrations in air at hazardous waste sites or municipal landfills.

How can Vinyl Chloride affect my health?

Permitted levels of VC should not cause adverse health and welfare effects. Short-term inhalation exposure to high levels of VC in humans can cause central nervous system depression including headaches, dizziness, drowsiness, and/or loss of consciousness. Well conducted human studies involving the long-term adverse health effects of VC were not available; therefore, laboratory animal studies were used to develop health protective values. The long-term laboratory animal studies showed that damage occurred mainly in the liver from exposure to high levels of VC.

Epidemiologic studies provide clear and consistent evidence of a causal association between VC exposure and the development of liver cancer. VC has also been shown to cause liver cancer by the oral and inhalation routes of exposure in multiple animal species including rats, mice, and hamsters. As a result, VC has been classified as a known human carcinogen by numerous sources including the United States Environmental Protection Agency, the International Agency for Research on Cancer, and the National Toxicology Program, and the TCEQ.

Is VC odorous or harmful to plants?

VC has a mild, sweet odor; however, there were no acceptable studies on which to base an odor

value. The TD did not find any studies that describe any potential harmful effects in plants.

Why does the TCEQ set Regulatory Guidelines for VC?

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 VC 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 preexisting 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.