FACT SHEET

Ethylene

CAS #: 74-85-1

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 ethylene?

Ethylene is a gas produced in high volumes by the petrochemical industry and is mainly used as an intermediate in the production of other chemicals and in the ripening of fruits and vegetables. It is produced through natural and man-made activities. Ethylene is a colorless gas with a faint sweet odor. It is a liquid under pressure. At sufficiently high concentrations, it is a highly-flammable volatile gas that is considered to be a fire hazard. It is also called acetene, elayl, olefiant gas, Refrigerant 150, ethene, UN1038 (refrigerated liquid), UN1962 (compressed liquid), athyllen [German], bicarburretted hydrogen, Caswell No. 436, EINECS 200-815-3, EPA Pesticide Chemical Code 041901, etileno, and HSDB 168.

How is ethylene released into ambient air?

A large proportion of ethylene in urban air is due to automobile emissions. Industrial contributions of ambient ethylene are mainly due to emissions from stacks, flares, and leaks in pipe fittings. Ethylene may also be released naturally into ambient air by microbes, plants, and mammals.

How can ethylene affect my health?

Permitted levels of ethylene should not cause adverse health and welfare effects. Both human and laboratory animal studies indicate ethylene to be relatively non-toxic. However, at high concentrations, ethylene can lower oxygen concentrations and act as an asphixiant. IARC has classified ethylene as a Group 3, which indicates that it is not classified as a human carcinogen.

Is ethylene odorous or harmful to plants?

Ethylene has a faint sweet odor. While ethylene is an essential plant hormone, high concentrations of ethylene can be harmful to plants. Many studies have reported plants to be more sensitive to ethylene than humans.

Why does the TCEQ set Regulatory Guidelines for ethylene?

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 ethylene 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.