FACT SHEET

1,1,1-Trichloroethane

CAS #: 71-55-6

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

What is 1,1,1-trichloroethane?

1,1,1-Trichloroethane is a synthetic chemical and is a colorless liquid that readily evaporates into the air. Historically, it was used extensively in industry and in common household products as a solvent in glues and paints, as well as used in degreasers, cleaners and lubricants. Currently, it is primarily used as a precursor chemical for the synthesis of hydrofluorocarbons. It is also called 1,1,1-TCA; 1,1,1-TCE, methylchloroform, methyltrichloromethane, trichloromethylmethane and α-trichloromethane.

How is 1,1,1-trichloroethane released into ambient air?

1,1,1-Trichloroethane may be released to the environment by process and fugitive emissions during its manufacture and formulation, use in industrial products, and historical use in common consumer products. Small amounts of 1,1,1-trichloroethane may be released from coal-fired power plants, from incineration of hospital and industrial wastes, as well as incineration of municipal waste water sludge.

How can 1,1,1-trichloroethane affect my health?

Permitted levels of 1,1,1-trichloroethane should not cause adverse health and welfare effects. Available human and animal data indicated that short-term inhalation exposure to high concentrations of 1,1,1-trichlroethane can affect the central nervous system by showing subtle behavioral effects. Long-term inhalation exposure to high concentrations can result in mild liver damage.

1,1,1-Trichloroethane is regarded as not classifiable as to its carcinogenicity to humans by the United States Environmental Protection Agency. In addition, the International Agency for Research on Cancer, the National Institute for Occupational Safety and Health, and the TCEQ have determined that 1,1,1-trichloroethane is not classifiable as a human carcinogen.

Is 1,1,1-trichloroethane odorous or harmful to plants?

1,1,1-Trichloroethane has a sweet, sharp odor at high concentrations. No information was located regarding the potential effects of 1,1,1-trichloroethane on plants.

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

The TCEQ has set various air quality guideline levels (ESLs, AMCVs 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 air quality guideline levels for 1,1,1-trichloroethane have been designed to protect the general public from short-term and long-term adverse health and welfare effects. The general public includes sensitive populations such as children, the elderly, pregnant women and people with preexisting health conditions. If you would like to know more about the specific ESLs, AMCVs and ReVs developed, what the values are and what they are used for, please see the DSD.