# FACT SHEET

# STYRENE

# CAS#: 100-42-5

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 styrene?**

Styrene is a colorless to slightly yellowish oily liquid with a sweetish, sharp odor. It is widely used for the manufacture of polystyrene, rubber resins, and insulators. It is a common cross-linking agent in glass fiber-reinforced and unsaturated polyester resins. Styrene-butadiene rubber has been the most widely employed type of synthetic rubber. Styrene is also called ethenylbenzene, phenylethylene, and vinylbenzene.

**How is styrene released into ambient air?**

Styrene emits into the air at places where it is produced or used for the manufacture of plastics, rubber and consumer products containing styrene.

**How can styrene affect my health?**

Permitted levels of styrene should not cause adverse health effects. Well-conducted human studies were available for developing the short-term health protective values. Short-term (one hour or less) inhalation exposure of humans to high concentrations of styrene can result in eye, nasal and throat irritation. Central nervous system effects include changes in color vision, tiredness, feeling drunk, slowed reaction time, concentration problems, and balance problems.

Long-term inhalation exposure of humans to high concentrations of styrene can result in neurological effects including changes in color vision, tiredness, feeling drunk, slowed reaction time, concentration problems, and balance problems, and increased clinical symptoms such as dizziness, tiredness, memory loss, and feeling drunk. No epidemiologic evidence has been published to date to conclude that styrene exposure presents an excessive carcinogenic risk to humans. However, inhalation studies in rodents have demonstrated that styrene induces lung tumors in mice but not in rats. The International Agency for Research on Cancer has designated styrene as *"possibly carcinogenic to humans (Group 2B)".* The United States Environmental Protection Agency and the TCEQ has classified styrene as "Data are inadequate for an Assessment of Human Carcinogenic Potential" of styrene.

**Is styrene odorous or harmful to plants?**

Styrene may have a slightly sweetish, sharp odor at moderate levels. However, styrene has not been shown to have an adverse effect on plants.

**Why does the TCEQ set Regulatory Guidelines for styrene?**

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 styrene 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.