FACT SHEET

Phenol

CAS Numbers: 108-95-2

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

What is phenol?

Phenol is a chemical that occurs naturally in the environment; however the largest sources of phenol are man-made. Phenol is used in the production of a wide variety of manufacturing and consumer products. Phenol is also present in medicinal products such as ointments, lotions, and analgesic rubs, and household items such as paint and soap. Phenol can exist as either a liquid or as a white crystalline solid that is very soluble in water. It has an aromatic, sweet and acrid odor. Synonyms for phenol include benzenol, phenylic acid, and hydroxybenzene.

How is phenol released into ambient air?

Phenol may be released into the air primarily from industrial storage tank vents and during industrial transport loading; it may also be released from industrial combustion processes. Other major sources are residential wood burning and automobile exhaust. Phenol is also found in cigarette smoke. Because phenol can be in solid or a liquid state, it can be released into the air as a vapor or as a particulate.

How can phenol affect my health?

Permitted levels of phenol should not cause adverse health and welfare effects. Well conducted animal studies demonstrate that phenol acts as an irritant, and tissue damage, inflammation, and irritation may occur at the site of absorption/contact. Animal studies have suggested that phenol at very high concentrations can interfere with the central nervous system, resulting in a loss of coordination and balance in some animals. Long-term animal studies have indicated that phenol may cause effects on other organ systems such as the liver and kidneys. There are no human or animal studies indicating phenol has the potential to cause cancer in humans. Phenol has not been classified as causing cancer by the International Agency for Research on Cancer (IARC) or other government agencies (e.g., USEPA, or National Toxicology program).

Is phenol odorous to humans or harmful to plants?

Phenol has a very distinct aromatic and acrid odor, smelling overly sweet and tarry at moderate concentrations. Phenol has not been shown to have an adverse effect on plants.

FACT SHEET

Phenol

CAS Number: 108-95-2

Why does the TCEQ set Regulatory Guidelines for phenol?

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 DSD webpage for more information. The air quality guideline levels for phenol 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 on the TCEQ website.