FACT SHEET

4-Vinylcyclohexene

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 4-Vinylcyclohexene?

4-Vinylcyclohexene (VCH) is a clear colorless liquid with a pungent smell that readily evaporates into the air. It is mainly used in organic synthesis of polymers and as an intermediate for the production of vinylcyclohexene dioxide, which is used in the production of epoxy resins. VCH is used as a precursor for plasticizers and as an intermediate for certain types of insecticides. It is also called 4-ethynyl-1-cyclohexene, 4-ethenylcyclohexene, cyclohexenylethylene, and butadiene dimer.

How is VCH released into ambient air?

VCH may be released to the environment from various waste streams or waste water treatment plants, from organics and plastics plants, and from rubber processing plants. It can also be released into the air as fugitive emissions during downstream processing as a chemical intermediate and may be present in copolymers used as a coating for food packaging.

How can VCH affect my health?

Permitted levels of VCH should not cause adverse health and welfare effects. Available animal data indicate that short-term inhalation exposure to high concentrations of VCH can affect the central nervous system. VCH exposure produced decreased responsiveness, inactivity, and caused sleep in rodents. Long-term inhalation exposure to high concentrations can result in lethargy and tremors in rodents and can cause decreased reproductive capability in females.

The International Agency for Research on Cancer classified VCH as possibly causing cancer in humans and the American Conference of Governmental Industrial Hygienists has classified VCH as a confirmed animal carcinogen with unknown relevance to humans. The TCEQ has determined there is inadequate information to assess cancer potential via inhalation to VCH since only oral and dermal cancer studies are available.

Is VCH odorous or harmful to plants?

VCH has a pungent odor at medium concentrations. Its smell has also been described as a sweet aromatic odor. No information was located regarding the potential effects of VCH on plants.

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4-Vinylcyclohexene

CAS #: 100-40-3

Why does the TCEQ set Regulatory Guidelines for VCH?

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 VCH 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.