FACT SHEET

Acrylonitrile

CAS Numbers: 107-13-1

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 Toxicology Division by phone (1-877-992-8370) or e-mail (tox@tceq.texas.gov).

What is acrylonitrile?

Acrylonitrile is a highly volatile, flammable, explosive, colorless liquid with a sharp garlic-onion odor. Acrylonitrile is a man-made chemical. Acrylonitrile is widely used in the production of plastics, synthetic rubber, and nitrile elastomers.

How is acrylonitrile released into ambient air?

Acrylonitrile is released into the environment through volatilization from industrial production and processing to air and wastewater. It is a liquid at room temperature. During the manufacturing process, this chemical may volatilize, and, in this state, acrylonitrile vapor can react quickly with other chemicals in the air.

How can acrylonitrile affect my health?

Acrylonitrile enters the body when breathed in with contaminated air. Permitted levels of acrylonitrile should not cause adverse health and welfare effects. Inhalation of acrylonitrile vapors can cause respiratory irritation, and at higher levels, neurological symptoms including dizziness, weakness, headache, and impaired judgment. Headache, nausea, and dizziness have been reported in humans exposed to high acrylonitrile concentrations for short periods. No signs or symptoms were reported in male volunteer subjects following exposure up to 5 ppm for 8 hours. Similar effects have been observed in chronic inhalation toxicity studies with acrylonitrile. Acrylonitrile is an animal carcinogen at high doses; however, there is a lack of evidence that it is a carcinogen in humans. The overall carcinogenic weight-of-evidence shows that acrylonitrile does not appear to contribute to the development of cancerous tumors in humans.

Is acrylonitrile odorous or harmful to plants?

Acrylonitrile has a sharp garlic-onion odor with an odor detection threshold value of 8.8 ppm. Acrylonitrile has not been shown to have an adverse effect on plants.

Why does the TCEQ set Regulatory Guidelines for acrylonitrile?

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

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TCEQ DSD webpage for more information. The air quality guideline levels for acrylonitrile 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.