

1,1,2-TRICHLOROETHANE (C₂H₃Cl₃)

Chemical Abstracts Service (CAS) Number: 79-00-5

General Information

1,1,2-Trichloroethane is a colorless, sweet-smelling liquid; the odor threshold is not available. No information is available on the acute (short-term) effects of 1,1,2-trichloroethane in humans from inhalation or oral exposures. Studies on dermal exposure to 1,1,2-trichloroethane in humans have reported stinging and burning sensations and transient whitening of the skin. Animal studies have reported effects on the liver, kidney, and CNS from acute inhalation and oral exposure to 1,1,2-trichloroethane. No information is available on the chronic (long-term) effects of 1,1,2-trichloroethane in humans from inhalation or oral exposure. Animal studies have not observed adverse effects from chronic inhalation exposure to 1,1,2-trichloroethane. No studies are available regarding cancer in humans from inhalation or oral exposure to 1,1,2-trichloroethane. U.S. EPA has classified 1,1,2-trichloroethane as a Group C, possible human carcinogen.

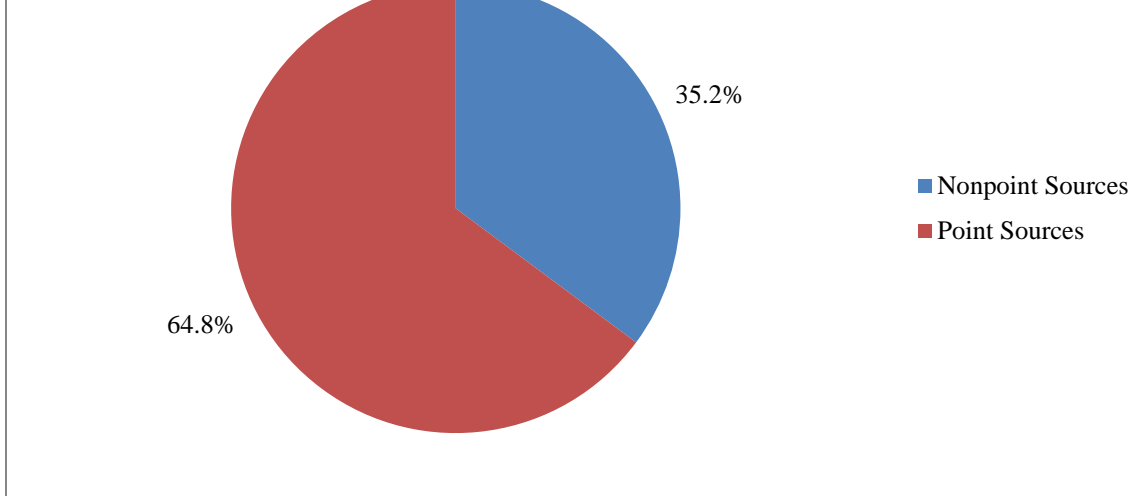
Sources

- 1,1,2-Trichloroethane is primarily used as a chemical intermediate in the production of 1,1-dichloroethene. It is also used as a solvent for chlorinated rubbers, fats, oils, waxes, and resins.
- Very low levels of 1,1,2-trichloroethane have been detected in ambient air.
- 1,1,2-Trichloroethane has not been reported in food or soil, and exposure from contaminated drinking water appears to be rare.
- Exposure to 1,1,2-trichloroethane may occur in the workplace where it is used as a solvent.

Indiana Emissions

IDEM collects HAP emissions information for the categories of point sources (large stationary sources like power plants and factories), nonpoint sources (aka area sources - smaller stationary sources like gas stations and dry cleaners), and mobile sources (vehicles, airplanes, marine vessels, etc.)* Estimated statewide emissions of 1,1,2-trichloroethane totaled 0.13 tons in the 2014 calendar year. Of this total, 64.8% were attributed to point sources, and 35.2% were attributed to nonpoint sources.

2014 Indiana 1,1,2-Trichloroethane Emission Sources



* For additional examples of types of emission sources, please visit IDEM's Hazardous Air Pollutants page at: <http://www.in.gov/idem/toxic/pages/hap/index.html>. For specific details on industrial sources of air toxics, please visit U.S. EPA's Toxics Release Inventory (TRI) page at: <https://www.epa.gov/toxics-release-inventory-tri-program>.

Measured Concentration Trends

Ambient air monitoring data most accurately represents a limited area near the monitor location. All monitors for air toxics sample every sixth day. The monitoring locations by themselves are not sufficient to accurately characterize air toxic concentrations throughout the entire state, however, results from the monitors will provide exposure concentrations with a great deal of confidence at the monitoring locations.

The ambient air monitoring results were analyzed using U.S. EPA recommended statistical methods. IDEM evaluated the data so that a 95% upper confidence limit of the mean (UCL) could be determined. A 95% UCL represents a value which one can be 95% confident that the true mean of the population is below that value.

To learn more about the current monitoring locations, please visit IDEM's Air Toxics Monitor Siting webpage at: <http://www.in.gov/idem/toxic/2337.htm>

Data analysis was performed for each monitor that operated for a significant portion of the analysis period. This analysis determined the detection rate, which is defined as the percentage of valid samples taken statewide that had a quantifiable concentration of the pollutant. The statewide detection rate of 1,1,2-trichloroethane for the monitors analyzed from 2006-2015 was 5.9%. This detection rate is too low for IDEM to draw any conclusions about concentration

trends of 1,1,2-trichloroethane. IDEM does not perform a trend analysis for any pollutant with a detection rate of less than 50%.