HEXACHLOROBUTADIENE (C_4Cl_6)

Chemical Abstracts Service (CAS) Number: 87-68-3

General Information

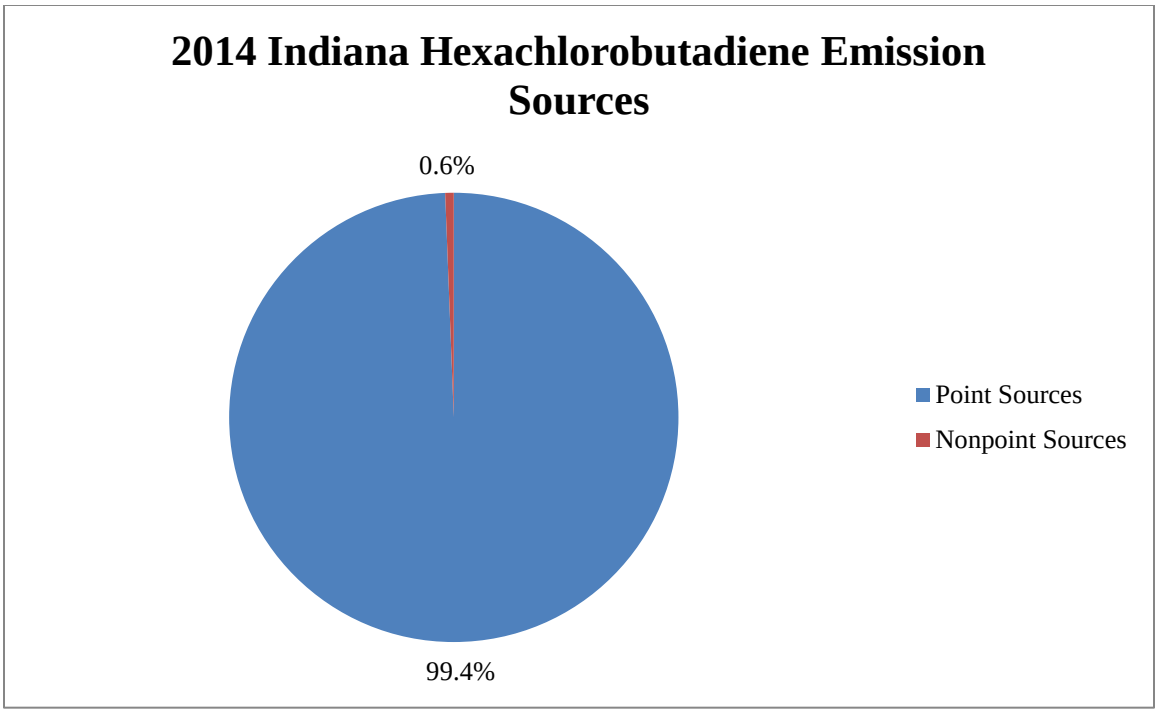
Hexachlorobutadiene is a colorless liquid with a turpentine-like odor. No information is available on the health effects of hexachlorobutadiene in humans. Acute (short-term) inhalation exposure to hexachlorobutadiene caused effects on the kidney and respiratory system in animal studies. Chronic (long-term) oral exposure to hexachlorobutadiene caused effects on the kidney and liver in animal studies. Oral animal studies have reported reduced fertility, reduced body weights, but no birth defects or other developmental effects from hexachlorobutadiene exposure. No information is available regarding the carcinogenic effects of hexachlorobutadiene in humans or animals from inhalation exposure. U.S. EPA has classified hexachlorobutadiene as a Group C, possible human carcinogen.

Sources

- Hexachlorobutadiene is used mainly as an intermediate in the manufacture of rubber compounds. It is also used in the production of lubricants, as a fluid for gyroscopes, as a heat transfer liquid, and in hydraulic fluids.
- Persons working in industries where hexachlorobutadiene is formed or used may be exposed to the chemical. Much higher levels of hexachlorobutadiene in ambient air have been reported near industries where it is formed or used.
- Very small amounts of hexachlorobutadiene may be present in drinking water.

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 hexachlorobutadiene totaled 0.013 tons in the 2014 calendar year. Of this total, 99.4% was attributed to point sources, with the remaining 0.6% attributed to nonpoint 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 hexachlorobutadiene for the monitors analyzed from 2006-2015 was 12.8%. This detection rate is too low for IDEM to draw any conclusions about concentration

trends of hexachlorobutadiene. IDEM did not perform a trend analysis for any pollutant with a detection rate less than 50%.