

## **CHLOROBENZENE (C<sub>6</sub>H<sub>5</sub>Cl)**

Chemical Abstracts Service (CAS) Number: 108-90-7

### **General Information**

Chlorobenzene occurs as a colorless flammable liquid with an aromatic, almond-like odor. Limited information is available on the acute (short-term) effects of human exposure to chlorobenzene. Acute inhalation exposure of animals to chlorobenzene produced narcosis, restlessness, tremors, and muscle spasms. Chronic (long-term) exposure of humans to chlorobenzene affects the central nervous system. Signs of neurotoxicity include numbness, cyanosis, hyperesthesia (increased sensation), and muscle spasms. No information is available on the carcinogenic effects of chlorobenzene in humans. U.S. EPA has classified chlorobenzene as a Group D, not classifiable as to human carcinogenicity.

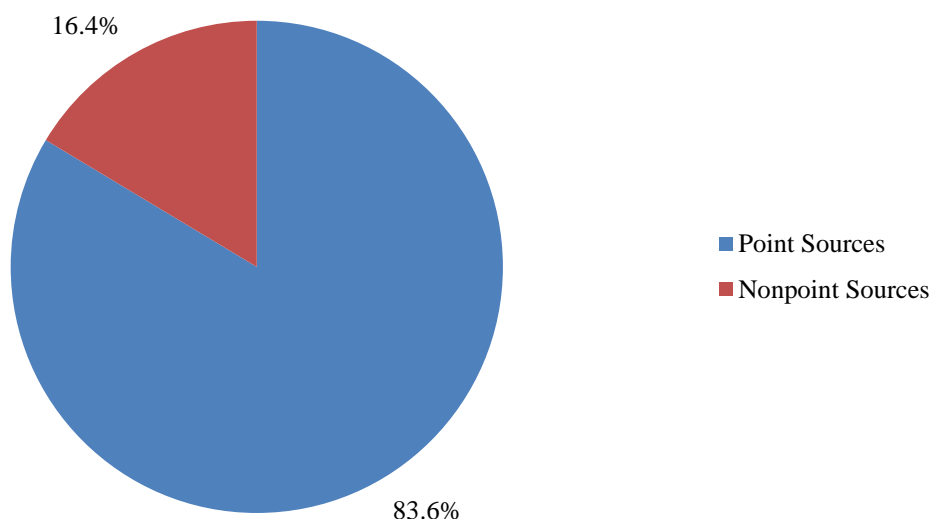
### **Sources**

- The primary uses of chlorobenzene are as a solvent for pesticide formulations, diisocyanate manufacture, and degreasing automobile parts and for the production of nitrochlorobenzene.
- In the past, chlorobenzene was used as an intermediate in phenol and DDT production.
- Human exposure to chlorobenzene appears to be primarily occupational.
- In urban areas, chlorobenzene may be released to the ambient air during its manufacture and use.

### **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 chlorobenzene totaled 1.0 tons in the 2014 calendar year. Of this total, 83.6% was attributed to point sources with the remaining 16.4% attributed to nonpoint sources.

## 2014 Indiana Chlorobenzene 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 chlorobenzene for the monitors analyzed from 2006-2015 was 5.4%. This detection rate is too low for IDEM to draw any conclusions about concentration trends of

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