



Summary of Health Effects

Ethylbenzene may cause cancer in humans. It causes tumors in the kidneys, lungs and liver of animals as well as severe inner ear damage.

How is ethylbenzene used?

Ethylbenzene is mainly used in the production of styrene (see [Styrene fact sheet](#)).¹

Toxicity: What are its health effects?

A two-year inhalation study by the National Toxicology Program found clear evidence of carcinogenic activity in male rats, based on increased renal tubule neoplasms (tumors) and some evidence of carcinogenic activity in female rats, based on renal tubule adenomas (benign tumors).²

The International Agency for Research on Cancer classified ethylbenzene as a possible human carcinogen.³

When rats were fed high doses of ethylbenzene over long periods of time, they experienced severe damage to the inner ear.³

Rats developed kidney tumors and mice developed lung and liver tumors in a two-year study.³

Exposure: How can a person come in contact with it?

A person can come in contact with ethylbenzene from skin contact with consumer products (including gasoline and automotive products, carpet glues, varnishes, paints and tobacco products), by drinking contaminated water, or by breathing in contaminated air.³ In indoor air, the concentration of ethylbenzene is higher than the concentration of outdoor air.³

National Health and Nutrition Examination Survey (NHANES) 2014 data indicate that ethylbenzene is detectable in the blood of the general U.S. population.⁴

References

1. Agency for Toxic Substances and Disease Registry (2010). *ATSDR Toxicological profile for ethylbenzene*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Services. Retrieved from www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=383&tid=66

2. U.S. Department of Health and Human Services, National Toxicology Program (1999). *NTP Technical report on the toxicology and carcinogenesis studies of ethylbenzene in F344/N rats and B6C3F₁ mice (inhalation studies)*. Retrieved from ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr466.pdf
3. World Health Organization, International Agency for Research on Cancer (2000). *IARC Monograph on the evaluation of carcinogenic risks to humans, volume 77: some industrial chemicals*. Retrieved from monographs.iarc.fr/ENG/Monographs/vol77/mono77.pdf
4. Centers for Disease Control and Prevention (2014). *Fourth report on human exposure to environmental chemicals, updated tables, (August, 2014)*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Retrieved from www.cdc.gov/exposurereport/