

**CAS** 100-42-5

**Substance name** Styrene

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### **Toxicity**

Styrene is listed as a carcinogen by IARC based on limited evidence of lymphatic and hematopoietic cancer in occupationally exposed people and limited evidence of cancer in animals.<sup>1</sup> Styrene appears to produce developmental effects in laboratory animals but the effects may be secondary to maternal toxicity.<sup>2</sup> Developmental effects reported include reduced growth and survival and alterations in neurochemicals.<sup>1,2</sup> Central and peripheral nervous system effects have also been reported in exposed workers.<sup>1</sup>

### **Exposure**

Styrene is a high production chemical used to manufacture polystyrene resins. It is also used as a copolymer with acrylonitrile and 1,3-butadiene in ABS plastic and with butadiene in SBR synthetic rubber.<sup>2</sup> Polystyrene resins are readily molded and are used extensively in the fabrication of plastic packaging, disposable beverage tumblers, and toys.<sup>1</sup> In consumer product testing by the Danish EPA, styrene was detected in slimy toys, children's tents, nursing and baby feeding pillows, baby mattress covers, children's bed linens, infant jackets, and infant mittens.<sup>3</sup> Biomonitoring of the general U.S. population detected styrene in less than half of the population.<sup>4</sup>

### **Resources**

1. WHO, International Agency for Research on Cancer (IARC) Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 82, Some Traditional Herbal Medicines, Some Mycotoxins, Naphthalene and Styrene. February 2002. <http://monographs.iarc.fr/ENG/Monographs/vol82/index.php>.
2. U.S. DHHS, National Toxicology Program, Center for the Evaluation of Risks to Human Reproduction. Monograph on the Potential Human Reproductive and Developmental Effects of Styrene. NIH Pub. No. 06-4475, February 2006. <http://cerhr.niehs.nih.gov/evals/styrene/StyreneMono-www-s.pdf>.
3. Danish Ministry of the Environment, Environmental Protection Agency. Surveys on Chemicals in Consumer Products. Reports 46, 67 and 68. [http://www.mst.dk/English/Chemicals/Consumer\\_Products/Surveys-on-chemicals-in-consumer-products.htm](http://www.mst.dk/English/Chemicals/Consumer_Products/Surveys-on-chemicals-in-consumer-products.htm).
4. Centers for Disease Control and Prevention. Fourth National Report on Human Exposure to Environmental Chemicals, 2009. [http://www.cdc.gov/exposurereport/data\\_tables/](http://www.cdc.gov/exposurereport/data_tables/)