

Xylene for industrial use
C₈H₁₀
[CAS No. 1330-20-7]
Reproductive toxicant: Group 2

There are no human studies clearly demonstrating the reproductive toxicity of xylene for industrial use; however, there is some evidence in animal studies indicating its teratogenicity and adverse effects on the next generation. After 4 h/day inhalation exposure to xylene (*ortho*-, *meta*-, or *para*-xylene) at 115 ppm during gestation days 6–15, fetuses with retarded skeletal development and reduced weight gain were observed in mice¹⁾. After 6 h/day inhalation exposure to xylene for industrial use at 500 ppm during gestation days 4–20, fetuses with delayed ossification of the maxillary bones and offspring with impaired motor coordination (Rotarod test) were observed, but there were no signs of maternal toxicity in rats²⁾. In another rat study, 6 h/day inhalation exposure to xylene for industrial use at 500 ppm during gestation days 7–20 induced impaired performance in behavioral tests for neuromotor abilities (Rotarod test) and for learning and memory (Morris water maze) in offspring³⁾. Six

hour/day inhalation exposure to xylene for industrial use at 500 ppm during gestation days 6–20 induced a slight decrease in fetal weight, but there were no signs of maternal toxicity in rats⁴⁾. Besides, xylene for industrial use usually contains approximately 20% ethylbenzene, which is classified as a Group 2 reproductive toxicant. Based on this evidence, xylene for industrial use is classified as a Group 2 reproductive toxicant.

References

- 1) Ungváry G, Tátrai E. On the embryotoxic effects of benzene and its alkyl derivatives in mice, rats and rabbits. *Arch Toxicol Suppl* 1985; 8: 425–30.
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- 3) Hass U, Lund SP, Simonsen L, et al. Effects of prenatal exposure to xylene on postnatal development and behavior in rats. *Neurotoxicol Teratol* 1995; 17: 341–9.
- 4) Saillenfait AM, Gallissot F, Morel G, et al. Developmental toxicities of ethylbenzene, *ortho*-, *meta*-, *para*-xylene and technical xylene in rats following inhalation exposure. *Food Chem Toxicol* 2003; 41: 415–29.