Styrene
$C_6H_5C_2H_3$
[CAS No. 100-42-5]
Reproductive toxicant: Group 2

There are several human studies that have reported adverse effects on reproductive outcomes among female workers exposed to styrene, including higher spontaneous abortion rates and lowered birth weights[1–3]. Effects on the neuroendocrine system as well as on the menstrual cycle have also been reported in female workers[4, 5]. However, this evidence is considered insufficient because the styrene exposure levels were not determined and confounding factors were not adequately controlled. On the other hand, there are many animal studies in which developmental effects after gestational exposure to styrene were demonstrated in rats, mice, and Chinese hamsters[6–15]. These adverse effects included not only malformations in the fetus but also changes in developmental landmarks, neurotransmitters, and behaviour (activity and learning) in the offspring. Two large-scale experiments in rats (a two-generation reproduction study and a developmental neurotoxicity study) failed to detect adverse effects on reproduction and development due to styrene exposure clearly as a whole; however, some of their data indicate adverse effects of styrene (changes in body weight and brain length in F2 rats and in the menstrual cycle in F0 rats)[16, 17]. Based on this evidence, styrene is classified as a Group 2 reproductive toxicant.

References

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