

2-Bromopropane
CH₃CHBrCH₃
[CAS No. 75-26-3]
Reproductive toxicant: Group 1

Several case series studies about azoospermia, oligospermia, menstrual disorder, and ovarian failure¹⁻³⁾ and a cross-sectional study conducted in a factory using 2-bromopropane⁴⁾ have shown clear or supportive evidence indicating that 2-bromopropane has unequivocal testicular and ovarian toxicities. Animal studies using rodents have also shown that 2-bromopropane impairs spermatogonia in the testis, decreases the number of ovarian follicles, and induces embryo toxicity⁵⁻¹⁰⁾. Based on this evidence, 2-bromopropane is classified as a Group 1 reproductive toxicant.

References

- 1) Kim Y, Jung K, Hwang T, et al. Hematopoietic and reproductive hazards of Korean electronic workers exposed to solvents containing 2-bromopropane. *Scand J Work Environ Health*. 1996; 22: 387–91.
- 2) Park J, Kim Y, Park D, et al. An outbreak of hematopoietic and reproductive disorders due to solvents 2-bromopropane in an electronic factory, South Korea: Epidemiological survey. *J Occup Health*. 1997; 39: 138–43.
- 3) Koh JM, Kim CH, Hong SK, et al. Primary ovarian failure caused by a solvent containing 2-bromopropane. *Eur J Endocrinol* 1998; 138: 554–6.
- 4) Ichihara G, Ding X, Yu X, et al. Occupational health survey on workers exposed to 2-bromopropane at low concentrations. *Am J Ind Med*. 1999; 35: 523–31.
- 5) Ichihara G, Asaeda N, Kumazawa T, et al. Testicular and hematopoietic toxicity of 2-bromopropane, a substitute for ozone-depleting chlorofluorocarbons. *J Occup Health* 1997; 39: 57–63.
- 6) Omura M, Romero Y, Zao M, Inoue N. Histopathological evidence that spermatogonia are the target cells of 2-bromopropane. *Toxicol Lett*. 1999; 104: 19–26.
- 7) Kamijima M, Ichihara G, Kitoh J, et al. Ovarian toxicity of 2-bromopropane in the non-pregnant female rat. *J Occup Health* 1997; 39: 144–9.
- 8) Yu X, Kamijima M, Ichihara G, et al. 2-Bromopropane causes ovarian dysfunction by damaging primordial follicles and their oocytes in female rats. *Toxicol Appl Pharmacol* 1999; 159: 185–93.
- 9) Ishikawa H, Tian Y, Yamauchi T. Induction of micronuclei formation in preimplantation mouse embryos after maternal treatment with 2-bromopropane. *Reprod Toxicol* 2001; 15: 81–5.
- 10) Kim JC, Kim SH, Shin DH, et al. Effects of prenatal exposure to the environmental pollutant 2-bromopropane on embryo-fetal development in rats. *Toxicology*. 2004; 196: 77–86.