

Phenol
C₆H₅OH
[CAS No. 108-95-02]
Reproductive toxicant: Group 3

There are no human studies clearly demonstrating the reproductive toxicity of phenol; however, there is some evidence in animal studies indicating its teratogenicity and adverse effects on the next generation. After a single oral administration of phenol at gestation day 11 (667 or 1,000 mg/kg), offspring with hindlimb paralysis and/or short or kinky tails were observed along with a significant reduction in dam weight gain¹. Significant reductions in live births were also reported after oral exposure to phenol (40 or 53.3 mg/kg/day) on gestational days 6 through 19 in rats². A two-generation reproduction and developmental study reported that, although weight, weight gain, and food and water consumption were reduced

in rats exposed to 200, 1,000, or 5,000 ppm phenol in drinking water, there were no effects on mating performance and fertility in the F0 and F1 generations³. Based on these reports, it is concluded that there is some evidence for the developmental and reproductive toxicity of phenol, and thus phenol is classified as a Group 3 reproductive toxicant.

References

- 1) Kavlock RJ. Structure-activity relationships in the developmental toxicity of substituted phenols: in vivo effects. *Teratology* 1990; 41: 43–59.
- 2) Narotsky MG, Kavlock RJ. A multidisciplinary approach to toxicological screening: II, Developmental toxicity. *J Toxicol Environ Health* 1995; 45: 145–71.
- 3) Ryan BM, Selby R, Gingell R, et al. Two-generation reproduction study and immunotoxicity in rats dosed with phenol via drinking water. *Int J Toxicol* 2001; 20: 121–42.