

CAS 78-93-3

**Substance name** Methyl ethyl ketone (also called MEK or 2-butanone)

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### Toxicity

MEK is listed in Reprotext as a class A- for its potential to be a human reproductive hazard.<sup>1</sup> Evidence is principally based on animal evidence of developmental effects at high doses.<sup>2-5</sup> Some of the animal evidence for MEK comes from studies of 2-butanol which is rapidly converted to MEK in mammals. EPA's oral reference dose for MEK is based on developmental effects seen in a reproductive and developmental toxicity study of 2-butanol in rats.<sup>6</sup> Human evidence of reproductive and developmental effects is limited and is not specific to MEK as workers were also exposed to other solvents.<sup>1,6</sup>

### Exposure

MEK is a solvent used in various coatings, adhesives, and inks. It is a solvent for nitrocellulose, lacquers, rubber cement, printing inks, paint removers, vinyl films, resins, rosins, polystyrene, chlorinated rubber, polyurethane, acrylic coatings, and cleaning solutions.<sup>7</sup> MEK was detected in a children's slimy toy and in 3 out of 6 tents in testing by the Danish EPA.<sup>8</sup> MEK is listed as an ingredient in over 30 arts and crafts products.<sup>9</sup>

### References

1. "Methyl Ethyl Ketone" in REPROTEXT Database Version 5.1 Greenwood Village, CO: Thomson Reuters (Healthcare) Inc. (accessed 2009).
2. Schwetz, BA; Leong, BKJ; Gehring, PJ. (1974) Embryo- and fetotoxicity of inhaled carbon tetrachloride, 1,1-dichloroethane and methyl ethyl ketone in rats. *Toxicol Appl Pharmacol* 28: 452-64.
3. Deacon, MM; Pilny, MD; John, JA; et al. (1981) Embryo- and fetotoxicity of inhaled methyl ethyl ketone in rats. *Toxicol Appl Pharmacol* 59: 620-2.
4. Schwetz, BA; Mast, TJ; Weigel, RJ; et al. (1991) Developmental toxicity of inhaled methyl ethyl ketone in mice. *Fundam Appl Toxicol* 16: 742-8.
5. Saillenfait AM, Gallissot F, Sabate JP, et al. (2006) Developmental toxicity of combined ethylbenzene and methylethylketone administered by inhalation to rats. *Food Chem Toxicol* 44(8):1287-1298.
6. U.S Environmental Protection Agency, Toxicological Review of Methyl Ethyl Ketone in support of summary information on the Integrated Risk Information System (IRIS). September 2003. <http://www.epa.gov/ncea/iris/toxreviews/0071tr.pdf>.
7. US Department of Health and Human Services, Agency for Toxic Substances & Disease Registry. Toxicological Profile for 2-Butanone, July 1992, and Addendum to the Profile, December 2010. <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=60>.
8. Danish Ministry of the Environment, Environmental Protection Agency. Survey of Chemical Substances in Consumer Products, Report 67, 2005 and Report 46, 2004. [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).
9. National Institutes of Health, National Library of Medicine, Household Products Database. <http://householdproducts.nlm.nih.gov/> Accessed May 2010.