

## Ethylene glycol monomethyl ether acetate



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### Reproductive toxicant: Group 1

Several epidemiology studies have shown a positive correlation between occupational exposure to ethylene glycol monomethyl ether acetate (EGMEA) and adverse effects on pregnancy. Significantly increased spontaneous abortion and subfertility rates were reported among female workers<sup>1)</sup>. The odds ratios of the neural tube defect, cleft lip, and double congenital anomalies associated with exposure to glycol ethers significantly rose in a case-control study of congenital anomalies<sup>2)</sup>. In a case report, congenital anomalies of the urogenital apparatus were observed in two young boys; they were brothers and born to a mother occupationally exposed to EGMEA during pregnancy<sup>3)</sup>. Animal studies have shown testicular toxicity<sup>4)</sup> and embryotoxicity<sup>5)</sup>. Since absorbed EGMEA is rapidly hydrolyzed to ethylene glycol monomethyl ether (EGME) and acetic acid in the human body, the

effects of EGMEA exposure are considered similar to those of EGME. Based on this evidence, EGMEA is classified as a Group 1 reproductive toxicant.

### References

- 1) Correa A, Gray RH, Cohen R, et al. Ethylene glycol ethers and risks of spontaneous abortion and subfertility. *Am J Epidemiol* 1996; 143: 707–17.
- 2) Cordier S, Bergeret A, Goujard J, et al. Congenital malformation and maternal occupational exposure to glycol ethers. *Epidemiology* 1997; 8: 355–63.
- 3) Bolt HM, Golka K. Maternal exposure to ethylene glycol monomethyl ether acetate and hypospadias in offspring: a case report. *Br J Ind Med* 1990; 47: 352–3.
- 4) Nagano K, Nakayama E, Koyano M, Oobayashi H, Adachi H, Yamada T. Testicular atrophy mice induced by ethylene glycol mono alkyl ethers. *Sangyo Igaku* 1979; 21: 29–35.
- 5) Hardin BD, Schuler RL, Burg JR, et al. Evaluation of 60 chemicals in a preliminary developmental toxicity test. *Teratog Carcinog Mutagen* 1987; 7: 29–48.