Pentane (all isomers)

[109-66-0; 78-78-4; 463-82-1]	
Supplement 2007 (Embryotoxicity)	
MAK value (1958)	**1000 ml/m³ (ppm) ≙ 3000 mg/m³**
Peak limitation (2002)	**Category II, excursion factor 2**
Absorption through the skin	**–**
Sensitization	**–**
Carcinogenicity	**–**
Prenatal toxicity (2006)	**Pregnancy Risk Group C**
Germ cell mutagenicity	**–**
BAT value	**–**

Developmental Toxicity

Two prenatal studies of developmental toxicity are described in the documentation "Pentane" 2004, publication in progress.

In one study, groups of 25 Sprague Dawley rats were given oral doses of *n*-pentane of 0, 100, 500 or 1000 mg/kg body weight and day from days 6 to 15 of gestation. No maternal or developmental toxicity were found (McKee et al. 1998). The NOAEL (no observed adverse effect level) for both maternal toxicity and developmental toxicity in this study was accordingly 1000 mg/kg body weight and day. In the other study, groups of 8 Crl:CD®BR rats were exposed in whole animal chambers to *n*-pentane concentrations of 0, 1000, 3000 or 10 000 ml/m³ from days 6 to 15 of gestation. In the two high exposure groups, slight but not concentration-dependent changes were observed, which were regarded by the authors not to be adverse (Hurtt and Kennedy 1999). The NOAEC (no observed adverse effect concentration) obtained from this study is 10 000ml/m³ for both maternal and developmental toxicity.

The MAK-Collection Part I, MAK Value Documentations 2015
DFG, Deutsche Forschungsgemeinschaft

Manifesto (MAK value, classification)

In developmental toxicity studies in rats, no substance-related developmental or maternal toxicity was observed after either inhalation of the highest tested concentration of 10 000 ml/m^3 or oral administration of the highest tested dose of 1000 mg/kg body weight. If the MAK value of 1000 ml/m^3 is observed, no developmental toxicity is therefore to be expected. This re-evaluation of the data allows the classification of the substance in Pregnancy Risk Group C.

References

Hurtt ME, Kennedy Jr GL (1999) A limited developmental toxicity study of pentane by inhalation in the rat. *Food Chem Toxicol* 37: 565–567

McKee R, Frank E, Heath J, Owen D, Przygoda R, Trimmer G, Whitman F (1998) Toxicology of *n*-pentane (CAS no. 109-66-0). *J Appl Toxicol* 18: 431–442

completed 02.12.2005