

1,6-Hexamethylene diisocyanate [822-06-0]

Results of Testing

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
1,6-Hexamethylene diisocyanate	822-06-0	HEGTOXMUT Gene Mutations in Somatic Cells	40 CFR 798.5300	Chinese hamster ovary (CHO), with and without S-9 activation	in vitro		not specified	Testing was conducted in open plates in a desiccator, a procedure used for testing volatile/gaseous compounds. HDI did not induce significant increases in gene mutation frequency in Chinese hamster ovary (CHO) cells under any treatment condition either without and with metabolic activation.	64 FR12807; 3/15/99 Docket OPPTS-44651
1,6-Hexamethylene diisocyanate	822-06-0	HEGTOXCHR In Vivo Mammalian BM Chromosomal A	40 CFR 798.5385	mouse micronucleus assay	inhalation single 6 hours	0.15 ppm, 0.75 ppm, 1.5 ppm	3/male and female	Signs of animal toxicity included increased activity, slow respiration, abnormal vocalization and labored breathing. HDI did not induce statistically- or biologically-significant increases in mPCE frequency under any treatment condition when mice were exposed by inhalation.	64 FR12807; 3/15/99 Docket OPPTS-44651
1,6-Hexamethylene diisocyanate	822-06-0	HEGTOXMUT Salmonella typhimurium RMA (Ames Test)	40 CFR 798.5265	Salmonella typhimurium strains, with and without S-9 activation	in vitro	six dose levels from 6 to 150 µl per desiccator	not specified	HDI did not induce significant increases in reverse mutation frequencies in any Salmonella strain either without and with metabolic activation.	64 FR12807; 3/15/99 Docket OPPTS-44651

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Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
1,6-Hexamethylene diisocyanate	822-06-0	HERTOXTERA Combined Develop/ Repro; OECD 422, repeat dose	40 CFR 798.4355	rats	inhalation		male and female	Evidence of toxicity was demonstrated in the 0.3 ppm and to a lesser extent in the 0.05 ppm exposure group. In the 0.3 ppm group a statistically significant decrease in body weight was observed in the females on day 4 of the study. In both males and females, microscopic alterations in the nasal cavity, primarily epithelial hyperplasia, squamous metaplasia, chronic-active inflammation, and more seriously, degeneration of the olfactory epithelium were observed at 0.05 and 0.3 ppm HDI dose levels. No effects on any reproductive or neurologic parameters and pup growth and development were observed at any dose level. Therefore, the no-observed-effect-level (NOEL) for hermatology, clinical chemistry, reproduction, and neurotoxicity for this study was 0.3 ppm and the overall NOEL was 0.005 ppm HDI.	64 FR 41934, 8/2/99 Docket OPPTS- 44652
1,6-Hexamethylene diisocyanate	822-06-0	HERTOXTERA Developmental Toxicity	40 CFR 798.4900	rats	inhalation		male and female	Test compound-related maternal effects were observed in the 0.3 ppm group and to a lesser extension in the 0.05 ppm exposure group. No maternal effects were observed in the 0.005 ppm dose group. Maternal effects were restricted to lower gestational body weight, inflammation of the nasal turbinates, and more seriously, degeneration of the olfactory epithelium. There were no statistically significant effects of HDL on reproductive parameters, embryonic endpoints, and fetal development. Therefore, the maternal no-observed-effect-level (NOEL) was 0.005 ppm HDI and the developmental NOEL was 0.3 ppm HDI.	64 FR 41934, 8/2/99 Docket OPPTS- 44652