

**G097**  
**4-Vinylcyclohexene [100-40-3]**

**Results of Testing**

Chemical Name	CAS No.	Study Code/Type	Protocol/Guideline	Species	Exposure	Dose/Concentration	No. per Group	Results	Reference
4-Vinylcyclohexene	100-40-3	EFTSPTVOLZ Volatilization	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	Not applicable	ambient temperature, solution stirred at different rates.	25 ppm	Not applicable	The ratio the volatilization rate constant, $k'$ , to the reoxygenation rate constant, $k$ , was determined to be $0.50 \pm 0.10$ . $k/k'$ was found to be constant over a wide range of liquid turbulence ( $k'$ ranging from 3 to 15 h <sup>-1</sup> ).	58 FR 37541; 7/15/92, Docket OPPTS-44590
4-Vinylcyclohexene	100-40-3	HEADME Pharmacokinetics study: <i>in vitro</i> metabolism	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	mice (female)	<i>In-vitro</i>	0.01, 0.06, 0.24 mM	Not applicable	Microsomal preparations from liver, lung, and ovaries were tested for their ability to metabolize 4-VCH and its epoxide metabolites. The reaction of 4-VCH to 4-VCH-1,2-epoxide proceeded at a detectable rate in mouse liver and lung. No reaction product was detected in mouse ovary. The balance of activation versus detoxification reactions in rats and mice indicates that the mouse may be more susceptible to 4-VCH toxicity resulting from epoxide metabolites. In general, the mouse was more efficient at metabolism of 4-VCH to epoxides, than was the rat, and the reaction had a greater $V_{max}/K_m$ ratio for epoxide formation.	58 FR 21302; 4/20/93, 58FR57602 10/26/93, Docket OPPTS-44602
4-Vinylcyclohexene	100-40-3	HEADME Pharmacokinetics study: <i>in vitro</i> metabolism	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	rats (female)	<i>In-vitro</i>	0.01, 0.06, 0.24 mM	Not applicable	Microsomal preparations from liver, lung, and ovaries were tested for their ability to metabolize 4-VCH and its epoxide metabolites. The reaction of 4-VCH to 4-VCH-1,2-epoxide proceeded at a detectable rate in rat liver and lung. No reaction product was detected in rat ovary. The balance of activation versus detoxification reactions in rats and mice indicates that the mouse may be more susceptible to 4-VCH toxicity resulting from epoxide metabolites. In general, the rat may be more efficient at hydrolysis of epoxides than the mouse. Thus, the rat would tend to produce a lower concentration of epoxide metabolites than the mouse, given an equal dose of 4-VCH.	58 FR 21302; 4/20/93, 58FR57602 10/26/93, Docket OPPTS-44602
4-Vinylcyclohexene	100-40-3	HEADME Pharmacokinetics study: partitioning	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	rats (female)	<i>In-vitro</i> , 37 °C for 3 hours	750 to 2000 ppm in a Teflon gas sampling bag.	Not applicable	4-VCH had a blood:air partition coefficient of 16.7 in rats. Other partition coefficients for 4-VCH were 20.0 for rat muscle:air. In general, the test compound was more soluble in fatty tissues than in lean tissues. Partition coefficients for the ovary were relatively high.	58 FR 21302; 4/20/93, Docket OPPTS-44597

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4-Vinylcyclohexene	100-40-3	HEADME Pharmacokinetics study: partitioning	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	mice (female)	<i>In-vitro</i> , 37 °C for 3 hours	750 to 2000 ppm in a Teflon gas sampling bag.	Not applicable	4-VCH had a blood:air partition coefficient of 20.1 in mice. Other partition coefficients for 4-VCH were 898.8 for mouse fat:air. In general, the test compound was more soluble in fatty tissues than in lean tissues. Partition coefficients for the ovary were relatively high.	58 FR 21302; 4/20/93, Docket OPPTS-44597
4-Vinylcyclohexene	100-40-3	HEGTOXCHRM Mammalian bone marrow micronucleus screen	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	mice	inhalation, 6 hr/d, 5 d/wk, 13 weeks	50, 250, 1000 ppm	5/sex	No statistically significant increases in micronucleated polychromatic erythrocytes were observed at any 4-VCH concentration tested. No significant decrease in the ratio of young polychromatic erythrocytes to mature normochromatic erythrocytes was observed.	58 FR 57602 10/26/93, Docket OPPTS-44602
4-Vinylcyclohexene	100-40-3	HEGTOXCHRM Mammalian bone marrow micronucleus screen	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	rats	inhalation, 6 hr/d, 5 d/wk, 13 weeks	250, 1000, 1500 ppm	5/sex	No statistically significant increases in micronucleated polychromatic erythrocytes were observed at any 4-VCH concentration tested. No significant decrease in the ratio of young polychromatic erythrocytes to mature normochromatic erythrocytes was observed.	58 FR 57602 10/26/93, Docket OPPTS-44602
4-Vinylcyclohexene	100-40-3	HESTOX Subchronic inhalation toxicity	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	rats	inhalation, 6 hr/d, 5 d/wk, 2 weeks	0, 250, 750, 1500 ppm (nominal)	5/sex/group	One rat in the 750 ppm group died during the study. Significant body weight decreases in males exposed to 1500 ppm were evident. The no-observable-effect-level (NOEL) was 1500 ppm for both sexes.	59 FR 17101; 4/11/94, OTS0556756
4-Vinylcyclohexene	100-40-3	HESTOX Subchronic inhalation toxicity	Non-TSCA Protocol/Guideline (docket OPPTS-42116)	mice	inhalation, 6 hr/d, 5 d/wk, 2 weeks	0, 250, 750, 1500 ppm (nominal)	5/sex/group	In the 1500 ppm group, 9/10 mice died during the study. There were 5/5 males and 4/5 females dead prior to exposure on test day 4. The 5th female was moribund and sacrificed. Clinical signs in both sexes following exposure on test day 3 included tremors, rapid breathing, lethargy, hunched-over posture, and closed eyes. Body weights were decreased in both sexes prior to death. The no-observable-effect-level (NOEL) was 750 ppm for both sexes.	59 FR 17101; 4/11/94, OTS0556756