

CODING FORMS FOR SRC INDEXING

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		TSCA Section	8E
Submitting Organization	UNION CARBIDE CORP		
Contractor			
Document Title	INITIAL SUBMISSION: LTR FR UNION CARBIDE CORP TO USEPA RE STUDY, VINYL CYCLOHEXENE MONOXIDE-13 WEEK INHALATION TOXICITY STUDY IN MICE & RATS VIA WHOLE-BODY EXPOSURES, DATED 8/31/98		
Chemical Category	7-OXABICYCLO[4.1.0] HEPTANE, 3-ETHENYL-		

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UNION CARBIDE CORPORATION
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August 31, 1998



TSCA Document Processing Center (7407)
Office of Pollution Prevention & Toxics
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Contains No Cd

Attention: 8(e) Coordinator

RE: 7-Oxabicyclo [4.1.0] heptane, 3-ethenyl- [VCMX; CASRN 106-86-5]

Dear Sir or Madam:

Union Carbide Corporation ("Union Carbide") herewith submits the following information which the Agency may regard as reportable under provisions of TSCA Section 8(e). However, it is not clear to Union Carbide that this information rises to the level of "substantial risk" under TSCA.

A 90-day study titled "Vinyl cyclohexene monoxide (VCMX): A 13-week inhalation toxicity study in mice and rats via whole-body exposures" was conducted to determine subchronic toxicity. Data from the study are in the process of being evaluated. Preliminary, treatment-related findings including changes to the respiratory epithelium in rats (400 ppm) and mice (200 ppm) and decreased number of ovarian follicles in mice (200 ppm) at the highest exposure concentrations have been reported. The ovarian changes did not completely recover during a 6-week post exposure recovery period.

At this stage of the study, it appears that mice, but not rats, are capable of metabolizing VCMX to the active ovotoxicant but only at the maximum sub-lethal concentration which appears, from the preliminary findings in the nasal epithelium, to be irritant as well.

VCMX is a primary metabolite of 4-vinylcyclohexene (VCH) but also has commercial value as a reactive diluent in UV curable coatings. Studies with VCH and its metabolites have indicated that VCH is an ovarian toxicant in mice but not rats via active metabolite, VCH-diepoxide (VCD). VCMX is metabolized to VCD *in vitro* but competing detoxification pathways also exist (e.g. to VCH-1,2-diol). Based on the production and use pattern of VCMX, and since it was unknown whether it is metabolized *in vivo* to VCD, a series of inhalation studies, including the study referenced above, focusing on ovarian toxicity as a marker of VCD formation and ultimate toxicity, was initiated. In a 9-day inhalation toxicity study with VCMX in CD-1[®] mice and Sprague Dawley rats, no clear adverse effects were observed at sub-lethal doses, including no indication of ovarian toxicity.

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A copy of the final study will be sent to the Agency shortly after we receive it.

Very truly yours,



Imogene E. Treble, Ph.D.
Assistant Director
Chemical Control Compliance