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DOCUMENT DESCRIPTION	DOCUMENT CONTROL NUMBER	DATE RECEIVED
8EHG-10-18078	<b>88100000403</b>	8/23/10

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329456

DuPont Haskell Global Centers  
for Health and Environmental Sciences  
1090 Elkton Road, P.O. Box 50  
Newark, DE 19714-0050

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August 20, 2010

Via Federal Express

8EHQ-0810-18078A

Document Processing Center (Mail Code 7407M)  
Room 6428  
Attention: 8(e) Coordinator  
Office of Pollution Prevention and Toxics  
U.S. Environmental Protection Agency, ICC Building  
1201 Constitution Ave., NW  
Washington, DC 20004



Dear 8(e) Coordinator:

Benzene, 1,4-diisocyanato  
CAS # 104-49-4

This letter is to inform you of the results of an acute toxicity study in fathead minnows with the above referenced test substance.

Fathead minnows, *Pimephales promelas*, were exposed to the test substance dissolved in water for 96 hours under static conditions. Duplicate glass beakers were prepared for 6 nominal concentrations (0.31, 0.63, 1.25, 2.5, 5.0 and 10.0 mg/L) and control. Five fish were placed in each beaker which was maintained at approximately 22°C. Temperature, pH and dissolved oxygen were monitored. Solubility and stability of the test substance in dilution water were not determined. The concentrations of the test substance in dilution water were not measured. Mortality and behavior observations were made every 24 hours. Dead fish were removed from the exposure chambers when observed.

All test solutions were clear and colorless on Day 0. At 24 hours the test concentrations had undissolved test substance on the bottom and at the surface of the test chambers. Over the 96 hour study period oily rings had formed around the test substance at the surface in all test concentrations. Sublethal effects were observed at nominal concentrations of 1.25 and 2.50 mg/L. In 1.25 mg/L two fish exhibited erratic swimming after 96 hours of exposure. In 2.50 mg/L one fish had erratic swimming and was gasping for air at 24 hours exposure. At 48 hours of exposure 3 fish were at the surface, 3 fish were swimming erratically and gasping for air, and 1 fish had died. After 72 hours of exposure in 2.5 mg/L, 2 fish were at the surface with rapid respiration, three fish had rapid respiration and three additional fish were swimming erratically and gasping for air. On final observations in 2.50 mg/L, 1 fish was at the surface and gasping for air, and 6 fish were swimming erratically and gasping for air.

Mortality was observed beginning at 24 hours with 40% dead in both replicates of the 5.0 mg/L test solution. In the 10.0 mg/L, replicate A had 80% and replicate B had 20% mortality. At 48 hours there was 20% mortality in replicate B of the 2.50 mg/L test solution and 100% mortality at 5.0 and 10.0 mg/L. After 72 hours all fish were dead in the 5.0 and 10.0 mg/L test solutions.

The 96-hour LC50, based on nominal concentrations of the test substance was 3.0 mg/L.

DCN:8810000403



This information is submitted in accordance with current guidance issued by EPA indicating EPA's interpretation of Section 8(e) of the Toxic Substances Control Act or, where it is not clear that reporting criteria have been met, it is submitted as a precautionary measure and because it is information in which EPA may have an interest.

Sincerely,

A handwritten signature in black ink that reads "A. Michael Kaplan". The signature is written in a cursive style with a long horizontal stroke at the end.

A. Michael Kaplan, Ph.D.  
Director - Regulatory Affairs

AMK/BPS: clp  
(302) 366-5260

100

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