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E. I. du Pont de Nemours and Company  
Haskell Laboratory for Toxicology and Industrial Medicine  
Elkton Road, Newark, Delaware 19711

HASKELL LABORATORY REPORT NO. 369-81

MR NO. [REDACTED]

Material Tested

Haskell No.  
14,008

Other Codes

Study Initiated/Completed  
6/1/81 - 6/5/81

Material Submitted by

[REDACTED]  
Polymer Products Department  
Experimental Station

96-HOUR LC50\*\* TO FATHEAD MINNOWS

Procedure: The test material, after being pulverized with mortar and pestle, was introduced into all-glass exposure vessels and diluted with laboratory supply water to yield the desired test concentrations in 15 liter final volumes. All concentrations were aerated for mixing purposes only prior to adding test animals. An identical vessel, containing only laboratory supply water, was designated as the control. Ten fathead minnows (Pimephales promelas) with a 2.7 cm mean standard length and 0.27 g mean wet weight were randomly assigned to each test vessel. Fish were not fed for 48 hours prior to nor during the exposure. The test solutions were not aerated during the exposure period and temperature was maintained at 22°C. Photoperiod was maintained at 16 hours light:8 hours dark. Mortality counts and observations were made every 24 hours during the 96-hour exposure period. Dead fish were removed as they were discovered. pH was measured at the beginning and termination of the study, dissolved oxygen was measured at the beginning, 48 and 96 hours in the control, low, medium and high test concentrations. Total alkalinity, hardness (EDTA) and conductivity were measured at the beginning of the test in the control vessel.

Results: Percent mortalities for fathead minnows exposed to H-14,008 are presented in Table I. The chemical and physical parameters measured during the test are reported in Table II.

Summary: [REDACTED] exhibited low acute toxicity to fathead minnows under static, unaerated test conditions during a 96-hour exposure. The 96-hour LC50 is estimated to be greater than 3,200 ppm but less than 4,200 ppm of the test material in laboratory supply water.

\* Purity: [REDACTED]

Contaminants: [REDACTED]

Other names: [REDACTED]

\*\* LC50 - The concentration which is lethal to 50% of a test population during the specified time period.

Report by:

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TABLE I

RESULTS OF A 96-HOUR ACUTE TOXICITY TEST  
WITH FATHEAD MINNOWS EXPOSED TO H-14,008 [REDACTED]

| Nominal Test<br>Concentrations<br>ppm (w/v) | Observed Mortality (%) |        |        |        |
|---------------------------------------------|------------------------|--------|--------|--------|
|                                             | 24 Hr.                 | 48 Hr. | 72 Hr. | 96 Hr. |
| 7,500                                       | 100                    | 100    | 100    | 100    |
| 5,600                                       | 100                    | 100    | 100    | 100    |
| 4,200                                       | 100                    | 100    | 100    | 100    |
| 3,200                                       | 0                      | 10     | 30     | 40     |
| 2,400                                       | 0                      | 0      | 0      | 0      |
| 1,800                                       | 0                      | 0      | 0      | 0      |
| 1,350                                       | 0                      | 0      | 0      | 0      |
| 1,000                                       | 0                      | 0      | 0      | 0      |
| Control                                     | 0                      | 0      | 0      | 0      |

TABLE II

RESULTS OF PHYSICAL AND CHEMICAL PARAMETERS  
MEASURED DURING A 96-HOUR ACUTE TOXICITY TEST  
WITH FATHEAD MINNOWS EXPOSED TO H-14,008 [REDACTED]

| Nominal Test Concentrations                        | 7,500 ppm (High) | 3,200 ppm (Medium) | 1,000 ppm (Low) | Control |
|----------------------------------------------------|------------------|--------------------|-----------------|---------|
| <u>Dissolved Oxygen (ppm)</u>                      |                  |                    |                 |         |
| 0 Hr.                                              | 8.0              | 8.0                | 8.0             | 8.4     |
| 24 Hr.                                             | 8.0*             | -                  | -               | -       |
| 48 Hr.                                             | -                | 6.4                | 6.4             | 6.6     |
| 96 Hr.                                             | -                | 6.2                | 4.7             | 5.7     |
| <u>pH</u>                                          |                  |                    |                 |         |
| 0 Hr.                                              | 7.5              | 7.7                | 7.6             | 7.3     |
| 24 Hr.                                             | 7.5*             | -                  | -               | -       |
| 96 Hr.                                             | -                | 7.5                | 7.3             | 7.1     |
| <u>Total Alkalinity (mg/L as CaCO<sub>3</sub>)</u> |                  |                    |                 |         |
| 0 Hr.                                              | -                | -                  | -               | 101     |
| <u>EDTA Hardness (mg/L as CaCO<sub>3</sub>)</u>    |                  |                    |                 |         |
| 0 Hr.                                              | -                | -                  | -               | 85      |
| <u>Conductivity (umhos)</u>                        |                  |                    |                 |         |
| 0 Hr.                                              | -                | -                  | -               | 190     |

\* Final values obtained at 24 hours because complete mortality had occurred during the first 24 hours of exposure.