

ORIGINAL

TSCA NON-CONFIDENTIAL BUSINESS INFORMATION

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8EHQ-11-18419	88110000303	8/16/11

COMMENTS:

DOES NOT CONTAIN CBI

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DuPont Haskell Global Centers
for Health and Environmental Sciences
1090 Elkton Road, P.O. Box 50
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August 12, 2011

Via Federal Express

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Room 6428
Attention: 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
1201 Constitution Ave., NW
Washington, DC 20004



Dear 8(e) Coordinator:

Sodium cyanide
CAS# 143-33-9

DuPont received information from a third party on the above-referenced substance. DuPont has reviewed the information for reportability under TSCA 8(e) and provides below a summary of the information that has been determined to meet EPA's TSCA 8(e) criteria for reporting. It is unknown whether the information reported below has been previously reported to EPA by any third party or is otherwise considered known to the Administrator under TSCA 8(e) guidance.

STUDY 1

The influence of Sodium Cyanide on immobilisation of first instar larvae of the freshwater dipteran insect, *Chironomus riparius*, was investigated over an exposure period of 48 h. A GLP compliant study was conducted following OECD TG 202 "Daphnia sp., Acute Immobilization Test", adopted April 13, 2004 and the OECD Draft Test Guideline for an Acute Chironomid Test (version of 11.03.2011, ENV/JM/TG (2011)16). The larvae were placed in water containing concentrations of 5.31, 13.3, 33.2, 82.8 and 208 µg CN-/L (nominal). The test was conducted under semi-static conditions. After 24 and 48 hours of exposure, immobilization was observed.

The concentrations of free cyanide in the acute chironomid test were analysed photometrically (Merck Spectroquant® 14800) at start and end of each exposure period (LOQ = 7.4 µg CN-/L). The measured concentrations of free cyanide in freshly prepared solutions were 65 % - 113 % of nominal concentrations. The measured concentrations in aged solutions were below LOQ. Due to a decreasing concentrations of the test item in the course of the study and concentrations outside a range of 80 - 120 % of nominal, the calculations for the determination of NOEC and ECx- values were related to Time Weighted Average (TWA) measured concentrations.

No significantly increased immobility (NOEC) up to and including a concentration of 6.9 µg free CN-/L (TWA) was detected after 48 hours of exposure when compared to the control specimens. The 24h-EC50 for the tested species was estimated at 32.5 µg (95% CL = 21.4 - 75.6) free CN-/L (TWA). The 48h-EC50 for the tested species was estimated at 12.4 µg (95% CL = 6.4 - 23.0) free CN-/L (TWA).

STUDY 2

A study was performed to determine the toxicity of sodium cyanide on the growth of the aquatic plant *Lemna gibba* under semi-static conditions (daily media renewal) over a test period of 7 days according to the OECD guideline 221. For the determination of the growth of *Lemna*, three replicates for each concentration and six replicates for the



CONTAINS NO CBI

control (test medium only) were exposed to nominal concentrations in terms of cyanide of 5.01, 15.9, 50.1, 158, 500 $\mu\text{g CN/L}$.

The concentrations of free cyanide in the *Lemna* test were analysed photometrically (Merck Spectroquant® 14800) at start and end of each renewal period (LOQ = 7.4 $\mu\text{g CN/L}$). For each exposure interval the mean measured concentration was calculated. The arithmetic means of the individual exposure concentrations were used for the evaluation of the test (3.70, 7.40, 14.0, 39.7, 93.6 $\mu\text{g CN/L}$).

The E_rC_{50} for growth rate as frond number was calculated to be 40.4 $\mu\text{g CN/L}$, for frond area 31.7 $\mu\text{g CN/L}$ and for dry weight 63.3 $\mu\text{g CN/L}$. The NOEC values for both frond number and area were 3.70 $\mu\text{g CN/L}$ and for dry weight 7.40 $\mu\text{g CN/L}$. The E_yC_{50} value for frond number was 14.8 $\mu\text{g CN/L}$, for frond area 11.6 $\mu\text{g CN/L}$ and for dry weight 13.1 $\mu\text{g CN/L}$. The NOEC values for the three parameters, frond number, frond area and dry weight, were 3.70 $\mu\text{g CN/L}$.

Sincerely,

Dawn S. Clark

Dawn S. Clark, Ph.D. on behalf of
S. Satheesh Anand, Ph.D., DABT
Senior Research Toxicologist

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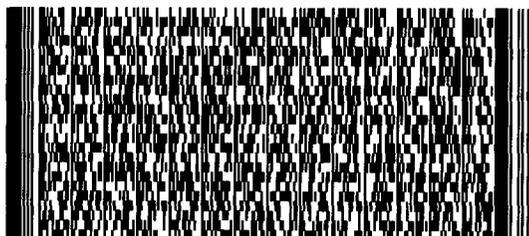


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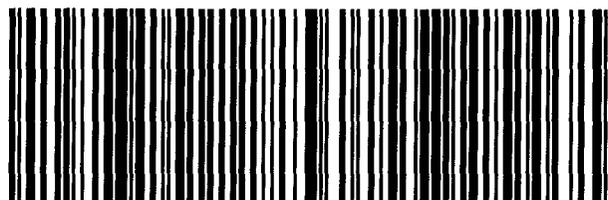
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