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TSCA Confidential Business Information Center (7407M)
EPA East-Room 6428 Attn: Section 8(e)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

8EHQ-0809-17607A



Dear Sir/Madam:

The purpose of this letter is to inform you under Section 8(e) of TSCA of the results obtained from the recent three aquatic toxicity studies on EPOMIN SP-200, the chemical being produced by my client, Nippon Shokubai Co., Ltd. The reports are entitled "Acute Toxicity Test of EPOMIN SP-200 with Medaka (*Oryzias latipes*)", "Acute Immobilisation Test of EPOMIN SP-200 with *Daphnia magna*", and "Growth Inhibition Test of EPOMIN SP-200 with *Pseudokirchneriella subcapitata*". EPOMIN SP-200, a commercial chemical product has been manufactured in Japan by Nippon Shokubai Co., Ltd., and imported to the US by my client, NA Industries Inc., P.O. Box 5407 Chattanooga, TN 37406. EPOMIN SP-200's CAS name and number are Aziridine homopolymer and 9002-98-6, respectively.

Enclosed please find the copy of the reports and its TSCA Health & Safety Study Cover Sheet.

If you have any questions or comments on this submission, please feel free to call me at (703)920-5440 or email me at hiyama@ix.netcom.com.

Sincerely yours,

Hiroshi Uyama



DCN:(88090000331)

Contains No CBI

CONTAINS NO CBI

TSCA HEALTH & SAFETY STUDY COVER SHEET - revised 6/25/96

TSCA CBI STATUS:

OMB Control # 2070-0156

CHECK IF THIS PAGE CONTAINS CONFIDENTIAL BUSINESS INFORMATION (CBI)

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Submit a sanitized cover sheet with CBI deleted. Mark the sanitized copy, "Public Display Copy" in the heading.

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2.1 SUMMARY/ABSTRACT ATTACHED (may be required for 8(e): optional for §4, 8(d) & FYI) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		2.2 SUBMITTER TRACKING NUMBER OR INTERNAL ID	2.3 FOR EPA USE ONLY	2.4 Study ___ of ___
3.0 CHEMICAL/TEST SUBSTANCE IDENTITY <input type="checkbox"/> <i>Contains CBI</i> <p align="center"><i>Reported Chemical Name (specify nomenclature if other than CAS name):</i></p> CAS# <u>9002-98-6</u> Purity _____% <u>Aziridine homopolymer</u> <input checked="" type="checkbox"/> Single Ingredient <input type="checkbox"/> Commercial/Tech Grade <input type="checkbox"/> Mixture Trade Name: <u>EPOMIN SP-200</u> Common Name: <u>Polyethylenimine</u> CAS Number _____ NAME _____ % WEIGHT _____ Other chemical(s) present in tested mixture _____ <input type="checkbox"/> continuation sheet attached				
4.0 REPORT/STUDY TITLE <input type="checkbox"/> <i>Contains CBI</i> <p align="center"><u>Acute Toxicity Test of EPOMIN SP-200 with Medaka</u></p> <input type="checkbox"/> continuation sheet attached				
5.1 STUDY/TSCATS INDEXING TERMS [CHECK ONE] HEALTH EFFECTS (HE): _____ ENVIRONMENTAL EFFECTS (EE): <input checked="" type="checkbox"/> ENVIRONMENTAL FATE (EF): _____				
5.2 STUDY/TSCATS INDEXING TERMS (see instructions for 4 digit codes) STUDY TYPE: <u>ATOX</u> SUBJECT ORGANISM (HE, EE only): <u>FFRE</u> ROUTE OF EXPOSURE (HE only): <u>Ø</u> VEHICLE OF EXPOSURE (HE only): _____ Other: _____ Other: _____ Other: _____ Other: _____				
6.0 REPORT/STUDY INFORMATION <input type="checkbox"/> <i>Contains CBI</i> <input type="checkbox"/> Study is GLP Laboratory: <u>Mitsubishi Chemical Medicine Corporation</u> Report/Study Date: <u>6/30/09</u> Source of Data/Study Sponsor (if different than submitter): _____ Number of pages: <u>6</u> <input type="checkbox"/> continuation sheet attached				
7.0 SUBMITTER INFORMATION <input type="checkbox"/> <i>Contains CBI</i> Submitter: <u>Takashi Tomita</u> Title: <u>Manager</u> Phone: <u>423 624-6496</u> Company Name: <u>NA Industries Inc</u> Company Address: <u>P.O. Box 5407 Chattanooga TN 37406</u> Technical Contact: <u>Hiroshi Dyang, Japan Technical Information Center</u> Submitter Address (if different): _____ Phone: <u>(603) 920-5440</u> <input type="checkbox"/> continuation sheet attached e-mail address _____				
8.0 ADDITIONAL COMMENTS <input type="checkbox"/> <i>Contains CBI</i> _____ _____ <input type="checkbox"/> continuation sheet attached Submitter Signature: <u>[Signature]</u> Date: <u>8/10/09</u>				

EPA Form No. _____ Use of this form is voluntary, but recommended by EPA as a cover sheet for TSCA section 4, 8(d), and 8(e) submissions to expedite and improve the management, processing, quality, review, and public availability of data in TSCATS.

FINAL REPORT

Acute Toxicity Test of EPOMIN SP-200 with Medaka (*Oryzias latipes*)

(Report No. : A090104)

June 30, 2009
Yokohama Research Center
Toxicological Science Division
Medi-chem Business Segment
Mitsubishi Chemical Medience Corporation.
1000 Kamoshida-cho, Aoba-ku, Yokohama,
Kanagawa, Japan

Study Director: Suguru Tone
Suguru TONE, M.Sc.

Sponsor

NIPPON SHOKUBAI CO., LTD.

Purpose

In order to clarify the effects of the test substance, Medaka (*Oryzias latipes*) was exposed to the test solution containing the test substance for 96-hour.

The acute toxicity test was conducted under the two different concentration ranges.

Test Guidelines

OECD Guideline for Testing of Chemicals 203 (1992) "Fish, Acute Toxicity Test"

Testing Date

Exposure: Test 1: May 11, 2009 ~ May 15, 2009

Test 2: June 1, 2009 ~ June 5, 2009

Test Methods

- 1) Test substance: EPOMIN SP-200 (Lot No.: 9C06K1)
- 2) Test fish: Medaka (*Oryzias latipes*)
- 3) Dilution water: dechlorinated tap water
- 4) Duration: 96 hours
- 5) Exposure procedure: semi-static (batchwise renewal of the test solution after 48-hour exposure)
- 6) Test concentrations: Test 1: control, 1.0, 10, 100 mg/L
Test 2: control, 0.010, 0.10 mg/L
- 7) Volume of test solution: 5.0 L/vessel
- 8) Number of vessels: 1 vessel/test group
- 9) Number of fish: 10 fish/test group

- 10) Temperature: $24 \pm 1^{\circ}\text{C}$
- 11) Dissolved oxygen concentration: $\geq 60\%$ of the saturation (aerated)
- 12) pH: not adjusted
- 13) Light: fluorescent light,
16 hours light (1000 lux or less) /8 hours dark
- 14) Feeding: none

Test Procedure

The stock solution of the test substance was diluted with dilution water to prepare the test solution for each concentration. The test solution for control group was only dilution water.

The fish were introduced into each test vessel and the exposure started. Number of dead fish, toxicological symptoms and abnormalities were recorded at 24, 48, 72 and 96 hours after the exposure. Observation of the appearance and measurements of the temperature, dissolved oxygen concentration (D.O.) and pH of the test solution were performed at 0, 48 (before and after renewal) and 96 hours after the exposure.

Results and Discussion

The results of observation of fish are shown in Table 1. The appearances of test solution are shown in Table 2. The qualities of test solution are shown in Table 3.

In the control and the concentration of 0.010 mg/L and 0.10 mg/L, the mortalities after 96-hour exposure were 0% and no toxicological symptom was observed. However, in the concentration of 1.0 mg/L, 10 mg/L and 100 mg/L, all fish were found to be dead, i.e., the mortalities were 100%.

The temperature and D.O. of test solution were within proper range for Medaka, and the values were fulfilled the conditions for validity of the test. The pH values increased concentration-dependently, and ranged from 7.5 to 9.2.

Table 1 Observation of fish

(1) Test 1

Nominal Concentration (mg/L)	24 Hours		48 Hours		72 Hours		96 Hours	
	Death	Symptoms	Death	Symptoms	Death	Symptoms	Death	Symptoms
Control	0	0	0	0	0	0	0	0
1.0	10	--	10	--	10	--	10	--
10	10	--	10	--	10	--	10	--
100	10	--	10	--	10	--	10	--

(2) Test 2

Nominal Concentration (mg/L)	24 Hours		48 Hours		72 Hours		96 Hours	
	Death	Symptoms	Death	Symptoms	Death	Symptoms	Death	Symptoms
Control	0	0	0	0	0	0	0	0
0.010	0	0	0	0	0	0	0	0
0.10	0	0	0	0	0	0	0	0

Death : Cumulative mortality

Symptoms : Toxicological symptoms and number of fish showing corresponding symptoms

--: Not observed because all fish were dead.

Table 2 Appearances of test solution

(1) Test 1

Nominal Concentration (mg/L)	0 Hour	48 Hours		96 Hours
	New	Old	New	Old
Control	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-
1.0	C-,S-,F-,P-	--	--	--
10	C-,S-,F-,P-	--	--	--
100	C-,S-,F-,P-	--	--	--

(2) Test 2

Nominal Concentration (mg/L)	0 Hour	48 Hours		96 Hours
	New	Old	New	Old
Control	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-
0.010	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-
0.10	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-	C-,S-,F-,P-

New: New test solution freshly prepared

Old: Old test solution immediately prior to renewal or at the end of the exposure

Color

C- : Colorless

Suspended solids

S- : Not observed (transparent)

Floating solids

F- : Not observed

Precipitations

P- : Not observed

--: Not observed because all fish were dead.

Table 3 Water qualities of test solution

(1) Test 1

Nominal Concentration (mg/L)		0 Hour	48 Hours		96 Hours
		New	Old	New	Old
Control	Temperature (°C)	24.1	24.0	24.2	23.8
	pH	7.6	7.5	7.6	7.5
	D.O. (mg/L)	8.2	7.3	8.2	7.4
1.0	Temperature (°C)	24.1	--	--	--
	pH	7.7	--	--	--
	D.O. (mg/L)	8.2	--	--	--
10	Temperature (°C)	24.1	--	--	--
	pH	8.3	--	--	--
	D.O. (mg/L)	8.2	--	--	--
100	Temperature (°C)	24.1	--	--	--
	pH	9.2	--	--	--
	D.O. (mg/L)	8.1	--	--	--

New: New test solution freshly prepared

Old: Old test solution immediately prior to renewal or at the end of the exposure

--: Not measured because all fish were dead.

Table 3 Water qualities of test solution (continued)

(2) Test 2

Nominal Concentration (mg/L)		0 Hour	48 Hours		96 Hours
		New	Old	New	Old
Control	Temperature (°C)	24.0	24.0	24.0	24.0
	pH	7.6	7.5	7.6	7.6
	D.O. (mg/L)	8.3	7.6	8.5	7.5
0.010	Temperature (°C)	24.3	24.0	24.0	24.0
	pH	7.6	7.7	7.6	7.7
	D.O. (mg/L)	8.1	7.6	8.4	7.5
0.10	Temperature (°C)	24.4	24.0	24.1	24.0
	pH	7.6	7.7	7.6	7.7
	D.O. (mg/L)	8.4	7.9	8.0	7.5

New: New test solution freshly prepared

Old: Old test solution immediately prior to renewal or at the end of the exposure