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January 10, 2011

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Via Federal Express



United States Environmental Protection Agency - East
Attn: TSCA Section 8(e)
Room 6428
1201 Constitution Avenue, NW
Washington, DC 20004

8EHQ-0111-18235A
DCN:88110000119s

Subject: Notice in Accordance with Section 8(e): Results of a Growth Inhibition Test on Freshwater Aquatic Plant (*Lemna gibba*) with a Mixture Containing Two Active Ingredients: (1) [REDACTED] and (2) [REDACTED]

Dear Sir/Madam:

[REDACTED] is submitting the following results, conducted by [REDACTED]. The test substance is a formulation.

Material and methods

- Test item: Batch: 400105, active ingredients: (1) (5.66% analysed content) and (2) (72.4% analysed content)
- Test species: Freshwater aquatic plant *Lemna gibba* L. specification CPCC 310, stock G3 from University of Waterloo, Canadian Phycological Culture Centre, Ontario, Canada.
- Test design: Semi-static system (7 days), three replicates per each test concentration and six for control.
- Test concentrations: Control; 0.0008; 0.002; 0.005; 0.013; 0.032; 0.080; 0.20 and 0.50 mg/L of test substance in 20XAAP medium (nominal).
- Test conditions: 20XAAP nutrient solution, pH of control: 7.48 – 9.17, light intensity: 6.65 – 7.35 klx, constant illumination, 150 mL glass vessels with 120 mL test volume; initial frond number 9, i.e. 3 plants per 3 fronds; temperature measured in additional test vessel was in the range of 23.3 – 23.9°C.
- Analytics: The contents of a.i. (1) and a.i. (2) were determined by high performance liquid chromatography with UV-VIS detection.
- Statistics: Probit method calculations and analysis: Shapiro-Wilk's Test on Normal Distribution, Levene's Test on Variance Homogeneity (with Residuals), Welch-t test for Inhomogeneous Variances with Bonferroni-Holm Adjustment, Williams Multiple Sequential t-test Procedure.
- Endpoints: $E_rC_{50}, E_yC_{50}, E_rC_{10}, E_yC_{10}, E_rC_{20}, E_yC_{20}$ based on frond number and dry weight.

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Table 1. Toxicity of Test Substance for *Lemna gibba* after 7 days

	Nominal test item concentrations [mg/L]	Control	0.0008	0.002	0.005	0.013	0.032	0.08	0.20	0.50	
	based on frond number	Inhibition at 7 d (growth rate) [%]	0.0	-0.6	4.3	12.4	63.7	87.9	92.0	91.1	91.1
Inhibition at 7 d (yield) [%]		0.0	-2.1	13.8	34.6	90.6	98.0	98.8	98.6	98.6	
Endpoints [µg/L] (nominal concentrations of the test item)											
E _r C ₅₀ (7 d)		10.8 (7.9 – 14.4)									
E _r C ₁₀ (7 d)		3.9 (1.5 – 5.9)									
E _y C ₅₀ (7 d)		6.0 (5.1 – 7.2)									
E _y C ₁₀ (7 d)		2.5 (1.5 – 3.2)									
LOEC (growth rate)		2.0									
NOEC (growth rate)		0.8									
based on dry weight		Inhibition at 7 d (growth rate) [%]	0.0	0.0	0.7	10.2	28.7	43.6	44.6	49.3	52.2
	Inhibition at 7 d (yield) [%]	0.0	0.0	3.8	32.3	67.6	82.4	83.1	86.2	87.9	
	Endpoints [µg/L] (nominal concentrations of the test item)										
	E _r C ₅₀ (7 d)	187.5									
	E _r C ₁₀ (7 d)	1.9									
	E _y C ₅₀ (7 d)	9.5 (5.2 – 17.1)									
	E _y C ₁₀ (7 d)	1.7 (0.2 – 3.6)									
	LOEC (growth rate)	5.0									
NOEC (growth rate)	2.0										

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Conclusion

In a semi-static *Lemna gibba* growth inhibition test, the EC50 values were estimated based on frond number and dry weight. The ErC50 is 10.8 µg/L (i.e. 0.0108 mg/L) and EyC50 is 6.0 µg/L (i.e. 0.006 mg/L)– based on frond number. The ErC50 is 187.5 µg/L (i.e. 0.1875 mg/L) and EyC50 is 9.5 µg/L (i.e. 0.0095 mg/L) – based on dry weight (nominal concentrations of the test item).

[██████████] understands that reporting of results from this study under TSCA 8(e) is in accordance with EPA's policy.

Please note that a confidential version of this letter is enclosed, treating the chemical identity and company identity as Confidential Business Information.

A Confidentiality Substantiation Questionnaire is being submitted for the substance.

Sincerely,

Enclosures