

Microtox data for FM-3820 (28% PFOS)

MICROBICS MICROTOX® TOXICITY TEST

TEST SUBSTANCE

Identity: Perfluorooctanesulfonate; may also be referred to as PFOS or FC-95 or as part of the mixed product FM-3820 (see Remarks).
(1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt, CAS # 2795-39-3)

Remarks: The test sample is FM-3820, a mixture of the test substance in diethylene glycol butyl ether and water (approximately 24-28% test substance in diethylene glycol butyl ether and water). Calculations were made to adjust test values for the upper limit concentration of the test substance (28%) in the test sample and no adjustment was made for the presence of the diethylene glycol butyl ether or water as noted below. Calculations assumed that all toxicity was due to the presence of the Perfluorooctanesulfonate substance.

METHOD

Method: Microbics Microtox® "BASIC" Procedure

Test type: Static acute

GLP: No

Year Completed: 1991

Species: *Photobacterium phosphoreum*

Analytical monitoring: Not available

Statistical methods: Not available

Test organism source: Microbics Microtox® Reagent

Test conditions: Per Microbics method

RESULTS

Nominal concentrations: 125, 250, 500, 1000 mg/L

Test Sample Element values: 30-minute EC₁₀ = 161 mg/L
30-minute EC₅₀ = >1000 mg/L

Perfluorooctanesulfonate concentration adjusted Element value:

30-minute EC₁₀ = 45 mg/L

30-minute EC₅₀ = >280 mg/L

Remarks: Values reported are for the test sample and then adjusted assuming all toxicity is due to the perfluorooctanesulfonate component. No calculations were made to adjust for the concentration of the diethylene glycol butyl ether in the test sample.

CONCLUSIONS

The test sample containing 28% Perfluorooctanesulfonate (upper limit) exhibited a 30-minute EC₅₀ for *Photobacterium phosphoreum* of >1000 mg/L. If you assume all toxicity of the mixture is due to the Perfluorooctanesulfonate, the adjusted 30-minute EC₅₀ value is >280 mg/L (1000 mg/L X 0.28).

Submitter: 3M Company, Environmental Laboratory, P.O. Box 33331, St. Paul, Minnesota, 55133

DATA QUALITY

Reliability: Klimisch ranking 4. Values are from a summary only. Original test report and raw data was not found. Additionally, data is for a mixture and toxicity cannot be positively attributed to Perfluorooctanesulfonate as the diethylene glycol butyl ether could also contribute to the toxicity.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, Lab Request number J1608, 7/24/91.

OTHER

Last changed: 5/3/00

08/08/1991

ENVIRONMENTAL LABORATORY FINAL REPORT

1

LAB REQUEST NO. J1608

REQUESTOR NAME: RD HOWELL/SAB
DEPARTMENT: 0535
PROJECT NO: 9970013000
DATE RECEIVED: 04/10/1991
DESC: FC203 AND COMPONENTS

CONTRACT LAB: ESI
CONTRACT LAB COST: \$17,600.00
3M E-L HOURS: 7
EXP COMP DATE: 07/31/1991
DATE COMPLETED: 07/26/1991

See LR H2864 for D. magna test results.

SAMPLE	DATE	CODE	DESCRIPTION	RESULT	MDL OR (C.I.)
1		BUTYL CARB. RM 8887			
		*ALGAE ASSAY - IC50		>1000 MG/L	(C.I. -)
		MICROTOX - EC50		>1000 MG/L	(C.I. -)
2		DUPONOL ME RM 3021			
		*ALGAE ASSAY - IC50		91 MG/L	(95% CI (80-100))
		MICROTOX - EC50		1.1 MG/L	(95% CI (0.8-1.4))
3		TOLYTRIAZOLE RM 27513			
		*ALGAE ASSAY - IC50		87 MG/L	(95% CI (73-99))
		MICROTOX - EC50		6.1 MG/L	(95% CI (5.8-6.4))
4		FOAMER FM-4115			
		*FISH ACUTE TEST - 96 HOUR		77 MG/L	(95% CI (60-100))
		*ALGAE ASSAY - IC50		14 MG/L	(95% CI (13-16))
		MICROTOX - EC50		>1000 MG/L	(C.I. -)
5		FILMER FM 3820			
		*ALGAE ASSAY - IC50		260 MG/L	(95% CI (220-290))
		MICROTOX - EC50		>1000 MG/L	(C.I. -)
6		NA-OCTYLSULF RM 55040			
		*FISH ACUTE TEST - 96 HOUR		480 MG/L	(95% CI (400-600))
		*ALGAE ASSAY - IC50		170 MG/L	(95% CI (150-180))
		MICROTOX - EC50		80 MG/L	(95% CI (68-93))
7		FC-203			
		*ALGAE ASSAY - IC50		350 MG/L	(95% CI (320-390))
8		FC203 W/O TO VW 160390			
		*FISH ACUTE TEST - 96 HOUR		>1000 MG/L	(C.I. -)
* - CONTRACT LAB DATA					

LAB REQUEST NO. J1608

CONTINUED

SAMPLE	DATE	CODE	DESCRIPTION	RESULT	MDL OR (C.I.)
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8			FC203 W/O TO VW 160390		
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			*ALGAE ASSAY - IC50	360 MG/L	(95%CI (310-410))
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			MICROTOX - EC50	320 MG/L	(95%CI (300-350))
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SUBMITTED BY: _____ DATED: _____

Form 10623 - N - PWD

Lab Frequency Mon.

Date Received	
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4/10/91

Page
1 of 1white - Env. Archives**Pink - Contract Lab****Canary - Property Acq.**

Goldend - Requester

Environmental Lab. Data Report Form
Form 10820-13-B-PWD

Parameter Mikrotox

Contract Laboratory
No. Tests <u>7</u>
No. Hours (Est. Lab Only) <u>7</u>
Analyst <u>SAB</u>
QA Check

LR #	Result	Unit	Date	Comments
J1608-1	① >1000 EC50 95% CI (—)	mg/L	7/18/91	30-min Exposure
J1608-2	1.1 EC50 95% CI (0.8-1.4)	"	"	"
J1608-3	6.1 EC50 95% CI 5.8-6.4	"	7/19/91	"
J1608-4	>1000 EC50 (—)	"	7/18/91	"
J1608-5	>1000 EC50 (—)	"	"	"
J1608-6	80 EC50 (68-93)	"	7/19/91	"
J1608-8	320 EC50 (300-350)	"	"	"

ENVIRONMENTAL LABORATORY

J1608
7/24/91

MICROBICS MICROTOX® SYSTEM

TOXICITY TEST RESULTS

PERCENT LIGHT LOSS

TEST CONC. Mg/L	BUTYL CARBITOL RM 8887			DUPONOLME RM 3021			TOLYTRIAZOLE RM 27513			FOMER FM 4115			FILMER FM 3820			7-8-OCTYLSULFATE RM 32057			FC203 w/o TOLYTRIAZOLE		
	5-min	15-min	30-min	5-min	15-min	30-min	5-min	15-min	30-min	5-min	15-min	30-min	5-min	15-min	30-min	5-min	15-min	30-min	5-min	15-min	30-min
1.25				20	41	54															
2.5				39	67	79															
3.125							32	30	32												
5.0				74	89	92															
6.25							51	49	52												
10				87	92	95															
12.5							68	67	70												
25							82	80	82												
31.25																83	15	22			
50																					
62.5																24	36	48			
100																					
125	12	10	14							9.7	17	22	4.4	7.1	5.8	37	55	67	8.8	19	26
250	17	19	19							10	18	20	13	17	23	54	67	78	17	30	42
500	31	29	31							12	18	21	19	24	31				30	49	64
1000	49	48	49							23	27	30	23	30	42				48	64	76
EC50	-1000	-1000	-1000	3.0	1.8	1.1	8.2	6.8	6.1	>1000	>1000	>1000	>1000	>1000	>1000	200	120	80	-1000	550	320
95% C. I.				(2.2-3.8)	(1.2-1.8)	(0.5-1.6)	(6.2-8.8)	(5.2-7.1)	(5.2-6.6)							(100-240)	(100-140)	(50-100)		(200-550)	(200-320)