

MICROBICS MICROTOX® TOXICITY TEST

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate, which may also be referred to as PFOS, FC-95, or as a component of FX-3103. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was not noted. The test sample is FX-3103, 3%. Current information indicates it is a mixture of 0.96%PFOS, 20% diethylene glycol butyl ether, 50.56% water, 15% ethylene glycol, 4.32% sodium octyl sulfate, 6.0% polyoxyethylene monooctylphenyl ether, 2.5% propane sultone foamer, 0.5% sodium nitrate, 0.06% sodium lauryl sulfate, and 0.1% benzotriazole.

The following summary applies to a mixture with incompletely characterized concentrations of impurities. Data may not accurately reflect the toxicity of the fluorochemical component of the test sample.

METHOD:

Method: Microbics Microtox® "BASIC" Procedure

Test type: Static acute

GLP: No

Year Completed: 1985

Species: *Photobacterium phosphoreum*

Analytical monitoring: Not given.

Exposure period: 30-minutes

Statistical methods: EC50 values calculated by statistical linear regression program provided for Microtox®

Test organism source: Microbics' Reagent.

Test conditions:

Diluent: Not given.

Test temperature: Not noted.

Stock and test solution preparation: Not given.

Exposure vessels: 4 mL cuvettes.

Number of replicates: two

Number of concentrations: Four plus a blank control

Element basis: Percent light loss

RESULTS

Nominal concentrations: Blank control, 100, 250, 750, and 1000 mg/L

Element value: 5-minute EC₅₀ = >1000 mg/L
15-minute EC₅₀ = >1000 mg/L

Element values based on nominal concentrations.

Remarks: Testing was conducted on a mixture as described in the Test Substance Remarks field. The values reported apply to that mixture and not the fluorochemical proportion alone.

CONCLUSIONS

The test substance 15-minute EC₅₀ for *Photobacterium phosphoreum* was determined to be >1000 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking 3. Study lacks description and records of the method followed. There is no characterization of the test substance purity, and the study lacks analytical confirmation of the amount of fluorochemical proportion in the solution.

REFERENCES

This study was conducted by the 3M Environmental Laboratory, St. Paul, Minnesota, Lab Request number C1111-1, 1985.

OTHER

Last changed: 6/26/00.

ENVIRONMENTAL LABORATORY

MICROBIAL TOXICITY TEST MICROTOX[®] RAW DATA

LR C1111 - 1
DATE 5 Feb 1985
ANALYST KAM

SAMPLE DESCRIPTION: FX-3103 3% Type Light water

SAMPLE (CUVETTE)	FINAL ASSAY CONCENTRATION	INITIAL READING	FINAL READINGS		
		I(0)	5-MIN I(5)	15-MIN I(15)	30-MIN I(30)
B1	BLANK	90	55	32	20
C1	DUPLICATE	90	54	32	22
B2	100 mg/l	99	65	46	38
C2	duplicate	83	52	37	30
B3	250 mg/l	88	46	30	24
C3	duplicate	81	42	27	21
B4	750 mg/l	96	38	23	18
C4	duplicate	78	30	17	12
B5	1000 mg/l	78	28	16	11
C5	duplicate	84	29	16	11

MICROTOX[®] DATA REDUCTION

LR C1111-1

DATE 5 Feb 85

ANALYST LAL

BLANK RATIOS* = $\frac{\text{Final}}{\text{Initial}}$

BLANK CUVETTE	5-MIN Blank Ratio	Difference	15-MIN Blank Ratio	Difference	30-MIN Blank Ratio	Difference
B1	$\frac{5}{40} = .125$	.011	$\frac{17}{40} = .425$	0	$\frac{27}{40} = .675$	.022
C1	$\frac{54}{40} = .60$		$\frac{32}{40} = .80$		$\frac{22}{40} = .55$	

* THE BLANK RATIOS FOR B1 AND C1 SHOULD AGREE WITHIN 0.02.

MEAN BLANK RATIOS = $\frac{B1 \text{ Bk Ratio} + C1 \text{ Bk Ratio}}{2}$

5-MIN	15-MIN	30-MIN
.600	.356	.233

NORMALIZED LIGHT LOSS (N EFFECT) = $\frac{\text{Mean Blank Ratio} \times \text{Initial Sample Reading}}{\text{Final Sample Reading}}$

SAMPLE CUVETTE	5-MIN Γ	15-MIN Γ	30-MIN Γ
B2 100	-.077	-.234	-.393
C2	-.033	-.201	-.355
B3 250	.157	.044	-.146
C3	.169	.068	-.101
B4 750	.531	.486	.243
C4	.576	.633	.515
B5 1000	.688	.736	.652
C5	.755	.869	.779

% LIGHT LOSS (% Δ) = $\frac{\Gamma}{1-\Gamma} \times 100$

SAMPLE CUVETTE	5-MIN % Δ	15-MIN % Δ	30-MIN % Δ
B2			
C2			
B3			
C3			
B4			
C4			
B5			
C5			

EFFECTIVE CONCENTRATIONS (EC_s)

EC _s	5-MIN	15-MIN	30-MIN
EC ₂₀	368.6	532.4	
EC ₅₀ (95% Confid. Limits)	1324.4 (1201.2 - 1460.3)	1055.0 (884.8 - 1257.4)	
EC ₈₀	4753.1	2090.5	

EC₅₀ > 1000

EC₅₀ > 1000