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-3104. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was not noted. The test sample is FX-3104, 6%. Current information indicates it is a mixture of 0.48% PFOS, 14.09% diethylene glycol butyl ether, 59% water, 17.6% ethylene glycol, 1.44% sodium octyl sulfate, 4% inhibitor, 2.0% polyoxyethylene monooctylphenyl ether, 1.25% propane sultone foamer, 0.03% 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 EC_{50} = >1000 mg/L
15-minute EC_{50} = >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 EC_{50} 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 components in the solution.

REFERENCES

This study was conducted by the 3M Environmental Laboratory, St. Paul, Minnesota, Lab Request number C1111-2, 1985.

OTHER

Last changed: 6/26/00.

ENVIRONMENTAL LABORATORY

MICROBIAL TOXICITY TEST
MICROTOX® RAW DATA

LJR C1111-2
DATE 6 Feb 85
ANALYST RAM

SAMPLE DESCRIPTION: FX-3104 6% Type Light Water

SAMPLE CUVETTE	FINAL ASSAY CONCENTRATION	INITIAL READING I(0)	FINAL READINGS 5-MIN I(5)	15-MIN I(15)	30-MIN I(30)
B1	BLANK X10	90	32	17	8
C1	DUPLICATE	72	26	14	6
B2	100	70	30	22	18
C2	duplicate	55	24	17	13
B3	250	62	26	19	13
C3	duplicate	69	29	22	18
B4	750	70	23	16	12
C4	duplicate	66	20	14	9
B5	1000	73	21	13	9
C5	duplicate	60	17	11	7

MICROTOX DATA REDUCTION

LRC III - 2
DATE 6 Feb 85
ANALYST KAM

BLANK RATIOS* = final / initial

BLANK CUVETTE	5-MIN Blank Ratio	5-MIN Difference	15-MIN Blank Ratio	15-MIN Difference	30-MIN Blank Ratio	30-MIN Difference
B1	32/90 = .356	.005	17/90 = .189	.005	8/90 = .089	.006
C1	26/72 = .361		14/72 = .194		6/72 = .083	

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

MEAN BLANK RATIOS = (B1 Bk Ratio + C1 Bk Ratio) / 2

5-MIN	15-MIN	30-MIN
.359	.192	.086

NORMALIZED LIGHT LOSS (Γ EFFECT) = (Mean Blank Ratio × Initial Sample Reading) / Final Sample Reading

SAMPLE CUVETTE	5-MIN Γ	15-MIN Γ	30-MIN Γ
B2	-.162	-.389	-.666
C2	-.177	-.379	-.636
B3	-.144	-.374	-.590
C3	-.146	-.398	-.670
B4	.093	-.160	-.498
C4	.185	-.095	-.369
B5	.248	.078	-.302
C5	.267	.047	-.263

% LIGHT LOSS (%Δ) = Γ / (1+Γ) × 100

SAMPLE CUVETTE	5-MIN %Δ	15-MIN %Δ	30-MIN %Δ
B2			
C2			
B3			
C3			
B4	8.5 %		
C4	15.6 %		
B5	19.9 %	7.2 %	
C5	21.	4.5 %	

EFFECTIVE CONCENTRATIONS (EC_s)

EC_s	5-MIN	15-MIN	30-MIN
EC_{20}			
EC_{50} (95% Confid. Limits)	>1000	>1000	
EC_{80}			

($EC_{50} > 1000$)