

## MICROBICS MICROTOX® TOXICITY TEST

### TEST SUBSTANCE

**Identity:** Perfluorooctanoic acid, ammonium salt; may also be referred to as PFOA ammonium salt, Ammonium perfluorooctanoate, PFO, FC-116, FC-126, FC-169, FC-143 or as the major component of FC-118. (Octanoic acid, pentadecafluoro-, ammonium salt, CAS # 3825-26-1)

**Remarks:** The test sample is FC-118. It's purity was not sufficiently characterized, though current information indicates is 20% FC-143 in 80% water. The 3M product lot number was not noted.

***The following summary applies to the test sample as a mixture of the test substance in water solution with incompletely characterized concentrations of impurities. Data may not accurately relate toxicity of the test sample with that of the test substance.***

### METHOD:

**Method:** Microbics Microtox® "BASIC" Procedure

**Test type:** Static acute

**GLP:** No

**Year Completed:** 1996

**Species:** *Photobacterium phosphoreum*

**Analytical monitoring:** pH and osmotic condition

**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:** Millipore Milli-Q™ water

**Stock and test solution preparation:** A primary 10 g/L stock solution was prepared in Millipore Milli-Q™ water. The pH of the stock solution was 6.0 (no adjustment) and an osmotic adjustment was made using 200 mg NaCl in 10 mL stock solution. Appearance of test solutions was noted as "clear and colorless". All test solutions were made by proportional dilutions.

**Exposure vessels:** 3 mL Cuvettes.

**Number of replicates:** two

**Number of concentrations:** Four plus a blank control

**Element basis:** Percent light loss.

### RESULTS

**Nominal concentrations:** Blank control, 625, 1250, 2500, and 5000 mg/L  
**Element value:** 5-minute  $EC_{50}$  = 4460 (4020 – 4950) mg/L  
15-minute  $EC_{50}$  = 3360 (3090 – 3641) mg/L  
30-minute  $EC_{50}$  = 3150 (2910 – 3420) mg/L

Element values based on nominal concentrations.

**Remarks:** Testing was conducted on the mixture of the test substance as described in the test substance remarks field. The values reported apply to that mixture and not the test substance.

### CONCLUSIONS

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The FC-118 30-minute  $EC_{50}$  for *Photobacterium phosphoreum* was determined to be 3150-mg/L with a 95% Confidence Interval of 2910 to 3420 mg/L.

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

### DATA QUALITY

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**Reliability:** Klimisch ranking 2. Testing meets all criteria for quality testing, but lacks analytical confirmation of test substance concentrations. There is a lack of characterization of the test sample.

### REFERENCES

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This study was conducted by the 3M Environmental Laboratory, St. Paul, Minnesota, Lab Request number P1626.

### OTHER

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**Last changed:** 5/25/00

ENVIRONMENTAL LABORATORY: MICROTOX PREP SHEET

LR: P1626-3  
Date: 4-24-96  
Analyst: TLS  
Pg 9 of 12

TEST SUBSTANCE: FC-118

1. Preparation of Stock Solution

- Mass/Vol. Test Substance: 1.0g/100ml
- Final Dilution Volume: 10g/L
- Diluent: Milli-Q Water
- Final Concentration of Stock Solution: 10g/L

2. pH Adjustment of Stock Solution

- Initial pH of Stock Solution: 6.0
- pH Adjusted to: —
- pH Adjusted with: —

3. Osmotic Adjustment of Stock Solution

- Osmotic Adjuster: NaCl
- Comments: 10ml of stock soln was added to 200mg NaCl

4. Appearance of pH and Osmotically Adjusted Stock Solution

CLEAR or OPAQUE (circle one)

• Color: clear

• Comments: —

5. Comments

—  
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MICROTOX DATA REPORT  
Basic Test

FILE FC-118.K5  
P1626

Test Time: 5 minutes

| Time: 5 minutes |              | Osmotic Adjustment: NaCl |          |              |                       |
|-----------------|--------------|--------------------------|----------|--------------|-----------------------|
| NUMBER          | IO/IT        | CONC. %                  | CR/GAMMA | % Light Loss | (w) mean % Light Loss |
| Control         | 96.44/ 80.99 | 0.0                      | 0.8605 # | —            | —                     |
| Control         | 93.87/ 81.65 | 0.0                      | 0.8698 # | —            | —                     |
| 1               | 99.79/ 71.54 | 625.0000                 | 0.202    | 16.8         | 15.4                  |
| 2               | 92.97/ 69.10 | 625.0000                 | 0.164    | 14.1         |                       |
| 3               | 89.12/ 70.50 | 1250.0000                | 0.097    | 8.8          | 13.0                  |
| 4               | 93.40/ 66.54 | 1250.0000                | 0.214    | 17.6         |                       |
| 5               | 92.47/ 59.17 | 2500.0000                | 0.352 #  | 26.0         | 26.8                  |
| 6               | 87.29/ 54.74 | 2500.0000                | 0.380 #  | 27.5         |                       |
| 7               | 93.57/ 37.21 | 5000.0000                | 1.147 #  | 63.4         | 54.1                  |
| 8               | 91.35/ 34.52 | 5000.0000                | 1.290 #  | 56.3         |                       |

CR = CORRECTION FACTOR = 1.000  
# Used for calculations

EC504459.0561 MG/L (95% CONFIDENCE RANGE: 4020.8088 TO 4945.0747)

Signature Ludy Stiefenhofer TEST DATE: 4-24-96  $\gamma = \frac{\text{gamma}}{(\text{gamma} + 1)}$   $\gamma = 100$   
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ETC50

CONFIDENTIAL



MICROTOX DATA REPORT  
Basic Test

FILE FC-118.K30  
P1626

Test Time: 30 minutes

| NUMBER  |              | IO/IT     |          | CONC. | OR/GAMMA | % Light Loss | (*) Mean Light Loss |
|---------|--------------|-----------|----------|-------|----------|--------------|---------------------|
| Control | 96.44/ 77.66 | 0.0       | 0.8055 # | —     | —        | —            | —                   |
| Control | 93.87/ 77.22 | 0.0       | 0.8226 # | —     | —        | —            | —                   |
| 1       | 99.39/ 57.95 | 525.0000  | 0.396    | 29.4  | 27.1     |              |                     |
| 2       | 92.97/ 34.97 | 425.0000  | 0.377    | 27.4  |          |              |                     |
| 3       | 89.12/ 58.95 | 1250.0000 | 0.231    | 18.8  | 23.8     |              |                     |
| 4       | 93.40/ 54.07 | 1250.0000 | 0.406    | 28.9  |          |              |                     |
| 5       | 92.43/ 47.51 | 2500.0000 | 0.584 #  | 36.7  | 43.5     |              |                     |
| 6       | 87.29/ 43.25 | 2500.0000 | 0.643 #  | 39.1  |          |              |                     |
| 7       | 93.59/ 21.74 | 5000.0000 | 2.504 #  | 58.0  | 71.5     |              |                     |
| 8       | 91.35/ 19.55 | 5000.0000 | 2.804 #  | 73.7  | 72.0     |              |                     |

OR = CORRECTION FACTOR = 0.8144  
\* Used for calculations

EC003154, 3713 MG/L (95% CONFIDENCE RANGE: 2912.8491 TO 3415.9197)

Signature Lucy Shuford

TEST DATE: 4-24-96

TIME:

TIME: \_\_\_\_\_  
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