ACUTE TOXICITY TO FISH

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate, which may also be referred to as PFOS, FC-95, or as a component of FC-203A. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was not provided. The test sample is FC-203A. Current information indicates it is a mixture of 1.34% PFOS, 25% diethylene glycol butyl ether, 67.85% water, 2.66% Sultone foamer, 3% sodium octyl sulfate, 0.1% sodium lauryl sulfate, and 0.05% tolyltriazole.

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: Not given
Type: Acute static
GLP: No
Year completed: 1975
Species: *Pimephales promelas*
Supplier: Not given.
Analytical monitoring: Temperature, pH, and DO
Exposure period: 96-hours
Statistical methods: LC_{50} values calculated using graphic interpolation.
Test fish age: Juvenile
Length and weight: Average length = 2 in.
Average weight = 1.5 g (wet)
Loading: Not given.
Pretreatment: None
Test conditions:
Dilution water: Carbon-filtered St. Paul City water, St. Paul, MN
Dilution water chemistry: Not given.
Lighting: Not given.
Stock and test solution preparation: Not given.
Concentrations dosing rate: Once
Stability of the test chemical solutions: Not noted
Exposure vessels: Not given.
Number of replicates: 1
Number of fish per replicate: Not given.
Number of concentrations: five plus a blank control
Water chemistry during the study:
pH range (0-96 hours):
7.0 – 7.0 (control exposure)

6.7 – 6.9 (750 mg/L exposure)*

Temperature range (0-96 hours): 69 – 70 °F

Dissolved oxygen range (0-96 hours):

4.7 – 5.6 mg/L (control exposure)

3.9 – 4.8 mg/L (750 mg/L exposure)*

* 750 mg/L (second highest concentration) exposure values used because the highest concentration used resulted in total mortality at 72 hours.

RESULTS

Nominal concentrations: Bk control, 100, 250, 500, 750, and 1000 mg/L
Element values: 96-hour LC50 = 300 mg/L

Element values based on nominal concentrations

Remarks: Testing was conducted on the 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 sample 96-hour LC_{50} for fathead minnow was determined to be 300 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking 3. Testing lacks record of methodology used. There is a lack of characterization of the test sample. Test solutions were not analyzed for test substance concentrations and confirmation of the amount of fluorochemical proportion in the solution.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, Lab Request number 2563, 1975.

OTHER

Last changed: 6/26/00

Original → LR-2543
Rewritten for biassay → LR 2563

740101

ENVIRONMENTAL ENGINEERING LABORATORY
AQUATIC TOXICITY WORK SHEET

Type Test 96 Hours - Static
Material Tested FC-203A
Test Organism Fathead Minnow
Avg. Weight 1.59g
Avg. Size 2 Inches
Date Started 1-7-75
Date Completed 1-11-75
Time Started 2:00PM
Plotted LC_{50} 300 PPM
Dilution Water Carbon Filtered - St. Paul City Water

Conc.	24 hrs % Survival	pH	D.O ppm	48 hrs % Survival	pH	D.O ppm	72 hrs % Survival	pH	D.O ppm	96 hrs % Survival	pH	D.O ppm
Control	100	7.0	5.6	100	7.0	5.3	100	7.0	5.0	100	7.0	4.7
100 PPM	100	6.9	5.2	100	7.0	5.0	100	7.0	4.7	100	7.0	4.5
250	90	6.9	5.0	60	7.0	4.7	60	6.9	4.5	60	6.9	9.5
500	90	6.8	5.0	60	6.9	4.5	50	6.9	4.2	20	6.8	4.0
750	90	6.8	4.8	20	6.9	4.5	10	6.8	4.2	10	6.7	3.9
1,000	70	6.8	4.7	20	6.8	4.3	0	6.8	4.0	0	—	—
Average Temperature			69			70			70			70

Comments: