ACUTE TOXICITY TO FISH

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, or FC-143. (Octanoic acid, pentadecafluoro-, ammonium salt, CAS # 3825-26-1)

Remarks: The 3M product lot number was 83. The test sample is FC-143. It's purity was not sufficiently characterized, though current information indicates it is a mixture of 96.5 - 100% test substance and 0 – 3.5% C_6, C_7, and C_9 perfluoro analogue compounds.

METHOD:

Method: Not noted.
Type: Static acute
GLP: No
Year completed: 1977
Species: *Pimephales promelas*
Supplier: Not noted.
Analytical monitoring: Temperature, pH and DO
Exposure period: 96-hours
Statistical methods: Graphed LC_{50}
Test fish age: Not noted.
Length and weight: Average length = 2 inches
Average weight = 1.6 g
Pretreatment: Not noted.
Test conditions:
Dilution water: Carbon-filtered City of St. Paul, MN water.
Dilution water chemistry:
Temperature: Not noted.
Dissolved Oxygen: Not noted
pH: Not noted.
Stock and test solution preparation: Not noted.
Concentrations dosing rate: Once
Stability of the test chemical solutions: Not noted
Exposure vessels: Not noted.
Number of replicates: one
Number of fish per replicate: Not noted.
Loading rate: Not noted.
Number of concentrations: five plus a blank control
Water chemistry during the study:
Dissolved oxygen range (24 – 96 hours):
4.7 – 5.7 mg/L (control exposure)
4.0 – 4.9 mg/L (50 mg/L exposure)
pH range (24 – 96 hours):

7.0 – 7.1 (control exposure)
6.4 – 6.5 (50 mg/L exposure)**
Test temperature (24 – 96 hours): 70 - 72°F

RESULTS

Nominal concentrations: Bk control, 10, 20, 30, 40, and 50 mg/L
Element value: 96-hour LC50 = 70 mg/L (C.I. not calculated)

Element value based on nominal concentrations

CONCLUSIONS

The test sample 96-hour LC_{50} for fathead minnow was extrapolated to be 70 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking 3. There is insufficient documentation of the methodology. The LC_{50} was extrapolated from an insufficient number of data points. The general health and age of the fish are not noted. Sample purity was not properly characterized and it lacks analytical confirmation of test substance concentrations.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, Lab Request number 2340.

OTHER

Last changed: 5/24/00

L.L. 2340

ENVIRONMENTAL ENGINEERING LABORATORY
AQUATIC TOXICITY WORK SHEET

Test 96 hour Static — Material Tested Fe-143 lot #83

Organism Fathead Minnow — Avg. Weight 1.6g — Avg. Size 2 Inches

Started 6-25-74 — Date Completed 6-29-74

Time Started 4:00PM — Plotted LC_{50} 70 mg/l

Dilution Water Carbon filtered-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	5.7	100	7.0	5.2	90	7.0	5.0	90	7.1	4.7
10 mg/l	100	7.0	5.2	100	7.0	5.0	100	7.1	4.7	100	7.1	4.5
20	100	6.9	5.2	100	7.0	5.0	100	7.0	4.7	100	7.0	4.6
30	100	6.7	5.0	100	6.7	4.9	100	6.9	4.5	100	6.9	4.2
40	100	6.7	5.0	100	6.7	4.9	100	6.7	4.5	100	6.9	4.2
50	90	6.5	4.9	90	6.4	4.7	80	6.5	4.5	80	6.5	4.0
Average Temperature			72			70			70			70

Comments: mg/l 100 320 480 640 800