

AR226-1755

ACUTE TOXICITY TO BLUEGILL SUNFISH

TEST SUBSTANCE

Identity: Perfluorooctanesulfonate; may also be referred to as PFOS or FC-95. (1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt, CAS # 2795-39-3)

Remarks: The test substance is a white powder (3M Lot 583) of uncharacterized purity.

METHOD

Method: Not provided

Type: Static acute

GLP: No

Year completed: 1978

Species: *Lepomis macrochirus*

Supplier: Not provided

Analytical monitoring: pH, DO and temperature

Exposure period: 96-hours

Statistical methods: Not provided

Test fish age: Not provided

Length and weight: Average length = 3.0 cm.
Average weight = 1.2 g

Loading: 1.5 g fish / L

Pretreatment: None noted

Test conditions:

Dilution water: Laboratory well water

Dilution water chemistry:

Dissolved Oxygen: 9.9 mg/L

pH: 7.6

Stock and test solution preparation: Not provided

Concentrations dosing rate: Once

Stability of the test chemical solutions: Not noted

Exposure vessels: Glass aquaria containing 20L of test solution.

Number of replicates: one

Number of fish per replicate: 20

Number of concentrations: five plus a negative control

Water chemistry during the study:

Dissolved oxygen range (0 – 96 hours):

5.7 – 9.9 mg/L (control exposure)

4.8 – 9.9 mg/L (100 mg/L exposure)

pH range (0 – 96 hours)

7.6 – 7.8 (control exposure)

7.6 – 7.7 (100 mg/L exposure)

Test temperature: 19 - 20°C

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RESULTS

Nominal concentrations: Bk control, 56, 75, 100, 135, 180 mg/L
Element value: 96-hour LC_{50} = 68 mg/L (95% C.I. 62 – 74 mg/L)

All element values based on nominal concentrations

Statistical Evaluation of Mortality:

Analysis method used to calculate LC_{50} values and the corresponding confidence limits not noted.

Cumulative percent mortality:

Nominal Test Conc., mg/L	24-hours	48-hours	72-hours	96-hours
Neg. Control	0	0	0	0
56	5	10	20	20
75	20	25	55	60
100	50	65	90	100
135	85	95	100	100
180	80	100	100	100

CONCLUSIONS

The test sample 96-hour LC_{50} for bluegill sunfish was determined to be 68 mg/L with a 95% confidence interval of 62-74 mg/L. The 96-hour no observed effect concentration was <56 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking 3. This study lacks sufficient documentation, characterization of the test substance purity, and analytical measurement of test concentrations.

REFERENCES

This study was conducted by the 3M Company on 5/27/78.

OTHER

Last changed: 4/14/04

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