

ACUTE TOXICITY TO FISH (RAINBOW TROUT)

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate, which may also be referred to as PFOS, FC-95, or as a component of FC-206 or L-3243. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was 1. The test sample is FC-206 (L-3243). Current information indicates it is a mixture of 0.67% PFOS, 17.5% diethylene glycol butyl ether, 78.91% water, 1.33% Sultone foamer, 1% sodium octyl sulfate, 0.04% sodium lauryl sulfate, 0.5% polyoxyethylene monooctylphenyl ether, and 0.05% benzotriazole.

The following summary applies to a mixture with incompletely characterized concentrations of impurities. Data may not accurately reflect toxicity of the fluorochemical component of the test sample.

METHOD:

Method: Not given.

Type: Acute static.

GLP: No

Year completed: 1974

Species: *Salmo gairdneri*

Supplier: Not given.

Analytical monitoring: Dissolved oxygen, and temperature

Exposure period: 96-hours

Statistical methods: LC₅₀ value calculated using graphic interpolation.

Test fish age: Juveniles

Length and weight: Average length = 38.1 mm
Average weight = 0.9 g (wet)

Loading: Not given.

Pretreatment: None.

Test conditions:

Dilution water: Dechlorinated 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:

Temperature range (0-96 hours): 50 °F

Dissolved oxygen range (0-96 hours):

4.9 – 5.9 mg/L (control exposure)
4.0 – 5.2 mg/L (3000 mg/L exposure)*
* 3000 mg/L (intermediate concentration) exposure values used
because the highest two concentrations resulted in total mortality by 72
hours.

RESULTS

Nominal concentrations: Blank control, 2000, 2500, 3000, 3500, and 4000 mg/L.

Element values: 96-hour LC₅₀ = 2500 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 FC-206 96-hour LC₅₀ for rainbow trout was determined to be 2500 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 and documentation. The sample purity was not properly characterized and the study lacks analytical confirmation of the amount of fluorochemical proportion in the solution.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, 1974.

OTHER

Last changed: 6/28/00

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Concentration Analysis?

Fish

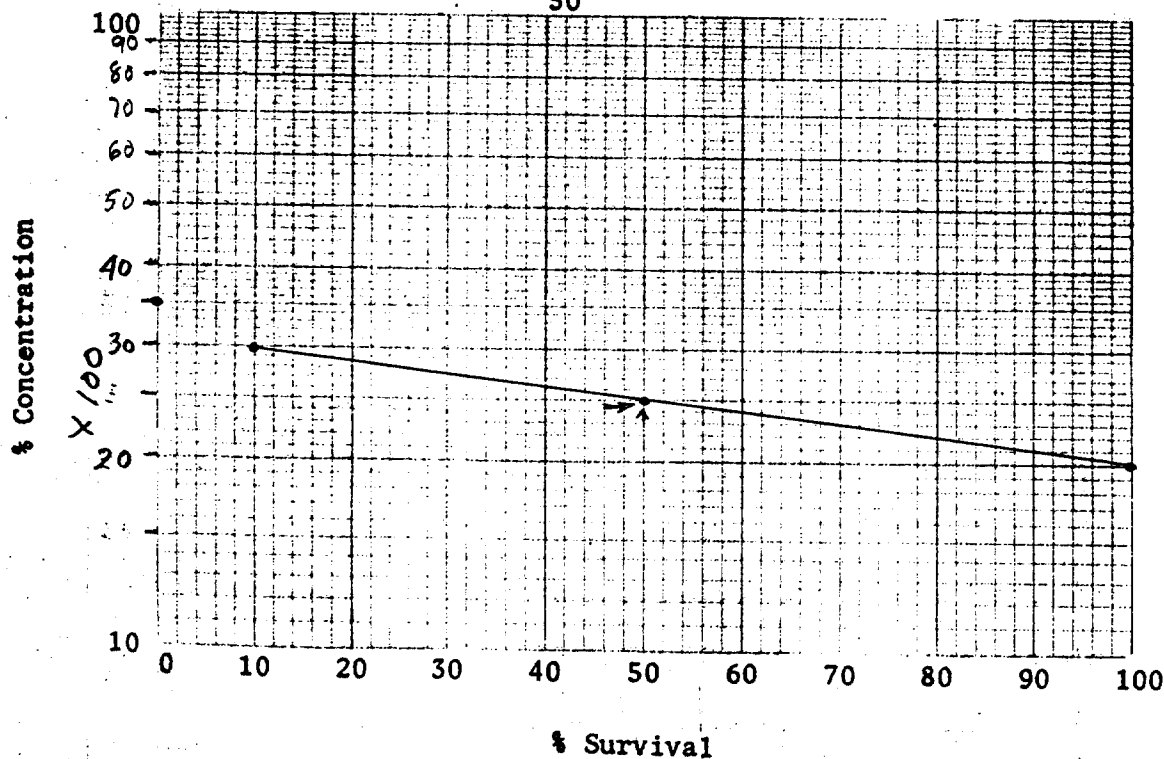
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ENVIRONMENTAL ENGINEERING LABORATORY
AQUATIC TOXICITY WORK SHEETProduct FC-206Type Test STATIC - 96 hourMaterial Tested L3293 Lot #1Test Organism RAINBOW TroutAvg. Weight .9 g Avg. Size 3.81 cmDate Started 4/1/74Date Completed 4/5/74Time Started 4:00 pmPlotted LC₅₀ 2500 mg/lDilution Water ST. Paul City - dechlorinatedLC₁₀₀ = 2000

Conc.	24 hrs			48 hrs			72 hrs			96 hrs		
	% Survival	pH	D.O ppm	% Survival	pH	D.O ppm	% Survival	pH	D.O ppm	% Survival	pH	D.O ppm
Control	100		5.9	100		5.5	100		5.3	100		4.9
2000 mg/l	100		5.9	100		5.0	100		4.7	100		4.5
2500	100		5.3	100		4.9	80		4.5	50		4.3
3000	100		5.2	30		4.9	10		4.3	10		4.0
3500	90		5.2	20		4.9	0		4.2	—		—
4000	60		5.0	0		4.2	—		—	—		—

Average Temperature 50° - 50° - 50° - 50° F

Comments:

LC₅₀ Calculation

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