

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-203. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was not noted. The test sample is FC-203. Current information indicates it is a mixture of 1.34% PFOS, 35% diethylene glycol butyl ether, 37.85% water, 20% ethylene glycol, 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 toxicity of the fluorochemical component of the test sample.

METHOD:

Method: Not given.

Type: Continuous flow

GLP: No

Year completed: Not given.

Species: *Salmo gairdneri*

Supplier: Not given.

Analytical monitoring: pH, and DO

Exposure period: 96-hours

Statistical methods: Not given.

Test fish age: Not given.

Length and weight: Not given.

Loading: Not given.

Pretreatment: None

Test conditions:

Dilution water: Not given.

Dilution water chemistry: Not given.

Lighting: Not given.

Stock and test solution preparation: Stock solution of 160 g/L prepared, then diluted with dilution water to prepare the sample concentrations.

Concentrations dosing rate: Flow-through

Stability of the test chemical solutions: Not given.

Exposure vessels: Not given.

Number of replicates: Not given.

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): 7.3 – 7.8

Dissolved oxygen range (0-96 hours): 7.2 – 9.0 mg/L

RESULTS

Nominal concentrations: Bk control, 25, 50, 100, 200, and 400 mg/L.

Element values: 96-hour LC₅₀ = >400 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 LC₅₀ for rainbow trout was determined to be >400 mg/L. No mortality or sublethal effects observed at this concentration.

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DATA QUALITY

Reliability: Klimisch ranking = 3. Testing lacks record of methodology used and data sheets. 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.

OTHER

Last changed: 6/27/00

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FC-203.

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96 hr LC₅₀

>2000ppm

QUATIC TOXICITY:

Test Org	Test Condition	96 hr LC ₅₀
rainbow trout (<u>Salmo gairdneri</u>)	Acute Flowthrough	> 400mg/L *

Note: No mortality ~~or~~, ~~sublethal~~, ~~behavioral~~ effects ~~were~~ ~~noted~~ occurred at 400mg/L.

FC-203 was ~~the~~ Test concentrations of FC-203 were 25, 50, 100, 200 and 400 mg/L. ~~prep diluted~~ prepared using deionized water.

Rainbow Trout Bioassay:

Sample preparation: 160 g of FC-203 was dissolved in 1 liter deionized water. This mixture ~~was~~ then diluted with dilution water ~~to~~ prepare the samples of ^{concs} shown below. 25, 50, 100, 200 and 400 mg/L.

Dissolved oxygen: ^{pH} The D.O. ^{pH} ~~was~~ measured for ~~all~~ the ~~test~~ ~~to~~ ^{the} samples ^{the} ~~control~~ at 0, 48 and 96 hours of the acute flowthrough toxicity test. The D.O. ranged from 7.2 - 9.0 mg/L and the pH ~~was~~

→ D.O. 7.2 - 9.0 mg/L

→ pH 7.3 - 7.8

Percent water saturation of D.O. ranged from 70% ~~at 12~~ ^{at 11} and 89% at 13C

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Nominal 24 hours 72 hours 96 hours

Test Conc

mg/L

Control

25

100

200

400

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