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 LC_{50} 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

96 hr LC_{50}
>2000 ppm

FC-203.

~~QUATIC TOXICITY~~:

Test Org	Test Condition	96 hour LC_{50}
Rainbow trout (Salmo gairdneri)	Acute Flow through	> 400 mg/L *

Note: No mortality, ~~sublethal behavioral~~ or abnormal effects ~~were noted~~ occurred at 400 mg/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 litre deionized water. ~~This mixture was~~ then diluted with dilution water ~~to~~ prepare the samples ~~of~~ concs. ~~concentr shown below~~. 25, 50, 100, 200 and 400 mg/L.

Dissolved oxygen + pH: The D.O + pH were measured for ~~all~~ the control + all the test ~~ten~~ samples + the ~~control~~ at 0, 48 and 96 hours of the acute flowthrough toxicity test. ~~The D.O ranged from 7.2 9.8 mg/L and the pH ra~~

D.O 7.2 – 9.0 mg/L

pH 7.3 – 7.8 mg/L

Percent water saturation of D.O ~~ranged from~~ 70 ~~or 89%~~ at 12c ~~at 13 and~~ 89% at 13c.

Nominal Test Conc mg/L	24 hours	72 hours	96 hours
Control			
25			
~~100~~ 50			
100			
200			
400			