

ACUTE TOXICITY TO FISH

TEST SUBSTANCE

Identity: Perfluorooctanesulfonylamido(ethyl)acetate; may also be referred to as PFOSAA, FC-128 or as the major component of FC-127, FC-129, FC-109, or FC-109-X. (Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt, CAS # 2991-51-7)

Remarks: The test sample is FC-128. Current information indicates it is a mixture of 86% test substance and 14% C₄-C₇ fluoroalkyl carboxylate compounds. 3M production lot number 664.

METHOD:

Method: Not noted.

Type: Static acute

GLP: No

Year completed: 1974

Species: *Pimephales promelas*

Supplier: Not noted.

Analytical monitoring: Temperature, pH and DO

Exposure period: 96-hours

Statistical methods: Graphed

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 water

Dilution water chemistry: Not noted.

Stock and test solution preparation: Individual weights

Concentrations dosing rate: Once

Stability of the test chemical solutions: Not noted

Exposure vessels: Type not noted. 16L volume.

Number of replicates: one

Number of fish per replicate: Not noted

Number of concentrations: five plus a negative control

Water chemistry during the study:

Final Dissolved oxygen *:

4.7 mg/L (control exposure)

3.1 mg/L (40 mg/L exposure)**

Final pH:*

7.1 (control exposure)
6.7 (40 mg/L exposure)**
Final Test temperature:* 70°F

* Copy of study is not legible for the readings taken at 24 hours.
Therefore, only final values are noted.

** 40 mg/L test group data given because total mortality occurred in
the 50 mg/L test group by 72 hours and all data was not collected.

RESULTS

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

All element values based on nominal concentrations

CONCLUSIONS

The test sample 96-hour LC₅₀ for fathead minnow was determined to be
30 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking 3. This study lacks documentation and
information on the methodology. Sample purity was not properly
characterized.

REFERENCES

This study was conducted by the 3M Company, Environmental
Laboratory, St. Paul, MN, completed on June 29, 1974.

OTHER

Last changed: 5/16/00

000351

cc: LAB REQUEST BOOK - 42-5W

File: _____

BEST COPY AVAILABLEWater and Wastewater

REQUEST FOR LABORATORY WORK

Lab Request No. 2340

TO: ENVIRONMENTAL ENGINEERING LABORATORY - BUILDING 53-6N

Requestor

Lab Personnel

Name: D. Bacon Request Date _____
 Project No. _____ Prob. No. _____ Code # _____
 Description: FC - surfactants
 Sample Date: _____ Date Needed: _____
 Hold Sample For _____ Days Est. Time: _____ Hrs.

Date Rec'd. Sample: _____
 Analyst: MFE
 Y _____ B _____ PRIO-ASSAY
 Date Completed: 6-29-74
 Hrs. Spent: 20

Sample Description

Total Hardness, mg/l as CaCO₃
 Calcium Hardness, mg/l as CaCO₃
 "P" Alkalinity, mg/l as CaCO₃
 "M" Alkalinity, mg/l as CaCO₃
 pH
 Sulfate, mg/l as SO₄
 Nitrate, mg/l as NO₃
 Chloride, mg/l as Cl
 Silica, mg/l as SiO₂
 Fluoride, mg/l as F
 Ortho Phosphate, mg/l as P
 Total Phosphate, mg/l as P
 Total Chromium, mg/l as Cr
 Hex. Chromium, mg/l as Cr
 Total Cyanide, mg/l as CN
 Ferrocyanide, mg/l as CN
 Iron, mg/l as Fe
 Manganese, mg/l as Mn
 Surfactant, mg/l as LAS
 Phenol, mg/l
 BOD, mg/l
 COD, mg/l (Short, Long, Dilute)
 Total Suspended Solids, mg/l
 Volatile Suspended Solids, mg/l
 Turbidity, mg/l Silica
 Total Solids, mg/l
 Total Volatile Solids, mg/l
 Conductivity, mhos
 Total Bacteria, No./100 ml
 Total Coliform, No./100 ml
 Fecal Coliform, No./100 ml
 Fecal Streptococcus, No./100 ml
 Ammonia Nitrogen, mg/l as N
 Kjeldahl Nitrogen, mg/l as N
 Oil and Grease, mg/l

①
FC-95②
FC-128③
FC-134④
FC-143

Biossay 96 hour static LC50 29 mg/l 30 mg/l 20 mg/l 70 mg/l

Comments:

Lot # 542

664

510

83

Previous study - FC-95 → 32 mg/l
 FC-128 → 34 mg/l
 FC-134 → 32 mg/l

000332

3M Carbonless Paper

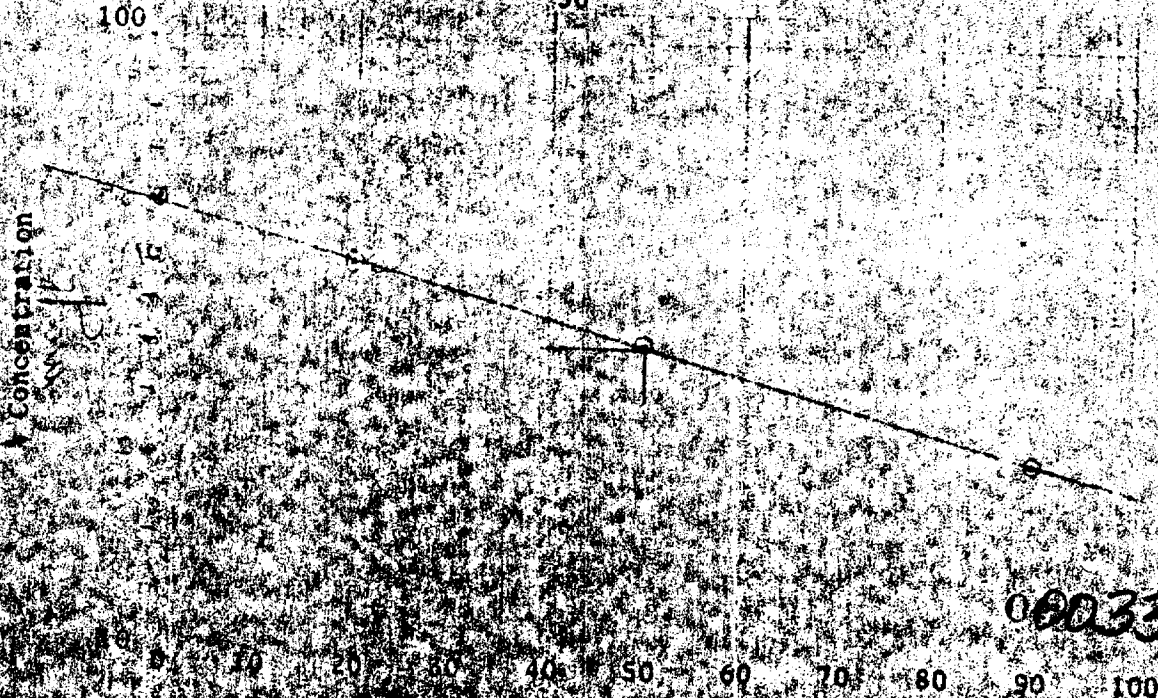
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ENVIRONMENTAL ENGINEERING LABORATORY
AQUATIC TOXICITY WORK SHEET

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Type Test 96 hour staticMaterial Tested FC-128 Lot #664Test Organism fathead minnowAvg. Weight 1.6g Avg. Size 2 inchesDate Started 6-25-71Date Completed 6-29-71Time Started 11:00 PMPlotted LC₅₀ goingDilution Water California City water

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	7.0	5.0	100	7.0	5.0	90	7.0	5.0	90	7.1	4.7
100 ppm	100	7.0	4.5	100	7.0	4.5	100	7.0	4.5	100	7.0	4.2
200 ppm	100	7.0	4.5	100	7.0	4.5	90	7.0	4.5	90	7.0	4.0
400 ppm	100	6.9	4.5	70	6.9	4.2	50	6.9	4.2	50	6.9	4.0
800 ppm	100	6.7	4.5	40	6.7	4.0	20	6.7	4.0	20	6.7	3.1
1600 ppm	90	6.5	4.5	0	6.5	4.5	0	6.5	4.5	0	6.5	4.5
Average Temperature												
Comments: <u>70 70</u>												

LC₅₀ Calculation

000333