

ACUTE TOXICITY TO FISH (FATHEAD MINNOW)

TEST SUBSTANCE

Identity: Potassium Decafluoro(pentafluoroethyl)cyclohexanesulfonate may also be referred to as FC-98. (CAS # 67584-42-3)

Remarks: The 3M production lot number was not noted. The test sample is FC-98. Its purity was not sufficiently characterized, though current information indicates it is a mixture of 66-70% test substance, 18-22% potassium decafluoro(trifluoromethyl)cyclohexanesulfonate, 9-13% potassium nonafluorodi(trifluoromethyl)cyclohexanesulfonate, 1-3% potassium perfluorocyclohexanesulfonate, and a trace of residual organic fluorochemicals.

METHOD:

Method: Not noted

Type: Acute static

GLP: No

Year completed: 1975

Species: *Pimephales promelas*

Supplier: Not noted.

Analytical monitoring: Temperature, pH, and dissolved oxygen.

Exposure period: 96-hours

Statistical methods: LC₅₀ values calculated using graphic interpolation.

Test fish age: Juveniles

Length and weight: Average length = 2 in.
Average weight = 1.5 g (wet)

Loading: Not noted.

Pretreatment: None

Test conditions:

Dilution water: Carbon-filtered St. Paul City water.

Initial dilution water chemistry: Not noted

Lighting: Not noted.

Stock and test solution preparation: Not noted.

Concentrations dosing rate: Once.

Stability of the test chemical solutions: Not noted.

Exposure vessels: Not noted

Number of replicates: none.

Number of fish per vessel: Not noted.

Number of concentrations: five plus a blank control

Water chemistry during the study:

pH range (24-96 hours):
7.0 – 7.0 (control exposure)

7.0 – 7.2 (300 mg/L exposure)*
Dissolved oxygen range (24-96 hours):

5.0 – 5.9 mg/L (control exposure)
3.9 – 4.5 mg/L (300 mg/L exposure)*

* 300 mg/L (second highest concentration) exposure values used because the highest concentration used resulted in total mortality at 72 hours.

Temperature range (0-96 hours): 70 - 72 °F

RESULTS

Nominal concentrations: Blank control, 40, 100, 200, 300, and 400 mg/L

Element values: 96-hour LC₅₀ = 200 mg/L

Element values based on nominal concentrations

CONCLUSIONS

The test sample 96-hour LC₅₀ for fathead minnow was determined to be 200 mg/L.

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

DATA QUALITY

Reliability: Klimisch ranking = 3. Study lacks description and records of the method followed. There is a lack of characterization of the test sample purity and the study lacks analytical confirmation of the amount of fluorochemical proportion in the test solutions. Study not conducted in duplicate.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, 1975.

OTHER

Last changed: 3/31/01