

ACTIVATED SLUDGE RESPIRATION INHIBITION TEST

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 337. 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: Acute Toxicity of a Compound to Activated Sludge (3M Env. Lab internal method).

Test type: Static acute

GLP: No

Year Completed: 1980

Analytical monitoring: Dissolved oxygen.

Statistical methods: Results were determined by graphic interpolation of the change in dissolved oxygen as a function of time.

Test organism source: Mixed liquor from Metro Wastewater Treatment Plant, St Paul, MN

Test condition:

Dilution water: Not noted.

Inoculation: Not noted.

Reference and test solution preparation: A stock solution was prepared by dissolving 0.6 g of test substance in 1 L of deionized water.

Test vessels: Not noted.

Number of concentrations: 1 plus blank, in duplicate.

Temperature: Not noted.

Total suspended solids and pH on day of testing: Not noted.

Element Basis: Change in dissolved oxygen compared to the blank.

RESULTS

Nominal concentrations: Blank control, and test substance at 100 mg/L.

Oxygen Uptake Rates (mg O₂/L/min):

Blank Control 1 = 1.52 (from Time 1-min to time 4-min)

Blank Control 2 = 1.52 (from Time 1-min to time 4-min)

Test Sample 1 = 1.53 (from Time 1-min to time 4-min)

Test Sample 2 = 1.57 (from Time 1-min to time 4-min)*

*This sample was aerated in a small beaker for approximately 5-minutes prior to running.

No apparent differences between oxygen uptake rates in blank controls and FC-98 exposure concentration of 100 mg/L

Element Value: 5-Min EC₅₀ > 100 mg/L

Element value based on nominal concentrations

CONCLUSIONS

FC-98 is apparently not inhibitory to activated sludge respiration after 5-minutes of exposure at 100 mg/L.

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DATA QUALITY

Reliability: Klimisch ranking = 3. Study lacks description and records of the method followed. The inoculum was not properly characterized. 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 .

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, Lab Request number 5428, 1980.

OTHER

Last changed: 3/31/01