BIODEGRADATION (BOD/COD)

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, FC-109-X, FC-4351, or L-6778. (Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt, CAS # 2991-51-7)

**Remarks:** The 3M production lot number was 501 (F6873). The test sample is L-6778. Current information indicates it is a mixture of 40% water, 34.4% PFOSAA, 5.6% $C_4$-$C_7$ fluoroalkyl carboxylate compounds, 17% isopropyl alcohol, and 3% ethanol.

***The following summary applies to a mixture with incompletely characterized concentrations of impurities. Data does not accurately reflect the degradation potential of the fluorochemical component of the test sample.***

METHOD:

**Method:** Not noted.
**Type:** Aerobic BOD
**GLP:** No
**Year completed:** 1982
**Contact time:** 28 days
**Innoculum:** Stale sewage from 3M's Cottage Grove, MN "Chemolite" facility.
**Seed concentration:** 6.0 mL/L
**Dilution water:** Not clarified. May be distilled water, aged 10 days or deionized water. The indication is that distilled, aged water was used to prepare the blanks, controls, and reference substance and that deionized water was used to prepare the test substance stock solution.
**Test solution preparation:** 2.00 grams of L-6778 were diluted to 1000 mL with DI water. Non-seeded and seeded dilution water blanks were utilized as well as seed controls and glucose – glutamic acid standard reference solutions.

## RESULTS

| | |
|---|---|
| **Chemical Oxygen Demand (COD)*:** | 530,000 mg/kg |
| **Biochemical Oxygen Demand (CBOD):** | |
| 5-Day: | 220,000 mg/kg |
| 10-Day: | 270,000 mg/kg |
| 20-Day: | 330,000 mg/kg |
| 28-Day: | Not reliable |

**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.

Results for day 28 of the testing were considered invalid. Only half the samples were analyzed, and the results ranged from 388,000 mg/kg to 802,000 mg/kg, indicating that the test substance or its degradation products could have been inducing toxicity to the microbial inoculum.

* It is unclear how the COD was determined. It is available only as a summary data point.

## CONCLUSIONS

No reliable conclusions can be derived from these studies. The indication is that the majority of the product components are readily biodegradable.

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

## DATA QUALITY

**Reliability:** Klimisch ranking = 3. The inoculum is not properly characterized. The testing was conducted on a mixture with chemicals having varying degrees of biodegradability, leading to potential misinterpretation of the results. The final results are not consistent. The study lacks reporting of the test method and procedures followed. The sample purity was not properly characterized and the study lacks analytical confirmation of the amount of fluorochemical proportion in the solution.

## REFERENCES

The studies were conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, 3M Lab Request number 8442-1, November, 1982.

OTHER

**Last changed:** 3/31/01