

ACTIVATED SLUDGE RESPIRATION INHIBITION

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-127. Current information indicates it is a mixture of 40-44% test substance, 32% water, 14% isopropanol, 4% ethanol, and 6-10% C₄-C₇ fluoroalkyl carboxylate compounds.

The following summary is abbreviated because the test sample is a mixture of the test substance in a water/organic solvent solution. Data may not accurately relate toxicity of the test sample with that of the test substance.

METHOD:

Methods: Protocol Reference EAR, 11/8/79.

Test type: Not noted.

GLP: No

Year Completed: 1981

Test organism source: Activated Sludge mixed liquor from St. Paul, Minnesota Metro Wastewater Treatment Plant

RESULTS

Nominal concentrations: Bk control, 1000 mg/L

Element values: No acute inhibitory effect on activated sludge respiration rate at 1000 mg/L with a contact time of 3.25 minutes.

Remarks: Testing was conducted on the mixture of the test substance as described in the test substance remarks field. The value reported applies to that mixture and not the test substance. No attempt was made to determine the impact of the presence of the organic solvents or what portion of the toxicity can be contributed to the Perfluorooctanesulfonylamido(ethyl)acetate.

CONCLUSIONS

Limited contact time estimates that FC-127 is not expected to inhibit the activity of activated sludge.

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

DATA QUALITY

Reliability: Klimisch ranking 3. Testing lacks record of methodology used. The method was not an agency approved method. There is a lack of characterization of the test sample. Test solutions not analyzed for test substance concentrations. Nominal values used.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, Lab Request number 7009.

OTHER

Last changed: 5/18/00

3M Environmental Laboratory

Acute Toxicity of a Compound (Substance) to Activated Sludge Mixed Liquor
Protocol Reference: EAR 11/8/79

Lab request no.: 7009 Date: 8-14-81 Analyst: W.A. Schilf

The activated sludge mixed liquor was collected from the St. Paul/Minneapolis Metro Wastewater Plant on 8-14-81.

Sample description: FC-127, F-6390, LOT-1

Preparation of stock solution: 0.60 grams of sample were diluted to 100 ml with deionized reagent water. Date of preparation: 8-14-81.

TIME		CONCENTRATION OF TEST MATERIAL IN ACTIVATED SLUDGE MIXTURE						
min.	sec.	DI H ₂ O CONTROL	1000 mg/l	100 mg/l	10 mg/l	DI H ₂ O CONTROL	0.10 mg/l	0.010 mg/l
	15	7.85	7.30					
	30	7.55	6.90					
1	-	6.90	5.85					
2	-	5.60	3.60					
3	-	4.35	1.25					
4	-	3.05	0.50	3 minutes 20 seconds				
5	-	1.80						
6	-	0.65						

COMMENTS:

after the dissolved oxygen was monitored, the dilutions were poured into 500-ml graduated cylinders to observe the sludge settling. The cylinders were shaken and photos were taken after the 5, 10, 20, 30, 40 and 60 min. intervals.

ENVIRONMENTAL LABORATORY SUMMARY SHEET
TEST: Acute Toxicity of a Compound to Activated Sludge
Mixed Liquor.

SAMPLE DESCRIPT.: FC-127, F-6390, LOT-1

ANALYST: WADE A. SCHEIL

DATE ANALYZED: 8-14-81

LAB REQ. NO.: 7009

10 X 10 PER INCH
DISSOLVED OXYGEN CONCENTRATION - mg/l

