ACTIVATED SLUDGE RESPIRATION INHIBITION TEST

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate; may also be referred to as PFOS, FC-95, or as a component of FC-203C and L-5440. (1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt, CAS # 2795-39-3)

Remarks: The 3M production lot number was 501. The test sample is L-5440. Current information indicates it is a mixture of 1.47% test substance, 60% water, 30% diethylene glycol butyl ether, 3% sodium octyl sulfate, 3% hydroxy foamer, 10% polyoxyethylene monooctylphenyl ether, 0.12% sodium lauryl sulfate, and 0.05% benzotriazol.

The following summary applies to the test sample as a mixture of the test substance in water solution with incompletely characterized concentration of impurities. Data may not accurately relate toxicity of the test sample with that of the fluorochemical component.

METHOD:

Method: 3M Protocol, Reference EAR 11/8/79
Test type: Static acute
GLP: No
Year Completed: 1981
Analytical monitoring: Dissolved oxygen concentrations
Statistical methods: Graphed
Test organism source: Activated sludge mixed liquor collected from the Metro Wastewater Treatment Plant, St. Paul, MN
Test condition:

Dilution water: Deionized water.
Synthetic sewage: Not used.
Reference and test solution preparation: A stock solution of the test substance was created by diluting 0.60 grams of test sample to 100 mL with dilution water. It is not noted exactly how the 1,000 mg/L test solution is prepared from this stock solution.
Test vessels: Not noted
Number of concentrations: 1 plus 1 blank control
Temperature: Not noted
Total suspended solids and pH on day of testing: Not noted
Element Basis: Respiration inhibition as determined by oxygen consumption.

RESULTS

Nominal concentrations: Blank control and 1,000 mg/L
Element values: No acute inhibitory effect on activated sludge respiration rate at 1000 mg/L with a contact time of 6 minutes.

Element values based on nominal concentrations.

Remarks: Testing was conducted on the mixture of the test substance as described in the test substance remarks field. The values reported apply to that mixture and not the fluorochemical proportion alone.

CONCLUSIONS

The test material exhibited no inhibitory effect at 1000 mg/L over a 6-minute exposure.

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. Test duration was not long enough to definitively determine if there might be other adverse effects that might occur during typical wastewater treatment retention times. Sample purity was not characterized and the study lacks analytical confirmation of the amount of fluorochemical proportion in the solution.

REFERENCES

This study was conducted by the 3M Environmental Laboratory, St Paul, MN, Lab Request number 6811S, 1981.

OTHER

Last changed: 6/26/00

SLUDGE TOX. RESULTS

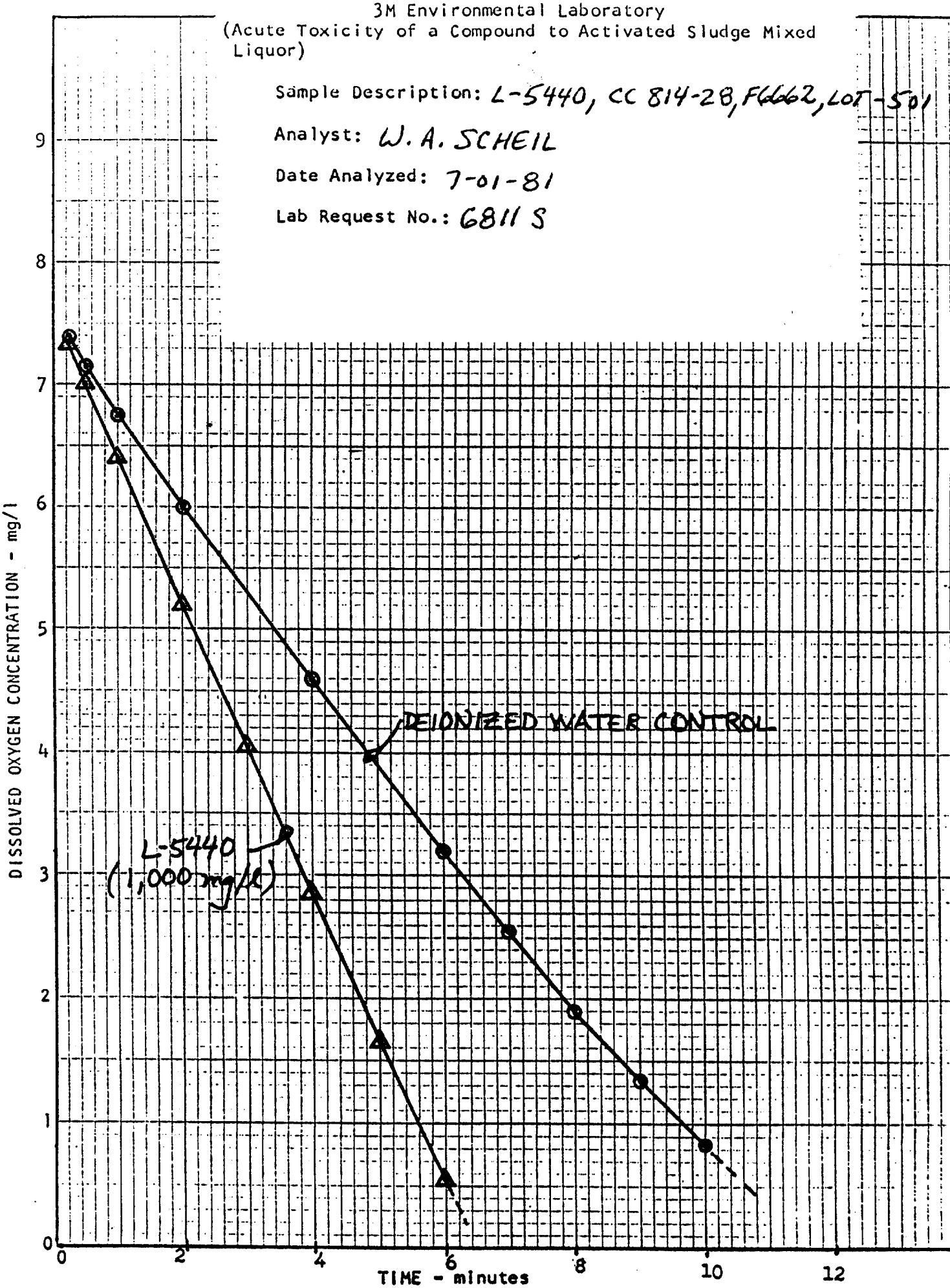
3M Environmental Laboratory
(Acute Toxicity of a Compound to Activated Sludge Mixed Liquor)

Sample Description: L-5440, CC 814-28, FC662, LOT-501

Analyst: W. A. SCHEIL

Date Analyzed: 7-01-81

Lab Request No.: 6811 S



DIETZGEN CORPORATION

001054

3M Environmental Laboratory
Acute Toxicity of a Compound (Substance) to Activated Sludge Mixed Liquor
Protocol Reference: EAR 11/8/79

Lab request no.: 6811.5 Date: 7-01-81 Analyst: W.A. Scheif

The activated sludge mixed liquor was collected from the St. Paul/Minneapolis Metro Wastewater Plant on 7-01-81.

Sample description: L-5440, CC 814-28, F6662, LOT-501

Preparation of stock solution: 0.60 grams of sample were diluted to 100 ml with deionized reagent water. Date of preparation: 7-01-81.

TIME min.	sec.	CONCENTRATION OF TEST MATERIAL IN ACTIVATED SLUDGE MIXTURE: DI H2O CONTROL	1000 mg/l	100 mg/l	10 mg/l	DI H2O Control	0.10 mg/l	0.010 mg/l
	15	7.40	7.35					
	30	7.15	7.00					
1	–	6.75	6.40					
2	–	6.00	5.20					
3		–	4.05					
4		4.60	2.85					
5		–	1.65					
6		3.20	0.55					
7		2.55						
8		1.90						
9		1.35						
10		0.85						
11								

COMMENTS: