

MICROBIAL INHIBITION (DEHYDROGENASE ACTIVITY TEST)

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate, which may also be referred to as PFOS, FC-95, or as a component of FC-203. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot number was not noted. The test sample is FC-203. Current information indicates it is a mixture of 1.34% PFOS, 35% diethylene glycol butyl ether, 37.85% water, 20% ethylene glycol, 2.66 % Sultone foamer, 3% sodium octyl sulfate, 0.1% sodium lauryl sulfate, and 0.05% tolyltriazole.

The following summary applies to a mixture with incompletely characterized concentrations of impurities. Data may not accurately reflect inhibition by the fluorochemical component of the test sample.

METHOD:

Method: Not noted.

GLP: No

Year completed: 1973-1974

Analytical monitoring: % Transmittance

Statistical methods: Results were determined by calculation of the % transmittance and comparison with the blank.

Test organism source: Not given

Contact time: Not given.

RESULTS

Nominal concentrations: Blank control, 0.01, 0.1, 0.5, 1, 5, and 10% conc.

Element values: Not given.

CONCLUSIONS

No conclusions given.

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. 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, Lab Request Numbers 2034, 2036, 2093, 1973-1974.

OTHER

Last changed: 6/27/00

cc: LAB REQUEST BOOK - 42-5W

File: _____

Water and Wastewater

REQUEST FOR LABORATORY WORK

Lab Request No. _____

2036

TO: ENVIRONMENTAL ENGINEERING LABORATORY - BUILDING 53-6N

Requestor	Lab Personnel
Name: <u>Dale Bacon</u> Request Date _____ Project No. <u>73-5760</u> Prob. No. <u>08</u> Code # <u>1300</u> Description: <u>FC-203 + L-3243</u> Sample Date: _____ Date Needed: _____ Hold Sample For _____ Days Est. Time: _____ Hrs.	Date Rec'd. Sample: <u>1/21</u> Analyst: <u>G.V.</u> Y <u>74</u> B <u>15</u> P <u>22</u> Date Completed: <u>1/24/74</u> Hrs. Spent: <u>6</u>

Sample Description

FC-203L-3243Total Hardness, mg/l as CaCO₃Calcium Hardness, mg/l as CaCO₃"P" Alkalinity, mg/l as CaCO₃"M" Alkalinity, mg/l as CaCO₃

pH

Sulfate, mg/l as SO₄Nitrate, mg/l as NO₃

Chloride, mg/l as Cl

Silica, mg/l as SiO₂

Fluoride, mg/l as F

Ortho Phosphate, mg/l as P

Total Phosphate, mg/l as P

Total Chromium, mg/l as Cr

Hex. Chromium, mg/l as Cr

Total Cyanide, mg/l as CN

Ferrocyanide, mg/l as CN

Iron, mg/l as Fe

Manganese, mg/l as Mn

Surfactant, mg/l as LAS

Phenol, mg/l

BOD, mg/l

COD, mg/l (Short, Long, Dilute)

Total Suspended Solids, mg/l Mix Liquor - x 5,640

Volatile Suspended Solids, mg/l

Turbidity, mg/l Silica

Total Solids, mg/l

Total Volatile Solids, mg/l

Conductivity, mhos

Total Bacteria, No./100 ml

Total Coliform, No./100 ml

Fecal Coliform, No./100 ml

Fecal Streptococcus, No./100 ml

Ammonia Nitrogen, mg/l as N

Kjeldahl Nitrogen, mg/l as N

Oil and Grease, mg/l

% Transmittance

% Transmittance

TTCBlind717010%10099

Comments:

5%100912.5%99791.0%83750.1%71660.01%64.569

000568 Carbonless

Water and Wastewater

REQUEST FOR LABORATORY WORK

Lab Request No. 2034

TO: ENVIRONMENTAL ENGINEERING LABORATORY - BUILDING 53-6N

Requestor

Lab Personnel

Name: D. BACON Request Date 1/29/79
Project No. _____ Prob. No. 02 Code # 4200
Description: _____
Sample Date: _____ Date Needed: _____
Hold Sample For _____ Days Est. Time: _____ Hrs.

Date Rec'd. Sample: 1/30
Analyst: Vraspir
Y 74 B 15 P 24
Date Completed: 2/11/79
Hrs. Spent: 8

Sample Description

Sample Description	FC75	FC200	FC205	L3242	FC206
Total Hardness, mg/l as CaCO ₃	ML				
Calcium Hardness, mg/l as CaCO ₃					
"P" Alkalinity, mg/l as CaCO ₃					
"M" Alkalinity, mg/l as CaCO ₃					
pH	Conc.	9.7	9.7	9.7	
Sulfate, mg/l as SO ₄	0.01%	20	15	19	
Nitrate, mg/l as NO ₃	0.1%	17	13.5	13	
Chloride, mg/l as Cl	0.5%	12.5	19	28	
Silica, mg/l as SiO ₂	1%	—	34	34	
Fluoride, mg/l as F	5%	41.5	55	58	
Ortho Phosphate, mg/l as P	10%	68.5	95	93.5	
Total Phosphate, mg/l as P	Control - ML + H ₂ O + TTC	26	26	26	
Total Chromium, mg/l as Cr					
Hex. Chromium, mg/l as Cr					
Total Cyanide, mg/l as CN					
Ferrocyanide, mg/l as CN					
Iron, mg/l as Fe					
Manganese, mg/l as Mn					
Surfactant, mg/l as LAS					
Phenol, mg/l					
BOD, mg/l					
COD, mg/l (Short, Long, Dilute)					
Total Suspended Solids, mg/l					
Volatile Suspended Solids, mg/l					
Turbidity, mg/l Silica					
Total Solids, mg/l					
Total Volatile Solids, mg/l					
Conductivity, mhos					
Total Bacteria, No./100 ml					
Total Coliform, No./100 ml					
Fecal Coliform, No./100 ml					
Fecal Streptococcus, No./100 ml					
Ammonia Nitrogen, mg/l as N					
Kjeldahl Nitrogen, mg/l as N					
Oil and Grease, mg/l					

Comments:

Perform TTC test in accordance with
attached test procedure. Suggested concentrations are
0.01%, 0.1%, 1%, 10%, 15%

000569

3M Carbonless Paper

PRODUCT ECOLOGICAL ASSESSMENT

REQUEST FOR LABORATORY WORK

Lab. Request N. 2093 ←

Light Water

Product FC 203

L 3243 (FC-206)

REQUESTOR

LABORATORY

NAME: SL
REQUEST DATE: 2-28-74
PROJECT NO.: 1000 PROB. NO.: 1000
CODE NO.: 1000
SAMPLE DATE: 3/22/74
DATE NEEDED: Y - B - P

DATE RECEIVED SAMPLE: 2-28-74
ANALYST: VRAPIR
DATE COMPLETED: 3/22/74
HOURS SPENT: 15hr
Y - B - P

DESCRIPTION:
PURPOSE OF TESTS:

BIOASSAY

Freshwater Fish
Marine Fish
Microorganisms
Aquatic Plants
Land Plants
Birds
Mammals

LEACHABILITY

Parent Material

pH
COD mg/g
BOD mg/g
BOD, ultimate
TOC
GC
Bioassay
Other

Leachate

pH
COD mg/g
BOD mg/g
BOD, ultimate
TOC
GC
Bioassay
Other

BEST COPY AVAILABLE

BEST COPY AVAILABLE

PHYSICAL & CHEMICAL PROPERTIES

Heat of Combustion cal/g (BTU/lb.)
Density
Ash
Corrosiveness

WATER POLLUTION

pH
COD
BOD
Oxygen Uptake
Treatability Study

OTHER

Bioaccumulation
Persistence
Degradation Products
Recyclability
Burnability

TTC

German Method

PC 205 L 2002

New Method

PC 205 13243

* See data sheets

ENVIRONMENTAL ENGR. LAB - WORK SHEET

SAMPLE DESCRIPTION

BEST COPY AVAILABLE

Date: 3/20/73
Analyst: GL
Hrs.:

(T.T.C)

German Material

Inc.
1101AM - 2-1-73

FC-203

Conc. %

%T - 480mμ

1	1ml/100	1ml/10	0.1	1/10	67
	1ml/100	5ml/10	0.5	1/10	73
	10ml/100	1ml/10	1.0	1/10	80
2			0.1	1/10	67
			0.5	1/10	74
			1.0	1/10	79
3			0.1	1/10	66.5
			0.5	1/10	77
			1.0	1/10	80

L-3243 FC-206

1	1ml/100	1/10	-	0.1	1/10	65
	1ml/100	5/10	-	0.5	1/10	71.5
	10ml/100	1/10	-	1.0	1/10	74
2				0.1	1/10	69
				0.5	1/10	71
				1.0	1/10	75
3				0.1	1/10	67
				0.5	1/10	70.5
				1.0	1/10	74.5
	Blind			1/10		70

SS 24.0599

SS 24.0599

SVS - ML

24.0228

24.0328

5,420 mg/l

0.0371

gr/5ml

0.0271

1/5

Reviewed by:

7420 mg/l

5420 mg/l

000572

ENVIRONMENTAL ENGR. LAB - WORK SHEET

SAMPLE DESCRIPTION

T.T.C.
Short

BEST COPY AVAILABLE

Date: 3/21/74
Analyst: G.V.
Hrs.:

FC-203		Conc. %	%T
1	1ml/100 - 1ml/10	0.1	36.5
	1ml/100 - 5ml/10	0.5	40
	10ml/100 - 1ml/10	1.0	41.5
2		0.1	34
		0.5	40
		1.0	42
3		0.1	36
		0.5	44
		1.0	46

L-3243 FC-206		Control	
1	1ml/100 - 1/10	0.1	35
	1ml/100 - 5/10	0.5	40
	10ml/100 - 1ml/10	1.0	40.5
2		0.1	36.5
		0.5	38.5
		1.0	40
3		0.1	35
		0.5	39.5
		1.0	40

SS 24.2138

SVS 24.2138

SVS ML

24.1643

24.1781

7,140 mg/l

0.0495 g/5

0.0357 g/5

Reviewed by: 9900 g/l

7,140 mg/l

000573