

BIODEGRADATION (BOD/COD)

TEST SUBSTANCE

Identity: A mixture containing perfluorooctanesulfonate, which may also be referred to as PFOS, FC-95, or as a component of FC-206 or L-3243. (1-Octanesulfonic acid) (CAS # 2795-39-3).

Remarks: The 3M production lot numbers were 501 and 895. The test sample is FC-206. Current information indicates it is a mixture of 0.67% PFOS, 17.5% diethylene glycol butyl ether, 78.91% water, 1.33% Sultone foamer, 1% sodium octyl sulfate, 0.04% sodium lauryl sulfate, 0.5% polyoxyethylene monooctylphenyl ether, and 0.05% benzotriazole.

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

METHOD:

Method: Not noted.

Type: BOD Ultimate and dichromate reflux COD

GLP: No

Year completed: 1976

Contact time: 20 days

Inoculum: Source not given.

RESULTS

Lot 501

Chemical Oxygen Demand (COD):	500,000 mg/L
Biochemical Oxygen Demand (BOD):	
5-Day:	45,000 mg/L
11-Day:	218,000 mg/L
15-Day:	304,000 mg/L
20-Day:	319,000 mg/L

Lot 895

Chemical Oxygen Demand (COD):	480,000 mg/L
Biochemical Oxygen Demand (BOD):	
5-Day:	45,000 mg/L
11-Day:	263,000 mg/L
15-Day:	270,000 mg/L
20-Day:	263,000 mg/L

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.

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. The inoculum is not properly characterized. 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, Lab Request number 3259, 1976.

OTHER

Last changed: 6/28/00

cc: LAB REQUEST BOOK - 42-5W

File: _____

Water and Wastewater

REQUEST FOR LABORATORY WORK

Lab Request No. 3259

TO: ENVIRONMENTAL ENGINEERING LABORATORY - BUILDING 53-6N

Requestor	Lab Personnel <u>ARD 7/8</u>			
Name: <u>Dale Bacon</u> Request Date: <u>6-2-76</u>	Date Rec'd. Sample: <u>6-7-76</u>			
Project No. <u>76-1216</u> Prob. No. <u>07</u> Code # <u>3308</u>	Analyst: <u>Schrodt</u>			
Description: <u>Fluoro Chem Products</u>	Y <u>76</u> B <u>24</u> P <u>21</u>			
Sample Date: _____ Date Needed: _____	Date Completed: <u>6-30-76</u>			
Hold Sample For _____ Days Est. Time: _____ Hrs.	Hrs. Spent: _____			
Sample Description	<u>See</u> <u>FM-3722</u> <u>LC-206</u> <u>FM-3722</u> <u>L-3974</u> <u>Lot 501</u> <u>Lot 895</u>			
Total Hardness, mg/l as CaCO ₃				
Calcium Hardness, mg/l as CaCO ₃				
"P" Alkalinity, mg/l as CaCO ₃				
"M" Alkalinity, mg/l as CaCO ₃				
pH				
Sulfate, mg/l as SO ₄				
Nitrate, mg/l as NO ₃				
Chloride, mg/l as Cl				
Silica, mg/l as SiO ₂				
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 <u>5 day and ultimate</u>	X	X	X	X
COD, mg/l (Short, Long, Dilute)	X	X	X	X
Total Suspended Solids, mg/l	<u>500,000</u>	<u>480,000</u>	<u>1,070,000</u>	<u>550,000</u>
Volatile Suspended Solids, mg/l				
Turbidity, mg/l Silica				
Total Solids, mg/l				
Total Volatile Solids, mg/l	<u>1500</u>	<u>1750</u>	<u>155</u>	<u>230</u>
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: * See attached sheet

BOD - 5 day ; ultimate

days FC 206 lot 501

5- 45,000 mg/l

11- 218,000 "

15- 304,000 "

20- 319,000 "

FC 206 lot 895

5- 45,000 mg/l

11- 263,000 "

15- 270,000 "

20- 263,000 "

FM- 3722

5- 131,000 mg/l

11- 535,000 "

15- 559,000 "

20- 563,000 "

L- 3974

5- 53,000 mg/l

11- ~~195,000~~ 203,000 "

15- 188,000 "

20- 203,000 "

✓ Jd - 2322