

W. R. Richard - Research Center

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AROCLOR - MCS 1016

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S.2nd
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R. H. Munch/E. S. Tucker

I received another letter from Al Posefsky reiterating his concern on 1) biodegradability of MCS 1016 (he wants rate data) and 2) keeping the U.L. rating and fire resistance.

Ralph told me that in order to restore the full Aroclor 1242 chlorine content we would have to cut into 17% of the product eliminating some of the 2,4-dichlorobiphenyl, which we don't want to do.

It seems we should try to make the best of the situation; calculate a position which restores part of the chlorine level and which makes economic sense. We showed some reasonable fire resistance in isomerized Aroclor 1239 and 1240 in trying to reach a new transformer fluid in the work done by Jim Sullivan. I believe it was MCS 717 and MCS 762.

Maybe we should just take a look at the fire resistance of MCS 1016; do some experimental work on MCS 1016 vs. a "partly restored C1 fluid 1240" vs. Aroclor 1242.

The biodegradation rate has to be clarified in our own minds and in the eyes of the industry. I think this has to be put in the context of what isomers are degrading in:

rats
fish
chickens
cow's milk
river water
activated sludge
C₂ cultures

and which isomers are not degrading, even though the rates are low. MCS 1016 needs to be put in this context. We also need to give some indication of at least C₂ culture rate data with and without biphenyl.

Light degradation - This information from Bloomfield needs to be brought together.

NEV 027217



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Will Ralph please lead the reevaluation of the chlorine and FR level and will Scott and Ralph put the story together on biodegradation.

.Thanks.

W. R. Richard

/is

NEV 027218

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BIODEGRADATION TEST PROGRAM

Provide Degradation Rates of Material Submitted for Testing

Business Group	Product (In order of Priority)	Testing Procedure	Location	Method of Analysis	Start Up Date	Estimated Completion Date
Functional Fluids	MCS 1043	1. Activated Sludge	St. Louis	EC/GC	8-10-70	2-71
	MCS 1016	2. River Die-Away	St. Louis	EC/GC	11-3-70	1-4-71
	Aroclor 1242	3. Shake Flask	Ruabon	EC/GC	Underway	?
	Aroclor 1254					
	Aroclor 5432	1. Activated Sludge	St. Louis	?	Holding until further analytical method development work is completed	
	Aroclor 5442	2. River Die-Away	St. Louis	?		
	Arobrom 5465		St. Louis	?		
	Trichloro- benzene	1. Activated Sludge	St. Louis	EC/GC	10-27-70	4-71
		2. River Die-Away	St. Louis	EC/GC	11-3-70	1-4-71
	Gulf 200	1. Activated Sludge	St. Louis	FID/GC	12-1-70	6-71
	Bright Stock	2. River Die-Away	St. Louis	FID/GC	12-1-70	2-2-71
	Neville					
	Uniclor 40					
	MCS 717	Shake Flask	Ruabon	EC/GC	Underway	?
	MCS 762					
	penta-Biphenyl Isomers					
	hexa Biphenyl Isomers					
	NC Phosphate	Materials to be incorporated into program as equipment and manpower become available.				
	Cresyl Diphenyl Phosphate					
	Tributyl Phos- phate					
	Tricresyl Phos- phate					
	Diphenyl Sulfone					
	Tolyl Xylyl Sulfone					
	Trichloro Di- phenyl Ether					
	Monobromodi- chlorobenzene					
	(Cont'd)					

NEV 027219

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BIODEGRADABLE TEST PROGRAM

Provide Degradation Rates of Material Submitted for Testing

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<u>Business Group</u>	<u>Product (In order of Priority)</u>	<u>Testing Procedure</u>	<u>Location</u>	<u>Method of Analysis</u>	<u>Start Up Date</u>	<u>Estimated Completion Date</u>
Functional Fluids (Cont'd)	2,2'-dichlorodi- phenyl ether Cumylphenol Isopropylphenyl Phosphate Orthoxenyldi- phenyl Phosphate Xylyl Phosphate Ester (Fyrquel 220)					
Plasticizers	MIPB HB-40	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	UV and FID/GC	5-27-70 8-31-70	Initial work completed; report to be issued
	Aroclor 5460	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	?	Holding until further analytical method develop- ment work is completed	
	Aroclor 1221	1. Activated Sludge 2. River Die- Away	St. Louis	EC/GC	10-27-70	4-71
			St. Louis	EC/GC	11-18-70	1-19-71
	Santicizer 711M	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	?	Holding until analytical method development complete	
	IN-425 IN-420	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	Hold -	Potential economic and acute toxicity problems	

(Cont'd)

NEW 027220
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Provide Degradation Rates of Material Submitted for Testing

<u>Business Group</u>	<u>Product (In order of Priority)</u>	<u>Testing Procedure</u>	<u>Location</u>	<u>Method of Analysis</u>	<u>Start Up Date</u>	<u>Estimated Completion Date</u>
Food and Fine Chemicals	3,4,4'-Trichloro- carbanilide	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	UV UV	7-27-70 8-28-70	Initial work completed; report to be issued
	3,3',4-Tri- chlorocarbanil- ide					Initial work completed; report to be issued
	3,3',4,4'-Tetra- chlorocarbanil- ide Santophen I	River Die-Away	St. Louis	UV	8-28-70	Initial work completed; report to be issued
General Chemicals	p-Nitrochloro- benzene o-Nitrochloro- benzene p-Chloroaniline nitrated orthene	1. Activated Sludge 2. River Die- Away	St. Louis St. Louis	?	Analytical method development work to be initiated 11-23-70.	

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