Monsanto

FROM (NAME & LOCATION): D. D. Mickelson - Krummrich

Coll — (Aroclor - PCB

DATE : February 22, 1972

SUBJECT : PCB's in ACL

REFERENCE :

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The Krummrich Plant AR&D Group has completed their study of PCB's in Monsanto-manufactured ACL's and in purchased ACL's (FMC's CDB products). This was precipitated by an article published in the newspapers in October 1971 in which two University of Wisconsin researchers found PCB's in machine dishwashing compounds produced by Economics Labs (Electrosol and Finish). Since ACL and CDB are used as the disinfectants in these, they were suspect.

The WGK ACL plant used PCB's (Pydraul A-200) principally in the hydraulic systems of the two Krupp centrifuges and the compactor. In late 1970, the decision was made to seek an acceptable substitute for Pydraul A-200 in ACL. The substitute found was Pydraul A-200-B (a terphenyl). The changeout was done as follows:

South Centrifuge	-	February 1971
North Centrifuge	-	Early April 1971
Compactor	-	Early April 1971

The systems were not completely drained on changeout and a residual level of 1% to 5% PCB was left in the system. Further changeouts and fluid loss replacement have diluted any PCB's in these systems to essentially zero.

The results obtained by the WGK lab are as follows:

Date Produced	Grade	Granulation	Lot No.	PCB Level (ppb)
ACL				
1970, March	ACL-59	R	KM-33	78
1970, March	ACL-59	R	KM-60	1

PCB (Pydraul A-200) Replaced with PCT (Pydraul A-200-B)

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Date Produced	Grade	Granulation	Lot No.	PCB Level (ppb)
ACL (cont'd.)				
1971, May 6	ACL-66	XG	KA-4563	61*
1971, May 19	ACL-66	R	KA-3129	6
1971, July 21	ACL-66	R	KA-3130	1
1971, Aug. 6	ACL-66	XG	KA-4617	9
1971, Dec. 27	ACL-85	R	KA-5410	5
1971, Dec. 27	ACL-85	XG	--	1
1971, Dec. 30	ACL-85	R	KA-5412	3
Crude CYA (ACL Raw Material)				
1972, Jan. 20	Crude CYA	--	--	2
FMC - CDB			FMC Lot	
1971, Oct.	ACL-60	G	128482	Interference**
1971, Oct.	ACL-59	XG	129601	Interference**
1971, Oct.	ACL-60	XG	130307	Interference**

*During the time this lot was produced, two totes of old ACL-66 Powder (produced prior to Pydraul changeout) were being reworked thru the compactor. This is the most probable reason PCB level is high, i.e. rework contained a high level of PCB which appeared in the new finished compacted product.

**Analyses were made by an adaptation of the basic PCB method. In the three FMC samples, the plant was unable to determine if PCB's were present because the FMC samples contained substances that interfered with our method of detection.

The test run by our lab is accurate down to 3 ppb. The "background" level of PCB's is in the 0-3 ppb range and can cause some problems in interpreting lower results.

CONCLUSIONS

1. Since the change to Pydraul A-200-B, the PCB level in Monsanto ACL has dropped significantly and does not appear to be a problem. No further work is planned since Monsanto's ACL appears to be acceptable on PCB level.

2. FMC-produced ACL contains some substance (undetermined) which interferes with PCB determination -- we do not know if FMC-ACL contains PCB's or how much.

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CONCLUSIONS (Cont'd.)

3. The research people at Wisconsin may have been misled by this interference to believe that machine dishwashing compounds (with FMC-ACL) contained PCB's.

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