Monsanto

FROM (NAME & LOCATION) C. Paton - General Offices

DATE March 25, 1969

SUBJECT AROCLORS FF

REFERENCE

cc M. W. Farrar - JFQ
→ Dr. R. E. Keller
W. E. Schalk/J. E. Springate
W. F. Waychoff
E. Wheeler/Dr. R. E. Kelly

TO : W. R. Richard

COMPANY CONFIDENTIAL

Here is an analysis of where our chlorinated biphenyls are used as plasticizers (1968 figures). This should be treated as company confidential information.

1. No carbon required paper

   NCR : 6.0 M Pounds Aroclor 1242

   Until mid-1968, only NCR plant was at Dayton, Ohio. There is now a plant at Portage, Wisconsin on stream.

2. Distributors

   Our distributors resold 4.5 M pounds chlorinated biphenyls in 1968. It is impossible to pinpoint all uses. I estimate surface coatings is the biggest market.

3. Hot Melt Adhesives

   Du Pont at Parlin, New Jersey uses 460 M pounds (mainly Aroclor 1248) in a hot melt adhesive for bookbinding.

4. Sealants

   Aroclors are used in polysulfide sealants (automotive windscreen sealant and light construction e.g., window sealants). 1968 sales were 1.4 M pounds (Aroclor 1248/Aroclor 1254). Our largest customers are Products Research at Burbank, California and Gloucester City, Pennsylvania (680 M pounds) and Sonneborn in New Jersey (225 M pounds).

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5. Adhesives

Rubber adhesives, etc. accounted for 0.8 M pounds in 1968 of which 400 M pounds went to 3-M.

6. Coatings

In 1968, we sold 1.3 M pounds on a direct basis to this market. Our biggest direct customers in this market is Sherwin-Williams (Cleveland) at 140 M pounds and Koppers (Pittsburgh/Newark) at 250 M pounds.

7. Miscellaneous

Approximately 0.7 M pounds chlorinated biphenyls are used in miscellaneous applications as fire retardant additives, wax compounds, etc.

1968 sales of chlorinated biphenyls were:

NCR	:	6.0 M pounds
Distributors	:	4.5
Eight Major Customers	:	2.5
All Others	:	2.2
		15.2 M pounds

By market, 1968 sales were:

NCR	:	6.0 M pounds
Distributors	:	4.5
Sealants	:	1.4
Coatings	:	1.3
Adhesives	:	0.8
Hot Melt Adhesives	:	0.5
Miscellaneous	:	0.7
		15.2 M pounds

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I have tried to put together where our sales went on a geographic basis. These are approximate figures since distributor sales were recorded by the state in which the local distributor terminal is located.

Alabama	5	M Pounds
Alaska	-	
Arizona	-	
Arkansas	-	
California - North	48	
California - South	500	
Colorado	-	
Connecticut		See N. J.
Delaware (Includes Maryland)	155	
Florida)	110	
Georgia)		
Hawaii	-	
Idaho	-	
Illinois (Includes Wisconsin)	2,512	
Indiana	51	
Iowa	-	
Kansas	132	
Kentucky	87	
Louisiana		See Texas
Maine	-	
Maryland		See Delaware
Massachusetts	236	
Michigan	837	
Minnesota	76	
Mississippi	-	
Missouri	219	
Montana	-	
Nebraska	-	
Nevada	-	
New Hampshire	-	
New Jersey (Includes N.Y./ Conn.)	2,326	
New Mexico	-	
New York		See N. J.
North Carolina	73	
North Dakota	-	
Ohio	5,487	
Oklahoma	28	

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Oregon (Includes Washington	95	
Pennsylvania	916	
Rhode Island	-	
South Carolina	-	
South Dakota	-	
Tennessee	4	
Texas (Includes Louisiana)	302	
Utah	-	
Vermont	-	
Virginia	-	
Washington		See Oregon
West Virginia	54	
Wisconsin		See Illinois
Wyoming	-	

As you can see, the major areas where plasticizer chlorinated biphenyls are sold are:

Ohio	5,487 M Pounds
Illinois/Wisconsin	2,512
New York/New Jersey	2,326
Pennsylvania	916
Michigan	837
% of Sales	80

We sold 48 M pounds of chlorinated biphenyl plasticizers in Northern California (mainly SFO Bay area) in 1968. If we assume they all found their way into the sea, I have tried to calculate a possible concentration.

At 1 ppm, this would be equivalent to having all this Aroclor in an area 50 miles x 200 yards out from the shore with an average depth of 5 feet.

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I estimate that the coastline of the water within the confines of the Golden Gate Bridge is 150-200 miles. One would expect tides to reduce the level substantially below 1 ppm and, furthermore, the 48 M pounds were sold over the full year.

Cumming Paton

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