MONSANTO COMPANY

ORGANIC CHEMICALS DIVISION - RESEARCH DEPARTMENT

158921

SUBJECT: AROCLOR DISTILLATION

JOB NO.: 1754005

PREPARED BY (SIGNATURE): J. Bernhardt

DATE: 4-28-71

Purpose - The purpose is to simulate monochlorobiphenyl fractionation at WGK using semicontinuous feed through the forefraction and using feed with lower chlorination level (nominal 10% chlorine) (7.1 wt% Cl_2 by gravity)

Pot charge - 1076 g Aroclor 1110 + 4 g. CaO

Total feed - 2790 g.

TIME	1 HEAD	2-8 POT	4-10 COND.	5 LOWER COL. WALL	6 MIDDLE COL. WALL	9-3 UPPER COL. WALL	11 Feed	12 Pump	P	Res Real.	Dist. WT	REMARKS
8:45	191	108	31	247	258	239	72	80	436	1960	-	POT melted; Vac. on
9:30	193	241	30	244	252	236	73	82	436	1960	-	REFLUXING
9:48	236	242	30	243	251	235	73	78	436	1960	-	START FWD; R/D = 4/1
9:57	236	242	31	242	254	232	73	82	436	1830	14	End cut #1
12:Noon	236	244	air on 72	240	248	231	73	86	436	1520	-	RAISE POT V. 85→87 V.
1:41	236	244	87	240	248	230	73	84	436	1400	408	End Cut #2
2:50	236	247	119	243	248	238	73	86	436	980	424	End Cut #3
4:50	236+	250	130	247	252+	250	75	88	436	570	458	End Cut #4; Shut down
					4-29-71							
8:50	186	25	63	246	250	242	78	90	436	1310	-	START up; feed added
9:47	238	250	63	245	250	241	76	86	436	1310	-	Start Fwd; Feed on R/D
12 Noon	236	253	110	246	250	237	76	86	436	820	449	End Cut #5
2:19	237	257	106	244+	249	235	75	86	436	420	451	End Cut #6
3:19	238	257+	103	245+	250	236	77	85	436	200	184	End Cut #7
3:37	238+	258	108	247	251	237+	77	87	436	145	60	End cut #8
3:54	239	258	107	248	252	238	76	86	436	~70	59	End cut #9
4:10	239	258	108	248	252	238	75	85	436	0	57	End cut #10; Feed all in
4:22	239+	259+	118	248	252+	238+	75	86	436	0	44	End cut #11
4:35	240+	261	111	248	252+	238+	76	86	436	0	48	End Cut #12
4:92	241+	261+	108	247+	252+	238+	75	88	436	0	22	End cut #13; R/D → 8/1
5:10	238+	263	111	248	253	238+	75	86	436	0	56	End Cut #14
5:31	240+	265	109	248+	253+	239	75	86	436	0	44	End Cut #15
5:52	247	266+	103	248+	253+	239	76	85	436	0	58	End Cut #16
6:30	251	268	101	249+	254	240	76	85	436	0	55	End Cut #17
9:24	253+	269+	101	250+	255+	241	76	86	436	0	69	End cut #18; Shut Down

READ AN

DSW 297506

DATE

STLCOPCB4067417

MONSANTO COMPANY

ORGANIC CHEMICALS DIVISION - RESEARCH DEPARTMENT

158922

SUBJECT

Aroclor Dist. Cont'

JOB NO.	PREPARED BY (SIGNATURE)	DATE
1754005	J. Reinhardt	4-30-71

	1	2-8	4-10	5	6	9-13	11	12	P	Rds	Dist Cut	Rem
10:24	189	25	64	245	247	240	78	88	436	0	–	START UP Again
11:22	255+	290	62	244	246	239	96	86	436	0	–	START Fwd 8/1 = R/O
11:49	255+	271+	96	246	249+	236	75	86	436	0	58	End cut #19
12:53	256+	275	94	246	250	236	55	88	435	0	125	End cut #20
1:25	258	278	95	248	252	237	74	92	435	0	59	End cut #21
2:03	264+	281	93	249+	253+	238+	74	90	435	0	77	End cut #22
2:42	269+	283+	90	250	255	239+	74	90	435	0	58	End Cut #23
3:25	271+	287+	90	251+	256	241	74	90	435	0	68	End Cut #24
4:50	272	300	95+	254	258+	244	74	90	435	0	127	End Cut #25; Shut down

Ethiron tube was 1242. A total of 13.3 g was used.

259 gm Residue
34 gm Column Holdup
29 gm left in pump and fed lines

Crystallizing point of cuts	
cut #	X pt (°C)
22	13 ±
23	32
24	41
25	55

A composite of cuts 14 through 25, inclusive was made up. Its analysis by GLC was:

18.8 % biphenyl
52.6 % o-chlorobiphenyl
4.8 % m- " "
23.1 % p- " "
0.7 % dichlorobiphenyl

The crystallizing point of this composite was 12–13 °C.

Flash point of composite was 280 °F. (open cup)

DSW 297507

READ AND UNDERSTOOD BY

DATE

STLCOPCB4067418