

I. ROUTINE ANALYSES

A. In-Process

B. Finished Product

C. Environmental and Personal Monitoring Samples

Total 995

II. SPECIAL TESTING

A. Resin Plant

1. Raw Materials

a. DHW-80

DHW-80 shipments from Henkel were exclusively manufactured from Darling oleic acid throughout the report period. Oleic acid manufactured by Gross and by Darling were evaluated via gas chromatography for impurity levels. It was found that the Darling material contained a considerably lower level of impurities when compared with Gross oleic acid. The table below lists a summary of the integrated levels:

<u>Elution Time, sec</u>	<u>Gross, %</u>	<u>Darling, %</u>
0 - 43	0.20	0.017
868	29.5	29.2
875 - 981	24.1	ND
1061	46.2	70.8
1325	0.008	ND
1512	ND	0.006

A sample of Givaudan 9-A - the inhibitor used by Gross - is on hand and a bottle polymerization run will be set up to study the effect of this inhibitor on bottle kinetics. This will be accomplished by comparing the reaction rates of an unspiked Darling DHW with a Givaudan 9-A-spiked Darling DHW.

A sample of uninhibited Gross DHW-80 is on hand in Burlington and will be run with the next scheduled bottles to be run on a regular preshipment sample.

B. In-Process

1. Set-up in Reactor #10

A batch of 315 formulation resin run in this homopolymer reactor set up on 2/6/75. Spot-check for gelatin in the reactor liquor showed positive. Quantification via gravimetric determination showed a level of 0.11%.

As a result of a meeting held on 2/7/75, the Burlington Analytical Group was assigned the task to evaluate incremental addition of VAcM-VCM-TCE versus "pre-mix" addition of the above monomers in a bottle polymerization, the aim of which was to characterize some of the variables existing when copolymer batches are run in the Homopolymer Plant. Both bottle runs showed indications of set-up, e.g., bb's, large agglomerates and coarse resin particles in the bottles prepared with incremental addition. Bottles charged via "pre-mix" showed normal resin particles with no indication of any agglomeration.

It should be noted that the bottles run at Polymer Research in Piscataway showed results contrary to our findings. A detailed report will issue.

2. Residual VCM

Residual VCM analyses were performed on slurry samples as well as dried resin on a routine basis and in support of Process Engineering projects other than the current stripping program.

C. Environmental Testing

1. Material Balance

Air and water samples were analyzed in reevaluation of this Process Engineering program.

2. Fixed Monitoring System

All seven instruments started last month ran satisfactorily throughout the report period. In addition, L/A-1 and C-1 instruments were put on stream during the month of February. A recorder malfunction in the B/V-1 unit has prevented this start-up to date.

A program is underway to retrieve data from the recorder charts which will enable us to establish daily average area exposure values, percent excursion levels and with the aid of a computer program, TWA's by job classification.

D. Miscellaneous

1. Revised Test Methods

Revised test methods for OVA sampling and charcoal tube sampling were reissued. A method covering routine work on the Bendix gas chromatographs was written and also issued.

2. Running Account of Analyses

<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
878	1014	1419	1194	1317	1076

Fred W. Kanzler
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FWK/jst

TABLE IV

BURLINGTON RESIN PLANTS' OPERATING PERSONNELTIME-WEIGHTED VCM EXPOSURESEmployee Classification

February, 1975

Suspension Area

1. Area Foreman	7.9
2. Homopolymer Reactor Operator/Charger	10.9
3. Homopolymer Reactor Operator/Dumper	21.5
4. Copolymer Reactor Operator/Charger	6.2
5. Copolymer Reactor Operator/Dumper	7.2
6. Dryer Operator	3.9
7. Bagger/Cleaner	3.9
8. Labor Pool/Bagger	1.3

Plastisol Area

9. Area Foreman	7.0
10. Shift Foreman	3.3
11. "A" Plant Tower Operator/Charger	12.4
12. "A" Plant Tower Operator/Dumper	12.5
13. "B" Plant Tower Operator/Charger	6.7
14. "B" Plant Tower Operator/Dumper	9.0
15. Laborer/Cleaner (Jet)	6.6
16. Laborer/Cleaner (Manual)	4.0
17. Bagger	3.5
18. Atomizer Dryer Operator	2.6
19. Additive Dryer Operator	3.2

Laboratory

20. Quality Control Laboratory Supervisor	8.1
21. Analytical Chemist	9.5
22. Colorist	11.5
23. Quality Control Technician/Day	14.5
24. Quality Control Technician/Shift	15.7

Warehouse and Miscellaneous

25. Warehouse Supervisor	.2
26. Warehouse Clerk	.3
27. Warehouse Receiving Clerk	1.4
28. Warehouseman - Outside	.1
29. Warehouseman - Inside	.2
30. Effluent Operator	.8
31. Boiler Operator	.1
32. Lead Operator/Boiler-Effluent	1.2
33. Utility Man - Outside	.5
34. Utility Man - Inside	2.9
35. Yard and Service Man - Outside	.1
36. Yard and Service Man - Inside	1.1

*Over 50 ppm TWA

TABLE II

BURLINGTON RESIN PLANTS VCM MONITORING SUMMARY

<u>Monitoring Point</u>	<u>OVA Reading, ppm</u>	
	<u>Maximum</u>	<u>Average</u>
<u>Copolymer Plant, Ground Floor</u>		
1. Copolymer Drag-Out, Outside	95	11.3
2. Copolymer Slurry Pumphouse	44	6.4
3. Blacktop, Outside Near DMW Tank	57	5.5
4. South-East Stairwell	70	8.9
*5. Recovery Area, Outside	32	7.9
6. Draining Recovery Receivers	Air	Air
7. Draining Master Mix Tanks	Air	Air
8. Draining Recovery Pumps	Air	Air
9. Recovery Compressor Area	120	18.8
10. Center Aisle	17	6.4
11. Reactors, Clean-Out Valve Open	12	7.5
12. Solution Make-Up Tank Area	22	5.0
13. Dry Chemical Weighing Area	22	5.0
14. Weigh Scale Area	22	5.0
<u>Copolymer Plant, Second Floor</u>		
15. Lavatory	38	7.9
16. Panel Board/Desktop Area	26	7.8
17. Center Aisle	26	6.9
18. Weigh Scale Area	26	5.9
19. Reactors, Opening 6" Access Hole	13	5.9
20. Reactors, Opening Manway	Air	Air
21. Reactors, Manual Cleaning	Air	Air
22. Chemical Hoist, Outside	26	2.6
23. Blend Tanks, Catwalk	120	15.4
24. Blend Tanks, Sampling for O ₂	Air	Air
25. Walkway to Homopolymer	44	9.1
<u>Homopolymer Plant, Second Floor</u>		
26. Panel Board/Desktop Area	41	13.9
27. Center Aisle	42	6.4
28. Opening Reactor Lenape Cover	38	7.7
29. Reactor Washout	Air	Air
30. Manual Reactor Cleaning	Air	Air
31. Sampling Blend Tanks for O ₂	Air	Air
32. B/T Catwalk	38	3.4
<u>Homopolyme Plant, Ground Floor</u>		
33. Slurry Pumphouse	48	6.0
34. Recovery Area, Outside	42	8.5
35. Recovery Compressor Area	42	14.3
36. Weigh Scale Area	32	6.7
37. Center Aisle	32	6.1
38. Reactors, Clean-Out Valve Open	32	10.4
39. North-West Stairwell	26	2.2

OVA Reading, ppm

<u>Monitoring Point</u>	<u>Maximum</u>	<u>Average</u>
<u>Dispersion Plant "A", Ground Floor</u>		
40. "A" Plant Drag-Out, Outside	26	5.4
41. North-East Stairwell	13	1.4
42. In-Line Mixer Area	32	13.5
43. Moyno Pump Area	32	20.3
44. Dryer Panel Board Area	38	17.8
45. Under Tower, Opening Hammer Blind	26	13.8
46. Under Tower, Water Cleaning	26	13.8
47. Under Tower, Manual Cleaning	26	13.8
<u>Dispersion Plant "A", Second Floor</u>		
48. North-East Stairwell	9	1.2
49. Stripper #1 Area	38	14.4
50. West Cake Bin Area	41	17.4
51. Latex Blend Tank Area	70	22.6
52. Homo System Area	32	18.6
<u>Dispersion Plant "A", Third Floor</u>		
53. Panel Board/Desk Area	42	14.9
54. Catwalk, Filter #1	Air	Air
55. Back of Filter #1	26	11.7
56. Back of Filter #2	26	11.7
57. Catwalk, Filters #2 and #3	Air	Air
58. Back of Filter #3	26	11.7
59. Batch Mix Tank, Back	120	23.3
60. Batch Mix Tank, Weigh Scale	120	23.3
61. Catalyst Charge Pot	120	23.3
62. Cake Breakers	170	38.5
63. Elevator	7	1.1
<u>Dispersion Plant "A", Penthouse</u>		
*64. Center Aisle	19	3.2
65. Opening Tower Manway	120	4.5
66. Water Cleaning Tower	-	-
67. Manual Cleaning Tower	-	-
68. North-East Stairwell	8	2.1
<u>Dispersion Plant "B", Penthouse</u>		
69. Center Aisle	44	9.5
70. Opening Tower Manway	120	13.8
71. Water Cleaning Tower	ND	ND
72. North-West Stairwell	8	1.9
<u>Dispersion Plant "B", Third Floor</u>		
73. North-West Stairwell	19	1.7
74. Back of Filter #6	32	7.9
75. Back of Filter #5	32	7.9
76. Catwalk, Filters #5 and #4	Air	Air
77. Back of Filter #4	32	7.9
78. Catwalk, Filter #6	Air	Air
79. Cake Breaker Area	22	10.4
80. Batch Mix Tank, Back	32	9.4

OVA Reading, ppm

Monitoring Point

	Maximum	Average
<u>Dispersion Plant "B", Third Floor (cont'd)</u>		
81. Batch Mix Tank, Weigh Scale	32	9.4
82. Catalyst Charge Pot	32	9.4
83. Panel Board/Desk Area	26	7.6
84. Latex Blend Tank - Tween 20 Funnel	30	15.3
85. South-Center Stairwell	13	5.2
<u>Dispersion Plant "B", Second Floor</u>		
86. Latex Blend Tank #6	Air	Air
87. Stripper Area	32	13.7
88. Wet Cake Bin Area	32	14.4
89. Homo System Area	32	10.9
90. Lavatory	7	2.3
<u>Dispersion Plant "B", Ground Floor</u>		
91. North-West Stairwell	13	2.5
92. "B" Plant Drag-Out, Outside	6	.9
93. Dryer Panel Board Area	15	5.9
94. In-Line Mixer Area	29	7.9
95. Moyno Pump Area	32	10.2
96. Vacuum Pump Area	32	11.6
97. Under Tower, Opening Hammer Blind	-	-
98. Under Tower, Water Cleaning	-	-
99. Under Tower, Manual Cleaning	-	-
<u>Tank Farm</u>		
100. Unloading Station, Outside	8	.6
101. Tank Car, Sampling	Air	Air
102. Tank Car, Connecting Lines	Air	Air
103. Storage Tank Level Check	Air	Air
104. Compressor House #1	13	1.4
105. Compressor House #2	13	1.7
106. Refrigeration Building	17	1.3
<u>Classification Building</u>		
107. Atomizer Room	1	.5
108. Plastisol Bagger	6	4.0
109. Syntrons	4	2.4
110. Merchan Feeder Area	3	2.0
<u>Suspension Dryer Building</u>		
111. Dryer Panel Board	7	3.4
112. Operator's Desk	13	6.4
113. Dryer Area	6	1.6
114. Copolymer Bagging Station	3	1.2
115. 10NM and 40NM Bagging Station	13	4.8
116. Cleaning Copolymer Dryer	-	-
117. Cleaning 40NM Dryer	-	-
118. Cleaning 10NM Dryer	-	-
119. Centrifuge Deck	3	1.3
120. 40NM and 10NM Line Magnets	3	2.0

OVA Reading, ppm

<u>Monitoring Points</u>	<u>Maximum</u>	<u>Average</u>
121. 10MM Sifter	6	1.6
122. 40MM Sifter	3	1.6
123. 10MM and 40MM Line Palletizing	3	1.4
124. Copolymer Palletizing	1	2.4
125. Dispersion Palletizing	4	2.8
126. Lunch Room-East End	1	0.2
127. Lunch Room-West End	ND	ND
128. Maintenance Shop-North End	1	0.2
129. Maintenance Shop-South End	6	1.4
130. Maintenance Shop-Welding Well	4	.8
<u>Production and Maintenance Offices</u>		
131. Maintenance General Foreman's Office	1	0.4
132. Maintenance Foreman's Office	1	0.4
133. Engineer's Office	1	0.4
134. Safety Supervisor's Office	1	0.5
135. Production Foreman's Office	1	0.4
<u>Warehouse</u>		
136. West Aisle	ND	ND
137. West-Center Aisle	ND	ND
138. Checker's Desk Area	1	0.2
139. Shipping Office	1	0.4
140. Receiving Office	1	0.2
141. East-Center Aisle	1	0.2
142. East Aisle	1	0.2
143. Bass Office	3	0.8
<u>Copolymer Bulk Station</u>		
144. Sifter Desk	3	0.6
145. Second Desk	ND	ND
146. Tailing Hopper, Outside	ND	ND
<u>Loading Area</u>		
147. Homopolymer Transfer House	1	0.5
148. Bulk Truck	ND	ND
149. Hopper Car	ND	ND
150. Initiator Freezer	3	0.8
151. Initiator Weigh House	ND	ND
<u>Effluent Plant</u>		
152. Ground Floor-South	3	0.6
153. Ground Floor-North	1	0.2
154. Laboratory	ND	ND
155. Second Floor-North	1	0.2
156. Second Floor-South	3	0.8
157. Catwalk, Outside	3	2.0
158. Boiler House-North	ND	ND
159. Boiler House-South	ND	ND

OVA Reading, ppm

Monitoring Point

	<u>Maximum</u>	<u>Average</u>
<u>ARDO Building</u>		
160. Operator's Desk Area	17	3.6
161. Panel Board	17	3.4
162. Latex Blend Tank	17	4.0
<u>Quality Control Laboratory</u>		
163. Hood Area	32	21.4
164. Desk Area	27	18.8
165. Constant Temperature Room	29	10.0
166. Analytical Laboratory	18	10.0
167. Vent Area	17	13.8
168. Reception Area	4	1.6
169. Office Hallway	4	1.8
170. Outside Plant-Upwind	ND	ND
171. Outside Plant-Downwind	ND	ND