PROGRESS REPORT

[ ] R 28 (rev. 11/53)

ORGANIC CHEMICALS DIVISION

St. Louis Research Department

Reported from Anniston

Job No. 117-2681
Report No. (3)

Reported By: A. M. Ellenburg

Date: March, 1954

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At St. Louis	At St. Louis	At WGK Plant	35- G. R. Buchanan - St. Louis
		25-29-	36-
1 Library	13 R.O. Nellums	30 Development	37-
1a Library	14 O.J. Weinkauff		38-
2 D.M. Campbell	15 J.R. Wilson	At J.F.Q. Plant	39-
3 H.W. Faust	16 F.B. Zienty		40-
4 L.L. Fellinger	17 O. DeGarmo	31-	41-
5 H.R. Gamrath	18 J F Q Development		42-
6 R.M.Hitchens	19 J.R. Durland	At Nitro	43-
7 C.A. Hochwalt	20 R. M. Morris	32-W.P. Metzner	44-
8 R.E. Howard	21 J. H. Lum		45-
9 D. S. Weddell	22 P.G. Marsh	At Dayton	46-
10 R.H. Munch	23 J. L. Hammer	33 L. Lederman	47-
11 F.M. Murdock	24 B.E. Thomas	34 N.N.T. Samaras	48-
12 H.K. Nason			49-

Title: Assistance to Sales and Development Departments on Aroclor and Biphenyl.

Problem: To analyze samples of Aroclor 1248 that had been tested in an Aroclor heater at the International Boiler Works Company at East Stroudsburg, Pennsylvania.

Summary:

A series of samples was received from the International Boiler Works Company for analysis. These samples were taken at weekly intervals over a four week period while the Aroclor 1248 was operating at 650°F. under 30 psig. nitrogen pressure.

There was little change in the acidity of the Aroclor which indicates that most of the HCl formed was volatilized out of the Aroclor. The specific gravity and the viscosity show the progress of deterioration of the Aroclor 1248.

AROCLOR 1248 HEATED AT 650°F.

Sample	Hours Heated	Sp. Gr. at 65/15.5	Saybolt Seconds Viscosity at 130°F.
Starting Aroclor	0	1.406	76.3
1	168	1.408	80.8
2	336	1.408	88.5
3	500	1.409	97.8
4	668	1.410	110.4

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The increase in viscosity definitely shows polymerization in the Aroclor and means that the Aroclor will need to be replaced after several months operation at 650°F.

At 600°F., previous tests had shown only a 2 second increase in viscosity after 4 weeks heating. Thus 600°F. is the maximum safe temperature for heating the Aroclor 1248 without decomposition. At 650°F. caution must be taken to remove the Aroclor at intervals before it decomposes to a tar.

A. M. Ellenburg

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