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PROGRESS REPORT

ORGANIC CHEMICALS DIVISION

St. Louis Research Department

Job No. 117-2681
Report No. (7)

Reported By: A. M. Ellenburg

Date: July 30, 1954

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At St. Louis	At St. Louis	At WGK Plant	
		25-29-	35- G. R. Buchanan-KXOK-2
1 Library	13 R.O. Nellums	30 Development	36-
1a Library	14 O.J. Weinkauff		37-
2 D.M. Campbell	15 J.R. Wilson	At J.F.Q. Plant	38-
3 H.W. Faust	16 F.B. Zienty		39- FILE NO. 246.601.2
4 L.L. Fellinger	17 O. DeGarmo	31-	40- TECHNICAL SERVICES
5 H.R. Gamrath	18 J F Q Development		41-
6 R.M.Hitchens	19 J.R. Durland	At Nitro	42- CHEMICAL ENGINEERING DEPT.
7 C.A. Hochwalt	20 R. M. Morris	32-W.P. Metzner	43- PERMANENT ☐
8 R.E. Howard	21 J. H. Lum		44-
9 D. S. Weddell	22 P.G. Marsh	At Dayton	45- SECRET AFTER 6 MONTHS.
10 R.H. Munch	23 J. L. Hammer	33 L. Lederman	46- SEE ALSO
11 F.M. Murdock	24 B.E. Thomas	34 N.N.T. Samaras	47-
12 H.K. Nason			48-
			49-

Title: ASSISTANCE TO SALES AND DEVELOPMENT DEPARTMENTS ON AROCLOR AND BIPHENYL DERIVATIVES.

Problem:

To answer requests of Sales by supplying data and testing samples on specific inquiries.

Summary:

1. Vapor pressure of Pyranol 1481 was calculated over the temperature range of 0-50°C. at the request of Electrical Utilities Co., LaSalle, Illinois.

2. General Electric Company desired a specification on Aroclor 1248 to include in their specification schedule. Analyses of all properties on three lots of Aroclor 1248 were used to recommend a set of tentative specifications to General Electric.

3. Samples of Aroclor 1254 were received from Pennsylvania Salt Co. for check analyses. The Aroclor was an ingredient in a mixture that exploded and it was desirable to be sure it was good Aroclor. The analyses of the returned Aroclor checked our previous analyses on this material.

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4. Line Material Co., South Milwaukee, Wisconsin have traced some high power factors in some of their capacitors to a rosin core solder. A request was made for us to check the effect of various solder flux on Pyranol 1481. Tests showed that rosin core solder does contaminate the Pyranol to a high degree.

Details:

1. Vapor pressure data on Pyranol 1481, which is a mixture of 75% Aroclor 1254 and 25% trichlorobenzene, has not been determined. Therefore, in order to provide the information desired by Electrical Utilities, the partial pressures of the two components were calculated from their vapor pressures. The sum then equals the total pressure.

   Due to the extremely low vapor pressure of Aroclor 1254 in the temperature range of 0-50°C., the partial pressure of trichlorobenzene was used as the total pressure.

2. General Electric Co. is revising their specification sheets on Aroclors and would like to include the same properties on Aroclor 1248 as they have on Aroclors 1242 and 1254 for capacitor use. At present Aroclor 1248 is not used in dielectric applications.

   Using the analyses of three recent batches of Aroclor 1248 and previous history on the Aroclor, a set of specifications were submitted to G.E. for their revised specification sheet.

   Similar data on Aroclor 1232 is to be sent when it can be obtained.

3. A recent explosion at the Wyandotte, Michigan plant of Penn Salt Manufacturing Co. involved a mixture of 4% Aroclor 1254 with calcium hypochlorite (70% active chlorine). About a year ago a batch of this same material was made without any trouble.

   Samples of the Aroclor used in the mixture that exploded were returned to us for analyses. Complete analyses of the Aroclor showed it to be the same material as our original lot sample of the material.

   Our conclusions is that the Aroclor 1254, Lot M-117, used by Penn Salt is our standard grade of Aroclor.

A. M. Ellenburg 8-2-54

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