

Dr. N.H.T. Samaras
Mr. R.D. Dunlop
Dr. D. Telfair
Mr. F.T. Lense -
Anniston

11/9/45

Anniston

Dr. R. L. Jenkins

LIQUID DIELECTRICS

Determination of dielectric constant and power factor of the benzene sample shipped by you was made after the cell constant and lead capacitance of our own cell was checked. On the basis of our cell constant being equal to 36.0 and lead capacitance equal to 3.4 (these constants evaluated according to the method explained in Dr. Telfair's letter to you dated September 17) the results on your benzene sample are as follows:

<u>Temperature</u>	<u>Frequency</u>	<u>Power Factor</u>	<u>Dielectric Const.</u>
23.0°C.	1000 cycles	<.001	2.27
"	5000 cycles	<.001	2.27
"	10000 cycles	<.001	2.26

Results on Aroclor 1254 are as follows:

<u>Temperature</u>	<u>Frequency</u>	<u>Power Factor</u>	<u>Dielectric Const.</u>
100°C ± 2°	1000 cycles	.0064	4.33
"	4000 "	.0022	4.33
"	8000 "	.0023	4.33
"	10000 "	.0027	4.33

Dielectric constant as stated on the bottle is 4.2 The disagreement is probably within the limits of experimental error.

R. Levresult

/pgs

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