xonel · cists MD, JM, EE Tucker

W. R. Richard - Research Center

November 4, 1970 FF

NOTES ON DIELECTRIC FLUIDS

P. G. Benignus - PBENI
R. H. Munch - S.2nd
J. R. Savage - JSAVA
Q. E. Thompson - QTHO
R.E.Keller/J.P.Mieure - S.2nd

F I L E

We have had various phone conversations and I wanted to put down something in writing.

1. G.E. (Al Pozefsky) wants to retain the U.L. label on MCS 1016 type material without raising a fuss, if possible. This means we will have to assure ourselves that the F.R. is "equivalent" to 1242. This may require juggling the chlorine content closer to 1242 and possibly recycle of the front-end cuts of MCS 1016.

   The second fractionation at MBC-Dayton for another lot of MCS 1016 might permit a slight adjustment in chlorine content if this is deemed necessary.

   G.E. wants biodegradation rate data on MCS 1016 compared with alkylbenzene. V. Saeger has been asked, but we have no response.

2. We will need a non-halogen capacitor fluid. This seems to mean a crystallizable aromatic sulfone (or perhaps a new purification method for a non-crystallizable sulfone) plus a solvent or diluent for the sulfone. Quent Thompson and Jim Wygant will need to put their heads together to either modify the sulfone or find a diluent for sulfones compatible with polypropylene. R. Munch is testing Aroclor/sulfone mixtures in capacitors to get some idea of how sulfones behave in capacitors. We have had initial failures with sulfone/Aroclor 1242 blends.

3. Jim Savage is helping with cost analysis of 2,2'dichlorodiphenyl ether via Wasson's chlorophenol + disulfonation routes. D. Miller tried dehydration of orthochlorophenol which really looked cheap but didn't work with the thoria catalyst. We agreed to make 40-50 gal. of 2,2'dichlorodiphenyl ether via nitrochlorobenzene route in P.P. (this year expenses). R. Munch to initiate.

4. R. Munch reported that Westinghouse wanted to look at trichlorodiphenyl ether as a replacement for Aroclor 1242. We agreed to supply a sample and said we could have diphenyl ether available commercially. Quent/Ralph: We need a tech. lab or pilot run on trichlorodiphenyl ether + restoration of trichlorodiphenyl ether on Saeger's biodegradation list.

MONS 202058

5. Jim Mieure's analysis of Aroclor chlorinated biphenyl showed chlorinated naphthalene, anthracene and possibly phenanthrene in the chlorinated product. We considered this a possible source of product instability (particularly the Japanese type power factor heat stability problem). Will Ralph Munch/Jim Mieure look at biphenyl samples for naphthalene and anthracene for those samples submitted for the dibenzofuran trace study.

6. This is mainly a chlorinated terphenyl problem, but J. Mieure reported 1-3 ppm chlorinated dibenzofuran in one sample of Aroclor 5442. None was present in chlorinated biphenyl series. T. Bell and V. Haupt (GET and [illegible]) have submitted biphenyl, terphenyl, HB-40 and 5060 and 5460 samples for analysis to J. Mieure. We will probably need a few more samples to pin where the oxygen is coming from. Most important, we need to take corrective steps to eliminate this material. Possibilities suggested so far are: keeping O out; eliminating ether formation in distillation; over Ca(OH); Porocel adsorptive treatment of end product.

W. R. Richard

/ia

Monsanto

FROM W. R. Richard - Research Center

DATE November 5, 1970 V. W. Saeger - S.2ndSt

SUBJECT BIODEGRADATION RATES
OF AROCLOR 1242, MCS 1016

TO E. M. Emery - S. 2nd St.

General Electric asked for biodegradation rate data on MCS 1016, Aroclor 1242 vs. soft alkylbenzene sulfonate. Will you please give me an order of magnitude estimate of rates. Thanks.

wr.

W. R. Richard

/is

MONS 202060