Monsanto

FROM (NAME & LOCATION) R. H. Munch - 1700 S. 2nd St. (1760) - Res-2

DATE : July 11, 1972

cc: J. E. Bryant - F1ED
W. R. Richard - T3A
C. Paton - B2SC

SUBJECT : WESTINGHOUSE SULFONE PATENT

REFERENCE :

TO : P. G. Benignus

GENERAL OFFICES - B2SA

Westinghouse was granted U.S. Patent 2,434,540 on January 13, 1948 covering tolyl xylyl and phenyl xylyl sulfone and mixtures of these with chlorinated biphenyl. As far as we are aware, they never made such capacitors for commercial sale. The report dated October 7, 1960 that Jim has sent you shows why. They had to reduce the stress from 770 volts/mil for Aroclor 1242 to 416 for the sulfone mixture to get comparable life. When we consider that the energy stored by a capacitor is proportional to the square of the voltage, this represents the difference between $(770)^2 = 59{,}000$ and $(416)^2 = 17{,}000$ giving less than one-third the energy storage capacity. When we consider that life is inversely proportional to the fifth power of the voltage, they would have gotton $\left(\frac{416}{770}\right)^5$ or about one-twentieth the life. These are both good reasons why the patent was never used. It has expired now of course.

MCS 1238 capacitors have demonstrated comparable life to Aroclor 1016 capacitors under identical test conditions. That is why we think we have something of commercial interest. No one has ever demonstrated that this could be done before with a relatively biodegradable non-PCB fluid.

R. H. Munch

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