FLUIDS

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Sales Information Bulletin No. 154

DATE: February 5, 1975

SUBJECT: MONSANTO'S NEW CAPACITOR DIELECTRICS

Attached is the paper presented by Dr. Ralph Munch at the IEEE Conference in New York, January 30, 1975.

This paper refers to the following fluids:

1. Aroclor 1016 - Our established chlorinated biphenyl capacitor dielectric. This is used as a baseline for comparison of other dielectrics.

2. MCS-1043 - Basically, a dichlorobiphenyl. This product is not currently available. It will be considerably more expensive to produce than 1016 and will not offer the same degree of fire resistance. It has been evaluated as a potential replacement for Aroclor 1016 if environmental developments permitted the use of lower chlorinated biphenyls but not Aroclor 1016 itself. It is not our intention to offer this product commercially at this time. It should not be promoted or offered to customers for evaluation.

3. MCS or Aroclor 1489 - This is a blend of Aroclor 1016 with a sulphone of high dielectric constant giving an overall dielectric constant some 12% higher than that of Aroclor 1016. The increased DK means that the capacitor manufacturer can produce a unit of a given capacitance using reduced quantities of aluminum foil and paper or plastic film. It is under test by a number of U.S. capacitor manufacturers. Its major area of application short term is likely to be in the medium voltage area of motor capacitors.

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4. MCS-1475 - is an ester type fluid blended with sulphone to give a dielectric constant equivalent to Aroclor 1016. While it has useful flash and fire point characteristics, it is NOT fire resistant. It suffers in common with other ester candidates such as DOP and DINP in having a lower hydrolysis stability. It is currently at field test stage in capacitors designed to fit equipment for export to Japan where PCB use is banned. This is a small percentage of the total market. This product has been developed as a potential product if environmental regulations ever exclude continued Aroclor usage. We emphasize that it is not a replacement for Aroclor. Its adoption would require compromise on fire resistance and stability, at least.

   Note - Properties of MCS-1475 are compared to those of other ester types. Note the designed DK of 1475 is significantly higher than DOP/DINP offering savings in other components and since DK is same as 1016 little or no redesign would be required in substitution for Aroclor 1016 if the need arose.

5. MCS-1238/MCS-1588 - Are blends of hydrocarbons/sulphones with DK equivalent to Aroclor 1016. These fluids do not have the potential hydrolysis stability problem inherent in the ester technology. They are not fire resistant. MCS-1588 is available in development quantities. MCS-1238 is available in research sample quantities. We have explored a very wide range of hydrocarbons to find a limited number which display suitable properties for capacitor use in conjunction with sulphones. We wanted to find more than one hydrocarbon to protect the potential user against uncertain availability such as plagued petrochemical based industries in 1974.

The product group should be informed about every inquiry for our development capacitor dielectrics.

We have discussed these products with our Aroclor customers in the U.S.A. and each domestic Aroclor customer should receive a copy of Dr. Munch's paper.

In 1975, we will initiate development programs outside the U. S. for our new fluids in each world area. The development plan will be sent to World Area Managers early February. This SIB is to familiarize you with information which customers will possibly receive through IEEE contacts. In order to develop further data in an orderly fashion, we must allocate technical support to each world area within the framework of the overall development plan.

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You should not promote these development products to all capacitor manufacturers in your area. Please clear introduction to any customer through your area manager and the product group.

David Wood

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