Monsanto INDUSTRIAL C IICALS CO.

file Aroclor Quality

FROM (NAME & LOCATION) R. H. Munch - T1B - General Offices, St. Louis

DATE November 9, 1972

SUBJECT G. E., PITTSFIELD, MASS.

REFERENCE

TO Mr. J. G. Bryant
#2 Kimbrough Court
Talley Farms, Delaware 19810

cc: C. Paton - B2SC
P. G. Benignus - B2SH
P. L. Slayton - N.Y. - 1650
N. T. Johnson/T. L. Gossage - B2S
J. R. Savage - B2SL
E. M. Potter - B2NK
B. M. McCutchan - WGK - 1740
W. R. Richard - T3A

We have completed our work on the samples related to the G. E. Pittsfield complaint on Aroclor 1254 shipped to them recently in ACFX 32454. The results are as follows:

1) The pellets removed from the contents of ACFX 32454 were shown to be isotactic polypropylene by infrared absorption spectroscopy. They are agglomerates of very small particles.

2) The plastic rings from an Alsop filter cartridge of the type used to filter the Aroclor 1254 into the tank car were also shown to be isotactic polypropylene by the same method.

3) When pieces of the plastic rings from the filter cartridge were placed in Aroclor 1254 at 100, 125 and 140°C for 48 hours, the fluid remained clear and there was no readily apparent change in the plastic on visual inspection. However, when the fluid was allowed to cool, that held at 100°C became very slightly turbid, that held at 125°C became quite milky and that at 140°C contained a considerable amount of finely divided solid.

4) A differential infrared spectrum using material from the tank car as the sample and a sample of Aroclor 1254 direct from the still as the reference showed no detectable difference between the two. It is estimated that this would have detected 0.02% of dissolved polypropylene.

5) When the two Aroclor 1254 samples were heated nearly to boiling in a test tube and a few drops of 98% sulfuric acid were added, both samples remained colorless. Traces of most foreign organic materials including polypropylene cause discoloration of the sample if they are present.

These results indicate that the "pellets" from the tank car probably were formed by solution of some of the polypropylene spacer ring material in the hot fluid as it passed through the filter or more likely some time while stagnant fluid remained in the filter. The filter is steam traced and could perhaps have reached temperatures in the 100 to 140°C range when there was no fluid flow. The pellets could result by agglomeration of the finely divided material which came out of solution on cooling during shipment.

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The differential infrared data and the sulfuric acid test both indicate that the amount of foreign material in the returned Aroclor 1254 is very small, so small that it could have no influence on performance of the Aroclor 1254 in a transformer askarel blend.

R. H. Munch

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