Monsanto

FROM (NAME & LOCATION) J. A. Gloeckner - WGK

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SUBJECT Aroclor 1242 - Thermal Chemical Chloride - (TCC) - Summary of Statistical Analyses

REFERENCE

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In late April of this year, TSD noted through cumsum charts that the TCC results were considerably higher than those of 1970. Further investigation revealed that the increase in level occurred in early October 1970. The author was requested to analyze the existing data to determine, if possible, the cause of the shift.

The following summarizes our efforts to date:

1) There was a definite, significant shift in the TCC results after early October 1970 (based on WGK laboratory results).

2) Laboratory rechecks of previously analyzed samples showed good agreement.

3) A designed experiment to measure analyst, sampling and other error sources was run. Results indicated a 2 sigma precision of $\pm$ 0.05 ppm. Sampling was not an error source.

4) Samples from the above test were sent to Anniston for analysis. Their results were significantly lower than the WGK results from the same bottle.

5) Comparison of results from the customer (G. E.) with the WGK result on the same lots showed that the customer and WGK agreed very well.

6) The TCC test itself was obtained from G. E. and is highly empirical. We consider that strict adherence to their procedures is necessary to obtain meaningful results.

7) Using only the G. E. results, the same process shift as seen in 1) was noted.

8) TSD was unable to correlate the increase in results with any of the measured process variables.

9) Efforts to resolve the laboratory differences have been made. The differences in the written procedures between WGK and Anniston do not result in major differences in results.

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In final summary I think we can say that there was a process change (source unknown) that caused the TCC increase. Also, WGK and G.E. results agree within the test precision. Anniston results are significantly lower. Since Anniston is no longer in the liquid Aroclor business, it would serve no useful purpose to further investigate the reasons for the discrepancy. WGK will continue to compare results with G.E. and will take action if a trend of significant differences occurs.

Jim Gloeckner
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