

Monsanto

FROM (NAME & LOCATION)

E. S. Tucker - R&D Laboratories - South Second Street - St. Louis

DATE

December 12, 1969

cc-

R. A. Baxter - Ruabon

H. A. Vodden - Ruabon

R. E. Keller - S. 2nd

W. R. Richard - GO

D. Danna - GO

SUBJECT

REFERENCE

TO R. A. Lidgett - Ruabon

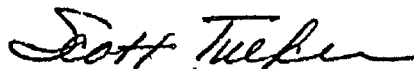
I agree with your feeling that there is definitely a need for higher resolution columns for PCB analysis, especially when dealing with weathered PCB samples in which the original isomer distribution has been altered.

I have recently investigated the feasibility of using support coated open tubular columns with electron capture detection to analyze for low levels of PCB's (5×10^{-9} g injected). I obtained fairly good resolution (see attached chromatograms of 1242 and 1248) but ran into several correctable problems. First, the sample injection volume I used was much too large and it adversely affected both the column life and its resolution. It appears that the on column injection of 5 uls of hexane washed the liquid phase off the column seriously shortening the life of the column. The large solvent volume also seemed to cause some peak broadening.

These effects can probably be overcome by using more concentrated solutions in conjunction with a sample inlet splitter, i.e., 1 ul injection with ~20/1 split. This would, of course, reduce the sensitivity by a factor 20 - 100X.

Currently, I am awaiting the arrival of 100' of 0.02" XE-60 S.C.O.T. column which I have ordered. When the column is delivered and I've had time to try the above suggestions, I will let you know.

I have not observed any decomposition of Aroclor during gas chromatography.



E. S. Tucker

db
Attach.

DSW 152690