Monsanto INDUSTRIAL CHEMICALS CO.

FROM D. R. Cova - T3C

DATE April 23, 1974

SUBJECT SPECIFICATIONS FOR MONOCHLOROBIPHENYL

REFERENCE

cc W. R. Richard - T3A
J. R. Savage - B2SL
T. L. Gossage - B2SL
H. S. Bergen - B2SL
W. B. Papageorge - B1ND

TO C. Paton
B2SC

On 3/25 I wrote a memo to Dr. Richard suggesting a change in monochlorobiphenyl specifications, specifically splitting out 2,2'-dichlorobiphenyl (2,2'-DCBP) as a separate component (a copy of the memo is attached). On 4/16 you wrote Dr. Richard raising some questions concerning the PCB content of monochlorobiphenyl and the effect of process changes on PCB content (a copy of your memo is also attached). I would like to answer these questions.

Firstly, Monsanto's analyses of laboratory samples of monochlorobiphenyl showing non-detectable levels of PCB's other than 2,2'-DCBP (E. Scott Tucker's memo to Dr. Richard 12/5/73) were carried out essentially as assays of the product. The limit of detectability was probably on the order of 200 ppm for any particular component. On top of this the PCB's are comprised of more than one component. Because of this, these analytical results should not be taken to mean that no PCB's other than 2,2'-DCBP are present.

Secondly, you state that Dow have found 20-135 ppm PCB's other than 2,2-DCB in our samples. In my memo I stated that our laboratory samples contained 440-500 ppm of PCB's. This is incorrect. What I should have said was that our samples contained 440-500 ppm of PCB's and unknowns. Over half of this concentration is comprised of unknowns (some of which undoubtedly are PCB's). Attached to this memo is Table V from a progress report. It gives analyses (by J. P. Mieure) of three samples of monochlorobiphenyl. The first two were laboratory samples which had been sent to Dow (MCS 1546 and MCS 1547). The last sample came from our process development work. We believe this last sample to be most representative of what the plant will produce. In Table V the total levels of identified PCB's range from 51 to 202 ppm. These levels are not far from those found by Dow. At any rate, in arriving at a PCB specification we assumed all the unknowns to be PCB's and then multiplied by two to give us a safety factor. Thus, we arrived at 0.1% max. of PCB's other than 2,2'-DCBP.

Finally, we have made no process changes that would affect the concentration of PCB's in the product. Nor do we contemplate making any.

Our purpose in suggesting the change in specifications was to make the product more agreeable to outside agencies. As the specification now stands the product would contain up to 1.0% (or 1.3% in the case of high-para monochlorobiphenyl) of dichlors and higher. This does not pass on the information that, excluding 2,2'-DCBP, the product will contain only 0.1% maximum of dichlors and higher. From the point of view of outside agencies, I would think that this latter specification would be preferable and would make our product more palatable.

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