

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
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January 18, 1982

Mr. Conrad Harwell
Works Laboratory and Quality Control Mgr.
Diamond Shamrock Agricultural Chemicals
P. O. Box H
Tuscaloosa, Alabama 35404

bcc: E. A. Fay - 1740
R. F. Ivory/F. Hileman - 1250
H. P. Horner/E. Layton - 1740
J. J. Narciso/G. D. Stevens - 1070
Robert Miller - 1010
R. C. Richardson - B2SG
D. Wente - N2E
Don Witte - 1180

Dear Mr. Harwell:

This records my understanding of our discussions regarding specifications for "96%" 2,4-dichlorophenol to be used in 2,4-D herbicide manufacture.

The material we intend to supply will be refined by distillation from direct-chlorinated phenol. Based on very limited experience in our recently rehabilitated plant, we can guarantee a 95.5% minimum 2,4-dichlorophenol assay, as determined by a gas chromatographic analysis. (A copy of the present analytical method is enclosed.) You stated your preference for an internal standard assay method, which the present method is not. I have this under discussion with the plant, and will keep you advised.

Based on 1980-81 experience with "93%" 2,4-dichlorophenol production, we can provisionally guarantee that the maximum concentration of any chlorodibenzo-dioxin compound will be 0.01 ppm, in concordance with Canadian Government requirements. For 1982 we will analyze production by a GC/MS method, and mail a certificate of analysis for every shipment. A copy of the GC/MS method employed by Monsanto Research Corporation, who will carry out the analyses, is enclosed.

A copy of Table 1 from my 12/13/81 letter to you, which details our recent "dioxin" history, is enclosed with Mr. Bell's copy; for his information.

As you well know the GC/MS "dioxin" analysis is very expensive; I hope that our 1982 experience will allow development of a more economical quality assurance test. In particular, the data on 93% DCP suggests that hexachlorodibenzo-dioxins are the members of this family found most frequently in Monsanto's dichlorophenol, and that their presence is indicative of the kind of process upset responsible for high concentrations found in the most recent production.

We have an indication that HPLC technology may give an attractive method for this kind of analysis.

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Mr. Conrad Harwell
Diamond Shamrock Agricultural Chemicals

January 14, 1982

Note that "96%" DCP should prove to have chlorodibenzofuran concentrations much reduced (100x) from those observed in "93%". We will accumulate data on this byproduct during the course of 1982, and share results with you if you are interested. For your information, I recently discussed this subject with W. P. Cochrane of Agriculture Canada; he is aware of the presence of these compounds and chlorodiphenyl ethers in 2,4-D. They cause him no concern.

Sincerely,



James D. Wilson
Manager
Environmental and
Product Acceptability
Detergents and Phosphates Division

JDW/bh
encls.

cc: Mr. Tom L. Bell
Raw Material Buyer
International Technology Unit
Diamond Shamrock Corporation
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