

Monsanto

FROM NAME & LOCATION:

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SUBJECT Analyses of Chlorophenols for
Chlorodibenzodioxins

REFERENCE

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We have concluded it would be most expeditious for the Environmental Analytical Sciences Center in Dayton to analyze the 40 process samples from the chlorophenols plant. Accordingly, we have asked MIC-Environmental Sciences to brief Dayton Lab people on procedures and transmit the samples; this they have agreed to do. The two priority samples (Santophen[®]-1 and PCP from a recent lot) will be analyzed by MIC-ES this week.

The EASC has capabilities similar to those of MIC-ES, and a relatively light workload at present. They will analyze the 40 samples for mono-, di-, tri-, and tetrachlorodibenzodioxins and -dibenzofurans. First results are expected by March 31st, with completion due by the end of April. (I have asked that we be notified as soon as possible if this target date cannot be met.) Plans for further work, if any, will depend on what we learn from these experiments.

It should be possible to operate the chlorophenols plant without getting any chlorodibenzodioxins into the product. Production of PCP and 2,4-DCP (and even 2,4,6-TCP) differs from production of 2,4,5-TCP in that hot, very alkaline conditions are not required. These promote condensation of chlorophenols to dibenzodioxins, a reaction which is otherwise extremely slow. As I understand the process, basic conditions exist only during distillation, and then because caustic is added to the pot to retard corrosion. I suspect that dioxins form when excess caustic is added, and that rearrangements occur then as well. If so, they can be avoided. We will work with Krummrich PTS to define operating parameters which avoid dioxin formation, if so desired.


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