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GENERAL CHEMICALS CALL REPORT NO. 69-2

WYANDOTTE CHEMICAL COMPANY
WYANDOTTE, MICHIGAN

Date of Call: February 26, 1969

For Wyandotte: Dr. Lowell Netherton, V. P. Research
Mr. Harry Deveraux, Purchasing Department
Dr. Len Lensted, Director Organic Research
Mr. Jim McClellen, Project Manager (part time)

For Monsanto: D. F. Beason
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Purpose of Call: To review Wyandotte's Biphenyl inquiry.

Summary:

Wyandotte has an active program concerning licensed technology from Ugine Kuhlmann involving products derived from decachloro biphenyl. Their program is to come together about mid-year and construction phases to initiate at that time.

Wyandotte has a license from Kuhlmann to vapor-phase chlorinate biphenyl to the decachloro biphenyl product. Apparently, their major resin material product is the reaction product of the decachloro biphenyl and ethanolamine. Usage for the finished resin would be a variety of applications and is not limited to urethane, but extends into polyesters and epoxies.

Wyandotte has a technical relationship with Ugine Kuhlmann. They have a joint venture in Belgium (?) which are reported to be profitable. They have a technical exchange of information with Kuhlmann and each has the rights to the other's technology, or at least the first right of refusal.

Wyandotte intends to initiate market introduction of their product on a development basis in about six weeks. Interim product requirements will be imported.

Details:

Most of our conversations were held over lunch and initially centered around possible purchases of biphenyl by Wyandotte. As we begin to probe for the use, we lead them with questions which indicated our awareness of their complete program through literature and other industry context. They admitted their usage involved preparation of compounds covered by Kuhlmann technology, and informed us of their licensing of the polymer intermediates, the finished resin product covered and also the Kuhlmann technology to prepare decachloro biphenyl.

Our posture to Wyandotte was that we would like to consider manufacture of the difunctional resin material for their and other domestic licensees of Kuhlman's use. They agreed that divisor of scale could be achieved by one manufacturer supplying material to various end users. Lowell Netherton was rather reluctant to accept purchase of the resin material intermediate from Monsanto and indicated that certainly the preparation of the decachloro biphenyl might be more beneficially handled by a single producer for all users, but that they would have to be convinced on an economic evaluation that the various di-functional resin materials (possibly indicating more than one intermediate may be involved) might be attractively purchased.

Wyandotte's planning is that they would like to make initial development introduction for customer trials with their product in about six weeks. Their end use involves a variety of chemical types, such as polyesters and epoxy products, and is not limited to urethanes. Wyandotte was aware of Monsanto's previous activities in chlorinated biphenyl difunctional derivatives. Wyandotte has appointed a Project Manager to cut across various disciplines and be responsible for the project involving the licensed Kuhlmann technology. This man is Jim McClellen. For some reason, we missed McClellen at lunch, but had a chance to chat with him briefly after lunch. He was somewhat surprised at our diagnosis of their project, but indicated certainly it might be desirable to look at a supplier of the raw material if one were available. He asked for any information we might have on the validity of the patents, indicating suspicion that maybe some of the composition or formulation patents may be in doubt.

Wyandotte requested a 10¢ purchase price of biphenyl for their program; we indicated schedule. We were unable to gather a lot of information since, I suspect, we somewhat surprised them with our knowledge of their program due to their previous great secrecy. It was agreed that we would gather together our loose ends at Monsanto and return to Wyandotte in about a month with a proposal on supply of difunctional resin material. Quantities required were estimated from biphenyl content at about initially 4-6 $\overline{M}$ pounds per year, growing during a period up to about 1975 to about 15-16 $\overline{M}$ pounds. No indication of possible pricing on the decachloro biphenyl or the various difunctional resin materials were presented. It was stressed that Monsanto's interest was primarily in the supply of resin materials and that at this point we had not envisioned programs which would carry us into finished products, such as fabricated articles or the resin.

Action Required:

1. Monsanto marshal all information and develop a unified approach to Wyandotte; approach to include proposals on resin materials and decachloro biphenyl.

2. Contact American Cyanamid to re-establish their interest and timing with this additional knowledge of Kuhlmann technology.

3. Determine what appropriate options, licensing, etc. might be available from Kuhlmann for Monsanto participation in this resin material market.

WM. K. JOHNSON

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