

DOW CHEMICAL / MONSANTO MEETING
ON MCB -- OCTOBER 22, 1973

RATE AND TIMING OF MCB DEMAND:

It now appears that Dow will need a tanktruck of our MCB material by late March or early April, 1974, with full production to begin fourth quarter 1974, at a rate of approximately 8¹/₂ pounds per year. Late 1975 or early 1976, they expect a rate of 15M lbs. per year. It appears that if Dow selects the higher Para content isomer that Monsanto will sell in excess of these quantities on a long term.

ACTION TO BE TAKEN:

1. W.H.S. Obtain and send in data on Analytical Methodology, etc. ASAP
presented by Bob Copeland and Jerry Clark
2. CUNNING Arrange for Monsanto to perform analysis on Di-Chloro and higher content materials as well as the unknown factor on MCS 1547 and 1546. DEC.
PATON/MIS
3. CUNNING Arrange for analysis of sample of PPP material given to you by Dow. DEC.
PATON/MIS
4. HOWARD Present data on Dow's use of our MCB product and the disposal and incineration of Di-Chloro and higher isomers in final product to Monsanto higher management to determine need for Government notification. DEC.
BERGEN/MIS
5. CUNNING Determine minimum acceptable increase in price of Benzene and Chlorine to justify increase in the price of MCB product as per Don Black's request. DEC.
PATON/MIS
6. CUNNING Send letter to Dow Chemical quoting \$.165/lb. with Benzene and Chlorine tolling as well as straight \$.24/lb. firm with the escalation factors on Chlorine and Benzene built in. Also, mention our acceptance of a three year Ever-green Contract renewable yearly after the third year with certain outs. This should include a section stating conditions of lead time necessary for notification to Dow should our Aroclor business drop below 25%. ASAP
PATON/MIS
7. J.SAVAGE/ Determine minimum production quantity feasible for tanktruck order of MCB type material by Dow Chemical. BY DEC.
MIS
8. HOWARD Determine Monsanto's policy with respect to notification of Government on the MCB sale to Dow Chemical. TWO WKS.
BERGEN/MIS

Bob Copeland is to characterize properties of the Meta stream and send to St. Louis in one month.

MCS 021-26

MIS:ha

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- 1-b. Chlorine: After November 1, 1973, an increase of \$2.00 per ton of Chlorine will increase the price of MCB by \$0.05 per pound. The base on "C" cost/lb. Chlorine is the OPD Chemical Grade price which is now approximately \$75.00 per ton. No other escalators in terms of labor cost will be passed on in 1974.

At this point, Don Black suggested that we set some minimum change in the cumulative effect of Chlorine and Benzene which would be necessary prior to announcing a price change on the MCB.

RAW MATERIAL TOLLING - CHLORINE AND BENZENE:

- A. With Dow supplying both Chlorine and Benzene, the price would be \$.1654/lb. FOB St. Louis. The ratio of products would be as follows:

0.875 lbs. of Benzene and 0.376 lbs. of Chlorine for every one pound of MCB. Benzene would be delivered to Anniston; Chlorine, to Krummrich.

B. BIPHENYL TOLLING

We would like the option to take all or part of the Biphenyl requirements where purity was in excess of 99%. The price would be \$.1654/lb. FOB St. Louis, for the MCB material plus the following tolling factors:

0.376 lbs. of Chlorine plus 1.0 lbs. of Biphenyl for every one pound of MCB. Biphenyl and Chlorine to be delivered to Anniston. In this case we would need a 200 pound sample of Biphenyl and Dow's production specification on their Biphenyl prior to accepting this option.

Monsanto made it clear that in order for us to manufacture MCB with any degree of certainty, Dow must supply the Benzene. Dow seems interested in the \$.165/lb. plus Benzene and Chlorine tolling.

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into a river, the Di-Chloro content concentration in fish would be approximately 0.012 ppm. It was noted that the FDA maximum is .5 ppm. The analysis of Kevin Carney was given to Howard Bergen and will be distributed with this report.

REGISTRATION - GOVERNMENT INVOLVEMENT:

At present, it seems that Dow is reluctant to disclose anything to the Government and would prefer that Monsanto did likewise. The cost of re-registering the OPP products would be prohibitive and that at the very minimum, Dow may amend their registration to include another source. We mentioned that Dow should assume that Monsanto would notify the Government because of prior commitments on PCB. This question, however, should be further defined by Monsanto.

We presented the following alternatives to the 24.5¢/lb. Bulk, FOB St. Louis, price on MCS 1547.

1. We will extend the price of 24.5¢/lb. bulk, FOB St. Louis, to November, 1973, on both specifications, both the old MCS 1547 and the new higher Para Isomer content material. After November 1, 1973, the following will take effect:

1-a. Benzene: After November 1, 1973, a change of \$.01 per gallon in the price of Benzene will increase the price of MCB by \$0.185¢/lb. The base price for Benzene will be our September, 1973, price at Anniston, Alabama. Monsanto is willing to notify Dow Chemical monthly of the changes to the Benzene price. Dow Chemical can request validation of this through Haskins & Sells, C.P.A. firm.

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POLYPHENOL SPECIFICATIONS:

We discussed the tentative Dow manufacturing material specification on OPP and PPP materials. It was noted that for the OPP product, Dow does not have any problem meeting their spec on "higher chlorine impurities". This was verified on the twenty drum shipment and it looks as if there is some buffer as to how high Monsanto can go on the Di-Chloro and higher material and still enable Dow Chemical to meet their proposed standard from last meeting. Specification for the PPP material was generated from pilot plant samples which were purified in their analytical laboratories. Exact data on both of these will be sent to carbones as soon as received from Dow. It was noted that the PPP product has less Di-Chloro and higher impurities than their OPP product. Dow gave a sample of their PPP product to Monsanto laboratories for comparative analysis. The question was raised as to whether Monsanto could provide a higher Para content in their MCB product. We estimated this new product would contain approximately fifteen percent of the Para isomer; however, this would raise the Di-Chloro and higher impurities to approximately 1.0 and reduce the Ortho isomer to approximately seventy eight percent. A new proposed specification for this material included the following:

<i>24/10/73</i>	Chlorine Content	Approximately	0.6% max?
	Ortho-Chloro Biphenyl		75.0% Min.
	Meta Chloro Biphenyl		5.5% Max.
	Para Chloro Biphenyl	The difference which is approximately 14%	
	Di-Chloro and higher		1.0% max

A sample was given to Dow from ANALAB, INC. for spiking experiments. Dow Chemical tend to prefer the higher Para Isomer material at present.

ENVIRONMENTAL IMPACT:

Kevin Carney presented a flow diagram of the higher chlorine content impurities as it flows through their process. Based on Dow's largest customer of OPP which is approximately 3M lbs. per year, and assuming that all the Di-Chloro and higher material in the OPP product finds its way

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IN NAME & LOCATION: W. H. Slowikowski - Akron

October 30, 1973 (Rec. 10-25-73) cc H. S. Bergen St. Louis
T. L. Gossage St. Louis
MEY DOW CHEMICAL / MONSANTO MEETING ON MCS Cuming Paton St. Louis
OCTOBER 22, 1973 D. L. Mellon Akron
W. H. Slowikowski Akron
REFERENCE
> : FILE

PRESENT FOR DOW CHEMICAL:

Don Black	U. S. Purchasing
Bob Copeland	Research & Design
Jerry Clark	Research & Design
Kevin Carney	Plant Design Engineer
Rudy Steihl	Analytical Laboratories(substitute for Bob Gill)
Bob Johnson	Commercial Development in the OPP-PPP Product Group
John Donalds	General Manager of Design Products
Roy Hastic	Production Manager

PRESENT FOR MONSANTO:

Howard Bergen
Tom Gossage
Cuming Paton
Dave Mellon
Bill Slowikowski

ANALYTICAL METHODOLOGY AND RESULTS:

Dow presented their technical analysis of the initial gallon samples of MCS 1547 and MCS 1546 as well as an analysis of the OPP material produced from the MCS 1547. Analysis on both these samples was compared with the results of Monsanto's analysis on the same items. In general, it was noted that both Monsanto and Dow agree on the analysis and that the correlation on all numbers is well within experimental error. The exact numbers presented for discussion will be forwarded to the carbones when received by Bob Copeland. With respect to the MCS 1547 analysis, Dow methodology further defined the Di-Chloro Benzene and higher impurities on a ppm basis using electron capture gas chromatography. In using this procedure, they noted 22 ppm of an unknown "spike". They would like Monsanto to present data analyzing the Di-Chloro and higher impurities as well as attempting to identify the unknown which appears in this range of analysis.

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