Monsanto

FROM (NAME & LOCATION): C. D. Bias, St. Louis Research

DATE: August 28, 1969

SUBJECT: United Resins/
Amorphous Polypropylene

REFERENCE:

TO: Cumming Paton - CPATO

CC: M. W. Farrar - Res 1
J. R. Darby - Res 1
W. F. Waychoff - WWAYC
J. K. Lilly - JLILL
C. P. Farley/P.R. Graham-CFARL
J. A. Cannon - Res 3
A. W. M. Coaker - Res 3
R. H. Mills - Res 3
N. W. Touchette - Res 3

Some time ago, we did some work for you on checking the compatibility of Montars in Eastman's amorphous polypropylene. That work was reported to you by memo on June 5th, 1969. Subsequently, you asked that we extend the work somewhat, in the hopes that a compatibilizing agent (e.g. Modaflow) could be found for the Montars. Also, you asked that we evaluate several Aroclors as modifiers for amorphous polypropylene (APP). We have completed this work, with the following results and conclusions.

Modaflow at 0.1%, 0.5% and 2.5% was added to Montar 1 and then incorporated into the A.P.P. (at 10% and 20% levels) by heating. Films were drawn down on Kraft paper and on release-treated glass, as reported before. All films were quite tacky; 25 mil films on glass were too tacky to remove for tensile testing, and the Kraft paper tear was poor for all six blends. In compatibility of the Montar 1 in A.P.P. was still evident, and there did not appear to be any advantage to using A.P.P. alone.

Films with Aroclors alone were clear and well-formed, indicating good compatibility. Fiber tear and adhesiveness seemed better at the 20% level than at 10%. We would rate the Aroclors tested in the following order, best to worst: Aroclor 5460, Aroclor 1262, Aroclor 1260 and Aroclor 1242, which was a distant fourth.

Films with Aroclor/Montar 1 were very tacky, but adhesiveness and appearance was not much different from that of Montars alone.

A.P.P. tends to decompose on prolonged heating and at high temperatures.

It does not have the thermal stability ofthe Elvax resins. Blends with Elvax 210 were quite easily made, since Elvax 210 is a relatively low melting resin.

DSW 586711

To: Cumming Paton August 28, 1969

Blends with Elvax 40 were more difficult to make, and with Elvax 150, totally unacceptable. Elvax 210 was blended with the Aroclors and A.P.P. in the ratio 20/20/60. These films were quite good from an adhesive standpoint, and were definitely superior to all other films tested.

To summarize: I still feel that Montars do not fit in with amorphous polypropylene. But we have definitely found a use for the A.P.P. In hot melt adhesives, it seems to be a good substitute for the wax and a partial substitute for Elvax. This could be a way to lower the price of certain hot melts.

Another possibility is in the field of pressure-sensitive adhesives.

A few blends we prepared of A.P.P. with XL-8000 and a couple of Amoco's polybutenes, showed that extremely tacky films could be prepared. We did not follow this up very much since it really did not seem germane to our original problem.

Please call if you have any questions.

Chuck

C. D. Bias

ds

DSW 586712

STLCOPCB4092046