



INTERNAL CORRESPONDENCE

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R. N. Wheeler

## PLASTICS DIVISION

RIVER ROAD, ROUND BROOK, NEW JERSEY 08305

To (Name) Mr. J. C. Schlichter  
 Division Union Carbide Corporation  
 Location Texas City, Texas

Date April 14, 1967  
 Originating Dept. Applications - R & D

Answering letter date

Copy to Mr. D. Barbieri - BB  
 Mr. J. H. Barrett - TC  
 Mr. J. N. Barton - Chicago  
 Mr. G. P. Bigelow - NY  
 Mr. A. J. Costantin - BB  
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 Mr. J. L. Hockersmith - TC  
 Mr. D. E. Richardson - TC  
 Mr. G. C. Shipston - NY  
 Mr. R. N. Wheeler - SC

Subject Proposed specification for  
 Ethylene-PVC Copolymer  
 Resins for the PVC Bottle  
 Market

The proposed resin specification for QXOL-7 contained in your memorandum of April 5, 1967 does not define a resin of sufficient quality for the clear rigid PVC bottle market. The required resins QSQH, QSQL, and QSQM should meet the following specification:

| Property                         | QSQH      | QSQL      | QSQM      |
|----------------------------------|-----------|-----------|-----------|
| Inherent Viscosity               | 0.76-0.80 | 0.91-0.95 | 0.96-1.00 |
| % Ethylene                       | 0.90+ .15 | 0.90+ .15 | 0.90+ .15 |
| Screen Analysis                  |           |           |           |
| % thru 40 mesh                   | 100 min.  | 100 min.  | 100 min.  |
| % thru 200 mesh                  | 4 max.    | 4 max.    | 4 max.    |
| Particle Size,                   | 140-200   | 140-200   | 140-200   |
| Clear HRP                        | 3 max.    | 3 max.    | 3 max.    |
| Dye Respro                       |           |           |           |
| 17.5 mil                         | 0 max.    | 0         | 0         |
| 10 mil                           | 50 max.   | 50        | 50        |
| ICMT                             | 90 min.   | 100       | 100       |
| Contamination                    | 3 max.    | 3         | 3         |
| Dry Flow, sec/400cc              | 4.0 max.  | 4.0       | 4.0       |
| Bulk Density, lb/ft <sup>3</sup> | 28 min.   | 28        | 28        |
| Heat Loss, %                     | 0.5 max.  | 0.5       | 0.5       |
| Plasticizer Sorption, %          | 80 min.   | 80        | 80        |

These resins are being priced considerably above the competitive resins currently sold in this market. This premium is based not only on the advantages derived by the ethylene comonomer but on a low fisheye level and excellent powderblend properties. The powderblend approach used by potential

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resin customers necessitates low volatiles, low fines content and freedom from hard particles in the resins.

The ethylene content is especially significant because values greater than 1.1% cause haze in clear bottle formulations. This lower ethylene content and tighter specifications are necessary if these resins are to penetrate the clear packaging market.

The resins development effort and recent quality improvements in suspension resin production will be wasted if sufficiently restrictive specifications are not established to demand a premium price for these resins.

*R. J. Ireland*  
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