UNION CARBIDE INTERNAL CORRESPONDENCE

PLASTICS DIVISION — RIVER ROAD, BOUND BROOK, NEW JERSEY

To (Name)	Dr. F. E. Bailey	Date	April 18, 1966
Company	UCC- Chemicals Division		
Location	South Charleston, W. Va.	Originating Dept.	Applications R & D
		Answering letter date	
Copy to	See Attached Distribution List	Subject	Pechiney St. Gobain Resin Bound Brook Evaluation

The concensus of opinion at Bound Brook rate the Pechiney St. Gobain resins as good or better than our present suspension resins in most characteristics. Their performance in several fabrication areas warrant a more intensive investigation (as is planned) of the Pechiney economics compared to those envisioned for our suspension process. Should we be convinced that homopolymer can be produced with lower costs by this bulk process and wish to become lisencees, we would first want to examine larger quantities of Pechiney resin in production trials to judge batch to batch variability and verify our findings with initial small samples.

To obtain an unbiased impression of the resin performance, obtain samples from sources other than Pechiney might be in order, i. e. Wacher Chemical Germany, Pechiney customers. Of significant consideration in utilizing this process at this time would be our ability to dilute further our technical capabilities or abandon other programs when adding a new process to our PVC resin complex.

The three Pechiney resins studied were:

RB 8010	.67 inherent viscosity	QYSA
GB 1210	.98 " "	QYTQ, QYNA
GB 1510	1.1 " "	QYSC

Twenty five kilos of each (55 lbs.) were spread thinly between six fabricating areas at Bound Brook with the following results. No comments are made except where differences were noted with the resins being compared. The Pechiney resins can be considered commercially equivalent in those properties not noted.

Fiber and Fabrics

Only Fiber and Fabrics compared the resin to our non solvent resin QYNA since that has become an irreplaceable standard for them in critical applications. As the largest resin consuming activity at Bound Brook, their examination of GB 1210 (TQ and NA) indicated:-

1. Acceptable in critical color applications because of insignificant graying tendency.

2. Contamination unusually low
3. Fisheye surprisingly poor; resin judged unacceptable for Gloss 06. Fisheyes were very small for excellent stability.

Wire and Cable

The wire and cable group looked at GB 1210 (TQ) and GB 1510 (SC) as a resin for our compounds as well as a dryblend resin with the following conclusions:

1. Mediocre electricals because of low volume resistivity on finished wire
2. Very good fisheye rating on wire
3. Much faster drying characteristics than TQ in Flexol 1010 and Flexol 1313
4. Excessive dusting regarded as poor in a dryblend resin

Molding and Extrusion

With RB 8010 (SA) looked at in rigid formulations and GB 1210 (TQ) in a flexible formulation and rigid pipe formula the following differences were noteworthy:

RB 8010

1. Much better flow than QYSA
2. A 4°C lower heat distortion in an unmodified formula decreasing to no difference with 8% impact modifier

GB 1210

1. Resin showed poorer flow than TQ resin
2. Better ultimate stability in rigid formulations
3. Faster drying time than TQ

Bottles

Limited to mill and flow tests because of small RB 8010 (SA) sample, no differences of commercial importance were noted comparing the resin to Diamond 35 our current bottle resin. Fisheyes in rigid bottles should be acceptable as indicated by film extrusion.

Films

Extruded film from RB 8010 (SA) revealed a very low fisheye level, as good as the best UCC suspension resins to date. Clarity and haze were excellent.

Film Resins

GB 1210 (TQ) was evaluated as a potential resin for sale to customers extruding flexible vinyl films with the following conclusions:

1. Drying time much faster
2. Flow qualities in the formulation much better
3. Less ultimate stability in an FDA formula indicated

In all cases these groups felt the resin was of better quality than our present average suspension resin quality and that such a resin could be used readily across the board with the present exception of Gloss 06 film and critical electrical applications. We hope these comments will be of value to you in appraising the merits of the Pechiney resins and process.

AJC/bhm

A. J. Costantin