

Mr. A. J. Costantin

January 4, 1968

BOUND BROOK OFFICE

Mr. J. H. Field
Mr. P. T. McCoy

Type "O" Vinyl Resins
Minnesota Mining and Manufacturing

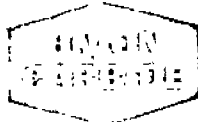
In view of our plans to produce QSQH and QSQL for rigid applications, these should possibly be tested at 3 M for their rigid tap application. I don't think we would want to produce QSOK-7 for 3 M unless the volume justified it.

Very truly yours,

R. N. Wheeler

RNW/ra

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INTERNAL CORRESPONDENCE

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R. N. Wheeler

CHEMICALS AND PLASTICS

TARRYTOWN TECHNICAL CENTER,

TARRYTOWN, NEW YORK 10591

To (Name) Mr. C. A. Strong
 Division 2040 West Wisconsin Avenue
 Location Milwaukee, Wisconsin

suggested
Q528
be considered
 Date
 Originating Dept.

December 27, 1967

Answering letter date

Copy to See Distribution List

Subject Type "O" Vinyl Resins
 Minnesota Mining and Manufacturing
 (3 M) Evaluation

Dear Mr. Strong:

This is to summarize briefly the essence of our recent telephone conversations and one with Bill Nitardy of 3 M's Retail Tape Division relative to their evaluation of three grades of our new "O" resins. Briefly, QSOS Blend 2, QSOM Blend 8 and QSOH in an extended rigid tape application Blend 1 were evaluated and assessed as unsatisfactory for the following reasons:

QSOS and QSOM	-	Poor processibility Melt fracture Surface irregularities
QSOH	-	Melt fracture Low heat distortion Surface irregularities

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 QSOH was indicated as our only serious contender but not at a premium if only comparable performance with conventional PVC is obtained. A premium may be considered if a definite superiority over conventional resins may be obtained.

As you know, 3 M is very close-mouthed, but the following information was obtained from Mr. Nitardy. The preblends were unfilled and prepared in an intensive mixer, not a Henschel or Papenmeir. The extruder was a conventional 24:1 I/D with a constant-pitch, decreasing-depth screw. Mr. Nitardy would not reveal the film or sheet width or thickness. QYSJ exhibits a satisfactory performance in both extrusion and product performance. The Airco propylene modified PVC's extrude satisfactorily but lack the required product physicals. No effort was expended to assess thermal stability or fisheyes.

Mr. Nitardy indicated a continuing interest in the "O" resins and requires a resin with:

Better Processibility
 Better Surface Characteristics
 Better Heat Distortion
 No Melt Fracture

than the current candidates.

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Several pertinent properties of the subject resins and those of a suggested candidate for this application follows:

	QSOH-1	QSOM-8	QSOS-2	Suggested Candidate QSOK?
Inherent viscosity	0.78	0.96	1.32	~ 0.87 (1)
Ethylene content	1.05	1.39	1.85	~ 0.50 (1)
Heating loss	0.3	0.4	0.5	0.5 max
Apparent density	33.	29	27	33-36
Resin flow	3.4	2.6	-	3.5 max
Particle Size				
Median	160	156	195	125-150
Through 200	7	1	0	0
Initial Color Mill Test	102	108	110	100 min.
Extended	-	-	-	= QYSJ
Fisheyes (Rig)	-	-	-	= QYSJ
App. Melt Visc. (Rig)	2250	-	-	= QYSJ
Contamination, slurry				3 max

(1) Adjusted to approximate apparent melt viscosity of QYSJ.

Several small experimental runs should enable an adjustment in inherent viscosity and ethylene content to achieve an apparent melt viscosity in the QYSJ range.

This information on this particular evaluation by the 3 M Retail Tape Division does not necessarily speak for the other 3 M divisions; their results are not yet known. The Retail Tape Division's evaluation would, however, indicate that more attention should be directed to the evaluation of "O" resins in rigid applications.

Very truly yours,

P.T. McCoy/js

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