PLAINTIFF'S EXHIBIT

UC-2553

Niagara Falls, New York
October 7, 1970

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M E M O R A N D U M

TO: Messrs. J. L. Myers
J. A. Riddle
F. J. Shortsleeve

CC: Messrs. B. L. Ingalls
H. B. Rhodes

FROM: R. E. Byrne

SUBJECT: Status of Program - Asbestos in Latex Paint

SUMMARY

The status of the evaluation of asbestos for latex paints seems to be quo. We have a recent report by R. W. Lasher which does a good job of illuminating the merits of CG-40 in latex systems. It represents a good point at which to begin discussions with paint manufacturers and, in fact, has already been well received at Ameritone. Since we have essentially no further technical work in progress, I believe we should proceed with our market introduction, with or without C.I.D. marketing support.

DISCUSSION

For simplicity, my latest information is broken down into the several areas where activity might be expected.

Major Paint

According to Dick Lasher, Major is selling their A-1 Premium Indoor-Outdoor latex paint on a limited basis in their stores. This product contains CG-135 and a high TiO_2 content (5-1/2 lb./gal.) which gives exceptional hide. The feedback from users is all very enthusiastic and Milt Golden plans full page newspaper advertising of the paint on October 3 in all areas wherein Standard Brands stores are located.

Major plans to use at least the CG-135 which we presently have on hand at King City, but is evaluating CG-40 (filter cake) and will let us know what his ultimate product requirement will be. He continues very optimistic.

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Jennat Corporation

Dick Lasher has issued a Technical Service Report, "Incorporation of CALIDRIA Asbestos Filter Cake into Latex Paint Systems." As you know this report shows that CALIDRIA asbestos provides a cost performance advantage for a typical paint manufacturer. The major advantages are a 16% increase in opacity and reduction in roller spattering. A reduction in organic thickener is possible and cost reductions up to 11¢/gallon can be realized. This report was presented, by Lasher, to Grow-Ameritone and was well received. They are currently evaluating the concept and will report back soon.

Jennat is currently completely occupied with start-up of their new plant at Torrance and do not expect to do further work on asbestos for 2 or 3 months.

S. Charleston - R&D

Paul Payne, Ralph Stickle, et al, continue to be busy with projects other than asbestos and there appears to be no change in this situation contemplated in the near future.

Latex Marketing - NYO

Frank Bertics still plans to explore interest in asbestos at DeSoto, Sherwin-Williams or such, probably some time in October. He claims to be playing cautious to "await developments from the west coast." They plan no activity in S. Charleston before the introduction at these other paint companies.

Niagara Falls - R&D

Compounding tests have yielded Hegmann grind ratings as high as 6 using CG-40 and High Purity Open. We hope to develop a suitable technique to allow use of HPP in a latex formulation, but have not yet succeeded. If we can demonstrate that either the pellet or open form can be used, it would eliminate a handling problem for both our plant and potential customers.

R. E. Byrne, Jr.

REB/bsn

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Technical Service Report
-by

Richard W. Lasher
Thomas M. White

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AN EVALUATION OF 'STANDARD BRANDS' A-1 PREMIUM 1-COAT EXTERIOR HOUSE PAINT

for

Standard Brands Paint
Torrance, California

Jennat Corporation
A Subsidiary of Union Carbide Corporation
Gardena, California
August 17, 1970

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AN EVALUATION OF STANDARD BRANDS'
A-1 PREMIUM 1-COAT EXTERIOR HOUSE PAINT

A. INTRODUCTION

Four samples of Standard Brands' new A-1 Premium exterior-interior guaranteed one-coat latex paint were received for evaluation. Two white samples (a current batch and an earlier formulation-A Lot 9750), a beige tint (Cameo White), and a green tint (Canton Jade) comprised the four paints. Examination of their physical properties, paint film properties, and application properties was conducted for initial screening purposes before undertaking extensive exterior testing. Included in the series were samples of Sears' exterior Acrylic Latex (also guaranteed one-coat) and Pittsburgh Paints' Sun Proof house paint to determine the validity of various one-coat claims.

B. SUMMARY

The A-1 Premium Exterior-Interior guaranteed one-coat paints completely fulfill their claim of one-coat coverage. The white paint has a contrast ratio of 1.000; this coupled with high solids (66%) as well as exceptional application and leveling properties assures one-coat coverage regardless of substrate color or method of application. The test results demonstrate that the Sears' (guaranteed one-coat) and the PPG paint do not possess a comparable degree of one-coat coverage as evidenced by contrast ratios of 0.987 and 0.977 respectively.

As stated earlier that A-1 premium paints exhibited superior application properties, particularly in the areas of touch-up, framing, lapping, and leveling. Another unique characteristic is the almost complete lack of spatter upon roll application which was not matched by either the Sears or PPG paints.

On the negative side, severe checking occurred when the A-1 premium paints were cured at 37°F. Also, wide performance differences were noted at 37°F. between the white and tinted samples which when cured under ambient conditions gave equivalent results. In the case of the white paints, the A-1 premium sample outscrubbed both the Sears and PPG paints by a considerable margin under ambient drying conditions.

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However, the situation reversed when cured at 37°F.

Using overall appearance and application properties as the primary criteria, the Standard Brands' A-1 Premium one-coat paints are vastly superior when compared to its Sears or PPG counterparts.

C. DISCUSSION AND RESULTS

The evaluation was conducted in two parts. Table 1 gives the test results for the four A-1 Premium one-coat paints. The objective of this portion of the evaluation was to determine the hide and application properties as well as screening other important properties prior to a full scale exterior evaluation. The test results show a variation in physical properties between the four paints. The total solids ranged from 66.04% for the white paint to 60.10% for the Canton Jade sample. A corresponding difference was noted in the viscosities, 72KU for the white decreasing to 67KU for the Canton Jade. The tinted paints passed two cycles of freeze-thaw while the white paints barely passed one cycle.

All four paints exhibited contrast ratios of 1.00 which is especially impressive for a white paint. Room temperature enamel holdout results show complete holdout, however, the 37°F. holdout results show considerably less holdout except for the Canton Jade sample. This indicates poor cold temperature coalescence. The poor cold temperature coalescence was confirmed by severe checking on the 37°F. enamel holdout and scrub panels. Perhaps adjustment of the filming aid type and quantity would alleviate the problem. The same phenomenon was observed when comparing the ambient and 37°F. scrubs. Both the one day and 7 day ambient scrubs demonstrated a high degree of scrub resistance. However, the 37°F. scrubs exhibited considerable wear at 1000 to 1400 cycles. The effect was more pronounced in the two white paint samples.

In the area of application properties the brush and roller application, lapping, touch-up, and leveling were excellent. The burnish resistance was better in the tints than the straight white paints. The one-coat coverage on all panels was excellent. The procedure used to prepare the application panels was modified to test the one-coat

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coverage. The panels for the tinted paints were primed with Standard Brands' Vinyl Latex Pigment Wall Sealer, while the panels for the white paints were primed with the Canton Jade A-1 Premium paint diluted by 15% with water. The remainder of the test procedures are attached in Appendix 1.

Table 2 compares Standard Brand's A-1 Premium one-coat white paint to Sears exterior acrylic one-coat white and PPG Sun-Proof white house paint. The purpose of this section is to determine the validity of one-coat claims as well as compare the relative performance of several exterior one-coat paints. The physical properties test results show total solids varing between 66.04% for the Standard Brands' white to 56.58% for the PPG material. Pigment volume concentrations calculated from the labels show Sears at 37.9% and PPG at 34.2%. In the area of freeze-thaw both Sears and PPG passed five cycles while the A-1 premium barely passed one cycle. Fineness of grind measurements shows all paints to give similar Hegman readings of 6.

Significant differences became apparent when the paint film properties of the three systems were examined. All had reflectances between 85% and 86%, but the constrast ratios were quite different. The A-1 premium one-coat gave a 1.000 contrast ratio while the Sears and PPG gave 0.983 and 0.977 respectively. The wet hide (mineral oil) and enamel holdout results indicate that the three paint systems are below the critical pigment volume concentration. However, the 37°F. enamel holdout and scrub results illustrate poor cold temperature coalescence for the A-1 paint. The A-1 paint gave a low temperature enamel holdout 60° gloss reading of 12, while the Sears and PPG gave readings of 40 and 53 respectively. The scrub results confirm this observation. The one day ambient scrubs (5% Ajax medium) show almost complete wear for the Sears and PPG paints while the A-1 premium sample exhibited zero percent wear. The trend continued for the seven day ambient scrubs, but the reverse was true for the 37°F. scrubs.

The most significant differences become apparent when the paints were applied to upsum boards primed with a deep green tint. The Standard Brands' A-1 sample covered the green primer on the first coat due to its contrast ratio of 1.000, excellent leveling and high solids. Also, since complete coverage is obtained with one-coat,

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lap marks do not show. On the other hand the Sears and PPG samples did not cover in one coat. Consequently, the green primer shows through on the one-coat portion of the panels and even is slightly visible in the two coat areas. This leads to noticable differences between the one-coat, two-coat and touch-up areas on both the Sears and PPG upsum board panels. In fact, the Standard Brands' A-1 paint exhibits better coverage in its one-coat area than Sears' two-coat portion.

D. CONCLUSION

The test results clearly indicate the Standard Brands' A-1 Premium exterior-interior guaranteed one-coat latex paint to meet the coverage and application requirements of a one-coat paint system. It is doubtful whether Sears' and PPG's white exterior one-coat systems will cover a tinted substrate in one-coat. The factors contributing to the A-1's excellent coverage are a contrast ratio of 1.000, high solids (66%), and good leveling. Aside from complete coverage the A-1 samples exhibited excellent application rehology. There was almost a complete lack of spatter upon roll application as well as excellent brushability.

The cold temperature (37°F.) tests revealed poor cold temperature coalescence as evidenced by severe checking of the paint film. Consequently, a complete exterior evaluation should be postponed until a filming aid study is completed and the cold temperature cracking problem is resolved.

Richard Lasher

Richard W. Lasher

Thomas M. White

Thomas M. White

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TABLE 1

Paint Test Results

Physical Properties	Standard Brands A-1 Premium White A	Standard Brands A-1 Premium White A Lot 9750 B	Standard Brands A-1 Premium Cameo White C	Standard Brands A-1 Premi Canton Ja D
Total Solids (%)	66.04	65.69	62.87	60.10
Viscosity (KU)	79	71	72	67
Viscosity (cps)*	1340	1130	1200	770
Freeze-thaw				
(1) Cycles passed	0-1	0-1	2	2
(2) Viscosity, after 5 cycles (cps)	-	-	-	-
Heat Stability, viscosity, 10 days @ 77° F. (cps)	2180	2480	1580	1200
Weight per Gallon	13.12	12.56	11.78	11.24
pH	8.45	8.45	8.75	8.75
Fineness of Grind	6	6	6	6
Paint Film Properties				
Reflectance	85.0	85.0	76.0	60.0
Contrast Ratio				
(1) Dry Hide	1.0	0.997	1.0	1.0
(2) Wet Hide	1.0	1.01	0.993	1.0
Enamel Holdout (60° Gloss)				
(1) Room Temperature	48.0	51.0	50.5	51.0
(2) 37° F.				
(a) Sealed	12.5	17.0	19.5	42.0
(b) Unsealed	20.0	22.0	22.0	24.0
Application Properties				
Brushability	Good	Excellent	Excellent	Excellen
Foaming	Moderate	Moderate	Moderate	Moderat
Framing	Fair-Good	Fair-Good	Good	Good
Lapping	Good-Excellent	Good	Excellent	Good-Excell
Touch-up	Good	Good	Excellent	Fair

*Spindle #4, 60 rpm

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Application Properties	Standard Brands A-1 Premium White A	Standard Brands A-1 Premium White A Lot 9750 B	Standard Brands A-1 Premium Cameo White C	Standard Brands A-1 Premi Canton Jac D
Leveling				
(1) Visual	Good	Good	Good-Excellent	Good-Exc.
(2) N.Y.P.C., ranking	5+	5+	6	6
Sheen Uniformity	Good	Good	Good	Good
Burnish Resistance	Fair-Poor	Fair-Poor	Good-Excellent	Good-Exc.
Wet Crock Resistance	Fair	Fair	Fair	Fair
Water Spot Resistance	Excellent	Excellent	Excellent	Good
Drying Time	10 Minutes	10 Minutes	12 Minutes	12 Minut
Overal Appearance	Good	Good	Excellent	Good
85° Gloss	7.5 - 9.0	7.5 - 9.0	5.0	3.5
Color Properties				
Acceptance	-	-	Excellent	mulled are
Float	-	-	None	appears to be lighter

Paint Film Properties	A	B	A	C	A	D
Scrub - 7 Day Air Dry, 5% Ajax Media						
(1) Initial Wear (cycles)	3200	3200	3315	3315	2700	2700
(2) Total Cycles	7700	7700	7800	7800	6500	6500
(3) Percent Wear	5	10	7	5	20	10
Scrub - 1 Day Air Dry, 5% Ajax Media						
(1) Initial Wear (cycles)	1400	1460	670	1100	730	1500
(2) Total Cycles	5700	5700	4350	4350	5100	5100
(3) Percent Wear	5	20	17	15	15	5
Scrub - 3 Days @ 37°F., 4 Days Ambient, 5% Ajax Media						
(1) Initial Wear (cycles)	325	500	375	875	400	-
(2) Total Cycles	1400	1400	1000	1000	1100	1100
(3) Percent Wear	45	35	80	0	80	0

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'aint Film Properties	A	B	A	C	A	D
'ashability						
(1) Cycles To Remove						
(a) Lipstick	279	217	290	290	-	-
(b) Lanolin	10	5	8	8	10	15
(c) Wax Crayon	124	124	150	160	135	155
(d) #2 lead Pencil	50	42	110	125	72	99
(e) Ballpoint Pen	-	-	-	-	-	-
(2) Total Cycles	300	300	300	300	300	300

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TABLE 2

Paint Test Results

Physical Properties	Standard Brands A-1 Premium White A	Sears Exterior Acrylic White E	PPG Sun-Proof White F
Total Solids (%)	66.04	58.98	56.58
P.V.C. (%)		37.9	34.2
Viscosity (KU)	79	85	79
Viscosity (cps)*	1340	2350	1980
Freeze-thaw			
(1) Cycles passed	0-1	5	5
(2) Viscosity, after 5 cycles (cps)	-	2250	1890
Heat Stability, viscosity, 10 days @ 77° F.	2180	3640	2430
Weight per Gallon	13.12	11.40	11.26
pH	8.45	9.15	9.00
Fineness of Grind	6	5.5	6
Paint Film Properties			
Reflectance	85.5	86.0	85.0
Contrast Ratio			
(1) Dry Hide	1.0	0.983	0.977
(2) Wet Hide	1.0	0.994	0.988
Enamel Holdout (60° Gloss)			
(1) Room Temperature	48.0	47.5	48.0
(2) 37° F.			
a) Sealed	12.5	40.0	53.7
b) Unsealed	20.0	29.0	46.5
Application Properties			
Brushability	Good	Excellent	Excellent
Foaming	Moderate	Moderate	Moderate
Framing	Fair-Good	Fair-Poor	Poor

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*Spindle #4 @ 60 rpm

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Application Properties	Standard Brands A-1 Premium White A	Sears Exterior Acrylic White E	PPG Sun-Proof White F
Lapping	Good-Excellent	Poor	Poor
Touch-up	Good	Poor	Fair-Poor
Leveling			
(1) Visual	Good	Fair	Fair
(2) N.Y.P.C., ranking	5+	5	5
Sheen Uniformity	Good	Good	Good
Burnish Resistance	Fair-Poor	Good	Fair
Wet Crock Resistance	Fair	Good	Fair-Good
Water Spot Resistance	Excellent	Excellent	Excellent
Drying Time	10 Minutes	9 Minutes	9 Minutes
Overall Appearance	Good	Fair-Poor	Poor
85° Gloss	7.5 - 9.0	3.0	2.0

Paint Film Properties	A	E	A	F
Scrub - 7 Day Air Dry, 5% Ajax Media				
(1) Initial Wear (cycles)	3600	2500	2300	750
(2) Total Cycles	8200	8200	5500	5500
(3) Percent Wear	5	35	5	50
Scrub - 1 Day Air Dry, 5% Ajax Media				
(1) Initial Wear (cycles)	-	475	-	20
(2) Total Cycles	1600	1600	500	500
(3) Percent Wear	0	70	0	98
Scrub - 1 Day @ 37°F., 6 Days Ambient, 5% Ajax Media				
(1) Initial Wear (cycles)	250	900	230	450
(2) Total Cycles	1200	1200	800	800
(3) Percent Wear	90	5	80	5
Washability				
(1) Cycles to Remove				
(a) Lipstick	190	150	275	75
(b) Lanolin	6	6	8	8
(c) Wax Crayon	115	100	120	120

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Paint Film Properties	A	E	A	F
Washability				
(1) Cycles to Remove				
(d) #2 lead pencil	43	80	50	43
(e) Ballpoint pen	-	-	-	300
(2) Total Cycles	300	300	300	300

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