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Marshall Laboratory
November 26, 1963

MARSHALL DEVELOPMENT LABORATORY SUPPLEMENTARY RELEASE LETTER #1997-A

TRIAL MARKETING OF 603-955 #40 OUTSIDE WHITE
HOUSE PAINT-ALKYD TYPE

Cost Code - 3350

Class "C"

Related Release Letters: 1692

PROPOSAL AND EXTENT OF RELEASE:

This letter proposes trial marketing of 603-955 #40 Outside White-Alkyd Type - as a replacement for 301-960 #40 O.W. (oil type) in an area served by Ft. Madison to the extent of 20,000 gallons in 1964, with an option to continue this program at Sales request.

This product was developed at the request of Sales (WT-42-63) to alleviate two problems in the existing oil paint: (1) non-uniform initial appearance and (2) low profit.

This will be a companion product to 603-944 #42 Chalk Resistant O.W. (alkyd type) in the trial areas. (R.L. #1997).

MANAGEMENT DECISION REQUESTED:

Management is requested to approve trial marketing of this product to determine its marketability in view of the following limitations:

- (1) Stability is limited to 2 months.

- (2) There has been no plant production; there is no reproducibility data.
- (3) There is no durability background on this exact composition although experience with a related product, 603-922 #43 Alkyd House Paint White, has been completely satisfactory.

TECHNICAL OPINION:

The technical risks involved in the trial marketing of this product are considered small in view of the satisfactory experience we have had with similar alkyd house paints on the West Coast and the Gulf Coast. In replacing an oil paint, the most noticeable difference will be poorer application properties, especially drag-at-lap. This will be more or less counter-balanced by faster dry and more uniform appearance.

DESCRIPTION OF PRODUCT:

603-955 is higher in gloss, more mildew resistant and lower in hiding and cost than its earlier analog 603-922, #43 Alkyd House Paint, which is now being sold in the Texas-Gulf Coast area. Hiding is reduced to the level of 301-960 #40 Outside White. 603-955 is the direct free-chalking analog of 603-944 #42 O.W. (Alkyd Type)-R.L. #1997.

The following table gives a comparison of some important properties:

	<u>#43 H.P. 603-922</u>	<u>#40-Alkyd 603-955</u>	<u>#40-Oil 301-960</u>
Hiding	Excellent	Good	Good
Ease of Brushing	Good	Good	V.G.-Exc.
Ease of Lapping	Fair	Fair	V.G.-Exc.
Drying Rate	V.Good	V.Good	Fair
Color - Initial	Good	Good	Excellent
Package Stability	Excellent	Excellent*	Good
Durability	Excellent	Excellent*	V.Good
Mildew Resistance	Fair	Good*	V.Good
Iron Staining	V. Good	Fair	Fair
Dew Flatting	V. Good	V. Good	Poor
Uniformity of Appearance	Good	Good	Fair

*Expected Performance.

Stability

Several laboratory batches of 603-955 have shown excellent viscosity and sag stability through the limited period of two months. As in 603-944, stability, sag resistance, flow, brushing properties, etc. are controlled by Cab-O-Sil, colloidal silica. These products represent the first use in Trade Sales paints of Cab-O-Sil which is desirable for its minimum effects on gloss and color.

Laboratory batches of 603-944 have shown excellent viscosity and sag stability for periods up to six months. Cab-O-Sil has been used in 25-415, #517 Lt. Gray Metal Protective Paint, for over 12 mths. with excellent stability performance.

Durability

The effect of Cab-O-Sil on durability in the concentration of 9-#/100 gallons is unknown but is expected to be negligible. The use of calcium carbonate as part of the extender provides the high uniform gloss and mildew resistance but reduces the maximum resistance to iron staining that might be available if the extender were all talc.

603-922, #43 Alkyd House Paint, over the years has shown consistent improvement in resistance to erosion, cracking and flaking and blistering compared to #40 Outside White (oil). 603-955 is expected to perform in a comparable manner.

COMPETITIVE SITUATION:

Competitive evaluations have not been made.

TABULATION OF COMPOSITION:

The following table compares 603-955 with 603-922 in #/100 gallons.

		<u>603-922</u>	<u>603-955</u>	<u>Change No.</u>
W-5	Ti-Pure T, Anatase	205	135	(1)
W-50	Ti-Pure R-610, Rutile	88	45	(1)
W-98	Magnesium Silicate	204	109	(2)
W-1004	Calcium Carbonate	-	161	(2)
RC-141	64% Linseed Oil Alkyd (83% solids)	401	434	(3)
H-19	Alk. Ref. Linseed Oil	16	-	(3)
VM-7790	Soya Lecithin	14	-	(4)
W-176	Cab-O-Sil, M5	-	9	(4)
H-522	Turkey Red Oil	-	9	(4)

		<u>603-922</u>	<u>603-955</u>	<u>Change No.</u>
VH-7552	Cresole 10%	2	2	
H-668	Lead Tallate Soln.	27	20	
H-173	Mn Naphthenate Soln.	2	2	
H-454	Phenyl Mercury Oleate	11	11	
G-242	Tetrachlorophenol	11	11	
H-287	Mineral Spirits	168	-	(5)
H-200	High Solvency Hydrocarbon	-	181	(5)
Pounds Per 100 Gallons		<u>1149</u>	<u>1129</u>	<u>(6)</u>
PVC		28.8%	28.9%	
Vol. Solids		60.1%	60.1%	

Explanation of Changes

- (1) Reduced titanium dioxide to reduce cost and hiding.
- (2) Total extender increased to maintain PVC at 29%.
Fine calcium carbonate used as part of extender to improve gloss and mildew resistance.
- (3) H-19, linseed oil, not used. Was used originally to help lapping properties but is of no significant value.
- (4) Soya Lecithin, pigment flocculating agent replaced by Cab-O-Sil which is gelled by Turkey Red Oil to provide ease of brushing, sag resistance, etc.
- (5) Stronger solvent, H-200, provides lower viscosity vehicle and maintains solids at 60%.
- (6) Lower gallon weight is the result of lower density pigmentation.

REPRODUCIBILITY:

No reproducibility data have been developed.

CONTINUING LABORATORY WORK:

Exposures will be made to confirm the expected durability performance.

Stability of laboratory batches and initial plant production will be followed.

COST INFORMATION:

Estimated mill cost is \$2.68/gal. in one's; current mill cost of 301-960 is \$2.87/gal. in 1's. Official mill costs should be obtained from the Cost Department.

MANUFACTURING PROBLEMS:

Although there has been no plant experience, we expect no unusual production problems.

TOXICITY OR OTHER HAZARDS:

There are no new toxic or hazardous materials. Phenyl mercury oleate requires special handling precautions but is no longer unfamiliar to operators. Cab-O-Sil is a colloidal silica and requires a dust mask when handled. It reportedly does not contribute to silicosis.

LABEL INFORMATION:

No unusual label instructions are required. They should include recommendations for use of self-priming or #49 Primer.

SIMPLIFICATION:

For the period of trial marketing, formulas for one new finished product and one new mill base will be in file. Eventually this product may replace 301-960 #40 O.W.

PATENT INFORMATION:

No patent complications are known to be involved in the trial marketing or subsequent unlimited release of the proposed house paint formulated on the basis of a long oil length linseed oil modified alkyd resin, this paint being offered as a replacement for the conventional oil-based house paint.

CONFIDENTIAL INFORMATION:

There are no unusually confidential disclosures in this release letter.

FORMULA CARDS:

Formulas for 603-955 and its base 37-5610 are attached to copies of this letter for Production and Research personnel.

MARSHALL DEVELOPMENT LABORATORY


J. E. OYLER

JEO/bad
11/25/63

APPROVED:  DATE: 11/27/63

APPROVED: _____ DATE: _____