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AUG 16 1963

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Marshall Laboratory
August 14, 1963

MARSHALL DEVELOPMENT LABORATORY RELEASE LETTER #1997

TRIAL MARKETING OF 603-944 #42 CHALK RESISTANT

HOUSE PAINT WHITE - ALKYD TYPE

Re: Inv. WT-36-63

Related Release Letters: SSF #50
ML #1692

Cost Code: 3350

PROPOSAL AND EXTENT OF RELEASE:

This letter proposes trial marketing of 603-944, #42 Chalk Resistant House Paint White (Alkyd Type) as a replacement for 301-948, #42 O.W. (Oil type) in an area to be selected by Sales.

This product was formulated at the request of Sales (WT-36-63) to provide a chalk resistant tinting white house paint to alleviate two existing problems: (1) non-uniform initial appearance and (2) poor profit margin on 301-948.

MANAGEMENT DECISION REQUESTED:

Management is requested to consider approval to release this product for trial marketing to determine its marketability recognizing the following limitations:

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- (1) Stability of this product is limited to 2-1/2 months.
- (2) There has been no plant production, thus there is no reproducibility information.
- (3) We have no exposure background on this exact composition although experience with similar compositions leads us to expect good performance.

TECHNICAL OPINION:

The technical risks involved in the trial marketing of 603-944 are felt to be small considering that it is an improved analog of 603-13817 #34 Alkyd House Paint Tinting White which has been sold on the West Coast since 1959 with apparently few problems. Since it will be sold in areas replacing an oil paint (301-948) the most noticeable difference will be poorer application properties, especially lapping, but this is compensated for by the faster dry and more uniform appearance.

DESCRIPTION OF PRODUCTS:

603-944 is a higher gloss, more mildew resistant reformulation of 603-13817, #34 Alkyd House Paint, and is more compatible with the durable Universal Colorants. Hiding is reduced to the level of #42 O.W. to meet the specified mill cost target.

The following table gives a comparison of some important properties:

	<u>603-13817</u>	<u>603-944</u>	<u>301-948</u>
Hiding	Excellent	Good	Good
Ease of Brushing	Good	Good	V.G. - Ex.
Ease of Lapping	Fair	Fair	V.G. - Ex.
Drying Time	Very Good	Very Good	Fair
Color	Fair	Good	V.G.
Package Stability	Excellent	Excellent*	Good
Durability	Excellent	Excellent*	V.G.
Mildew Resistance	Fair	Good*	Good
Iron Staining	V.G.	Fair	Poor
Uniformity of Appearance	Good	Good	Fair

* Expected performance

Stability

One laboratory batch of 603-944 has been satisfactory for stability for 2-1/2 months. No other evidence is available. Stability, settling resistance, flow and brushing properties, etc. are controlled by Cab-O-Sil, colloidal silica. This is the first use of this material in a Trade Sales paint. Its use is desirable from the standpoint of minimum effects on gloss and color. Cab-O-Sil action is by gel formation throughout the paint vehicle rather than by pigment flocculation as in the case with soya lecithin. Cab-O-Sil has been used in a 25-Line gray product with good stability up to nine months.

Durability

The effect of Cab-O-Sil on durability in the concentration of 11 #/100 gallon is unknown but is expected to be negligible. Pigments Department has exposures of Cab-O-Sil at much higher concentrations in which increased chalking has been evidenced.

The use of calcium carbonate as a major portion of the extender provides the high (65-75) uniform gloss level but reduces resistance to iron rust staining compared to the performance of an all talc alkyd formula. In this property 603-944 is still considerably improved over 301-948 #42 O.W.

This paint should be used self-primed or over #49 Primer for maximum durability.

COMPETITIVE SITUATION:

No competitive evaluation has been made.

TABULATION OF COMPOSITION:

The following table compares the compositions of 603-13817 and 603-944 in #/100 gallons.

	#34 - 4 - 603-13817	#42 (Alkyd) 603-944	Change
W-50, T1-Pure R-610	292	190	(1)
W-98, MgSil	205	52	(2)
W-1004, CaCO ₃	-	200	(2)
RC-141, 64% L.O. Alkyd	422	436	-
KW-5395, Cab-O-Sil M5	-	11	(3)
H-522, Turkey Red Oil	-	11	(3)
VM-7790, Soya Lecithin Soln.	11	-	(3)
H-454, P.M.O. Soln.	11	11	(4)
G-242, Tetrachlorophenol	11	-	(4)
H-185, Copper Naphthenate Soln.	0.4	-	(4)
H-668, Lead Tallate Soln.	21	20	-
H-173, Mn Naphthenate Soln.	2	2	-
H-262, Heavy Mineral Spirits	178.6	-	(5)
H-200, High Solvency Hydrocarbon	-	180	(5)
Total	1154.0	1113.0	
Gallon Weight	11.54	11.13	
PVC	29%	29%	
Vol. Solids	60%	60%	

Explanation of Changes:

- (1) Hiding is reduced to the level of 301-948 to reduce cost.
- (2) Fine, wet ground CaCO₃ replaces portions of the talc and titanium dioxide. This grade of CaCO₃ is currently used in 301-948, #42 O.W. and 301-959 #1063 Pro-Line House Paint. It is used to upgrade mildew resistance, gloss, flow and color retention. This pigmentation has lower oil absorption and higher packing allowing a more highly pigmented mill base to be ground resulting in a significant savings on mill cost.
- (3) Cab-O-Sil, colloidal silica, is used as thickening or gelling agent replacing soya lecithin which aids brushing by pigment flocculation. Results in improved color and reduced flooding when using Universal colorants.
- (4) Tetrachlorophenol and copper naphthenate mildew inhibitors eliminated because of improvements afforded by CaCO₃. Result is further improvement in color.
- (5) H-200 is used to remove haze in dry film which develops when H-262 is used.

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 determined.

COST INFORMATION:

Estimated mill cost if \$2.65/gal. in ones. Mill cost in the range \$2.65 to \$2.70 was requested. Official 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 unusually toxic or hazardous materials. H-454 Phenyl Mercury Oleate is toxic requiring special precautions but the operators are familiar with this material. KW-5395, Cab-O-Sil M-5, a colloidal silica, has an S-1 handling classification which requires a dust mask. It is an amorphous type of silica and reportedly does not contribute to silicosis.

LABEL INFORMATION:

No unusual label instructions are required. They should include recommendations for self priming or use of #49 Primer. A lead warning will be required.

SIMPLIFICATION:

For the duration of the trial marketing period formulas for one new finished product and one new 48 Process mill base will be added to the files. Eventually this product may replace 301-948 #42 (oil type).

PATENT INFORMATION:

No patent complications are known to be involved in the manufacture and sale of the proposed alkyd resin based house paint, an apparently conventional formulation. The film-forming vehicle of this paint is comparable with that of #49 Primer, but in view of the substantially greater particle size of the extender pigments used in comparison with that of the #49 primer, the proposed composition is outside the scope of U.S. Patent 3,008,847, assigned to Du Pont, covering #49 Primer and the combination of this primer and a more permeable topcoat such as #50 White acrylic latex house paint.

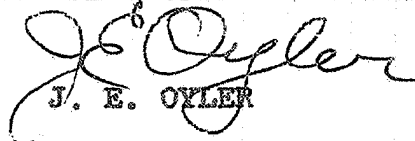
CONFIDENTIAL INFORMATION:

There are no unusually confidential disclosures in this release letter.

FORMULA CARDS:

Formulas for 603-944 and its base 37-W-91166 are attached to copies of this letter for Production and Research personnel receiving this letter.

MARSHALL DEVELOPMENT LABORATORY


J. E. OYLER

JEO:jzs
8/13/63

APPROVED: 
APPROVED: _____

DATE: 11/14/63
DATE: _____