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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Progress Report

GE-668-D. SUBSTITUTION OF CPC for PMA.

Period Covered 7/11/50 to 10/25/50

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Progress Report

GE-668-D. SUBSTITUTION OF CPC FOR PMA.

7/11/50 to 10/25/50

CHARGE: 1100-11-20
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SUBMITTED BY: O. J. C. Klein DATE SUBMITTED: 10/25/50

APPROVED BY: A. A. Brizzolara DATE ISSUED: 11/1/50

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INTRODUCTION:

The proposal has been advanced that GE-668-D, a lake of PMA Green and Benzidine Yellow, might be matched at lower cost by substituting CPC Blue for the PMA component. This report gives the results of some preliminary matching work.

SUMMARY and CONCLUSIONS:

1. Several fair matches for GE-668-D were formulated, using CPC Blue and CPC Green instead of the PMA component.

2. A closer match is possible.

3. At September 1, 1950 replacement costs, the most expensive match for GE-668-D is comparable to GE-668-D in ingredients costs. More extended products are cheaper.

4. Additional laboratory work is necessary to formulate an exact match.

5. Although this preliminary work was done by "paste mixing", it may be found more economical to use the "vat slurry" method.

DETAILS:

Matching work was begun by rubout, using GT-674-D, BT-284-D, and YT-564-D. Separate inks were made of each toner. Extenders in the proportions present in GE-668-D were ground in Varnish Drier on a roller mill. These elements were combined to give a fair masstone match for GE-668-D. CPC Blue only, with YT-564-D, was too dull, so that the use of CPC Green was necessary to give sufficient intensity. A larger scale preparation, using N-codes corresponding to the CPC toners, and benzidine yellow presscake, proved to be quite close to GE-668-D when tested in crayons, though somewhat yellower, stronger, and more intense. Ingredients cost, however, based on March 1, 1950 replacement costs, was unattractively high.

However, the extra strength led to the making of a series in which the extender, exclusive of the TiO2, was progressively increased to an ultimate 50% increase in batch size. The ratio of TiO2 to colored pigment was kept equal throughout, to maintain equal opacity. The effect of a small amount of "Blancol" was also tried on the most extended formulation.

All these products appear to be reasonably good matches for GE-668-D. The test in crayons is not very reproducible, and for this reason differences are not distinct. All seem a little too yellow, and the addition of "Blancol" seems to give a little strength advantage.

The ingredients cost of the most expensive formulation is comparable to that of GE-668-D when September 1, 1950 replacement costs are used. The more extended products are cheaper.

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Table I gives the compositions of the various trial matches, on a percentage basis, together with the ingredients cost (minus package), based on September 1, 1950 replacement costs.

TABLE I

		A	B	C	D	D
CPC Blue	N-623	1.2	1.1	1.0	0.8	0.8
CPC Green	N-624	8.2	7.1	6.6	5.5	5.4
Benzidine Yellow	YT-571-P	4.0	3.5	3.2	2.7	2.7
"Ti-Pure" FF	N-483	7.6	6.6	6.1	5.1	5.0
Clay	N-627	65.9	68.1	69.4	71.7	71.4
Blanc Fixe	N-65	13.1	13.6	13.8	14.3	14.2
Blancol						.5
Ingredients Cost $/100 lbs.		22.74	20.21	18.88	16.29	16.28

Ingredients Cost of GE-668-D, $22.53/100 lbs.

REFERENCES:

N.B. 1313, Expts. 57 & 58

O.J.C.Klein/MPH
10/24/50

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