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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report
(Laboratory)

PROCESS STUDY FOR THE MANUFACTURE OF
STANDARD R-545-D (PHOA → NBS ON WHITING)

Period Covered

JUNE 8, 1950 - OCTOBER 6, 1950.

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NEWARK PLANT

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Final Report
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Title: PROCESS STUDY FOR THE MANUFACTURE OF
STANDARD RM-545-D(PNOA → MBS ON WHITING)

Period Covered: June 8, 1950 - October 6, 1950.

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INTRODUCTION

It is generally recognized that the usual process variables designed to produce specific tinctorial effects can also influence other properties. However, the extent to which these non-tinctorial characteristics are affected is not always known. For example, certain Congoleum Nairn shipments of RM-545-D (PNOA → NBS on Whiting) which were considered to be satisfactory material by the ordinary rubout method were found to be poor in texture as judged by the customer's special method of testing.

The purpose of the work described in this report was to determine the effect of the major variables in the "C" process on texture.

SUMMARY AND CONCLUSIONS

It appears that greater masstone depth than RM-545-D, SD-48530, cannot be obtained without incurring poor texture which is evident by low strength when tested by Congoleum Nairn's rubout method.

Para soap was found to promote coupling and to improve both the texture and the bleed resistance. Adding the para soap to caustic soda solution prior to the NBS addition results in more rapid and more complete solution.

Under certain conditions, MNPA can be used as a blue tinting variable without affecting texture or bleed.

DISCUSSION OF RESULTS

All of the studies were conducted on a laboratory basis using the RM-545-D(C) process and the results were evaluated by the Armstrong (TF-5007-1) and Congoleum Nairn (TF-5002-1) rubout methods. Strength as developed by the latter test was used as a measure of texture.

It was observed that lowering the amount of acetic acid used in the precipitation of NBS prior to coupling gave a darker masstone and poorer texture. Doubling the para soap resulted in a slight loss of depth, but also gave slightly better texture. Combining these two variables in a single formula gave a fairly close masstone match to standard without loss of texture. However, a yellow tint also resulted. Attempts were then made to develop blueness by substituting PNOA with MNPA in small amounts, but poor texture and dark masstone were obtained at this high caustic level.

MNPA substitution on a normal caustic ("C" process) basis can be used effectively as a tinting variable in amounts up to 6% with resultant slight increase in depth and no effect on texture.

Darker masstones and good texture were sought by decreasing the amount of acetic acid on a 5% MNPA substituted "C" formula. Some depth was gained in this way but it was not possible to obtain a darker masstone than standard without affecting the texture adversely.

NASD and NOL in 10% amounts were ineffective as a source of additional depth. However, both gave slightly better texture and a yellow tint when used with the normal amount of caustic.

The results obtained using the different modifications of the "C" process are outlined as follows:

① #RM/Batch	RM-545-D(C) (1349-34A)	Double Para Soap (1349-34B)	High Caustic; Double Para Soap (1349-38C)	5% MNPA (1384-3A)	5% MNPA; Double Para Soap (1384-3B)
PNOA	510	510	510	485	485
MNPA	0	0	0	25	25
NaOH	243	243	243	243	243
Para Soap	60	120	120	60	120
NBS	954	954	954	954	954
HOAc	365	365	182.5	365	365
NaOAc	610	610	250	610	610
(NaOH)	298	298	122	298	298
(HOAc)	447	447	183	447	447
Yield	5810	5825	5950	5825	5825
Tinctorial					
Results vs					
RM-545-D,					
SD-48730					
	MT Str. Hue	MT Str. Hue	MT Str. Hue	MT Str. Hue	MT Str. Hue
Armstrong					
(TF-5007-1)	lt. vvs =	lt vvs =	= = =	yel sl. =	blue lt =
	wk	wk		lt.	blue
Congoleum					
Nairn					
(TF-5002-1)	= vs	sl. vs.	=	yel =	blue =
	yel.	str. yel			

EXPERIMENTAL DETAILS:

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