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KREBS PIGMENTS DEPARTMENT
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NEWARK, NEW JERSEY

KN-48-20

NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

RT-573-D
DARK TYPE RT-530-D FOR VALSPAR CORP.
META-NITRO-PARA-TOLUIDINE → "NAPHTHANIL" BS/BON

Period Covered: November 1947 to February 1948

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DATE: 10/18/48

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Final Report

Title: RT-573-D
Dark Type RT-530-D for Valspar Corp.
Meta-nitro-para-toluidine → "Naphthanil" BS/BON

Period Covered: November 1947 to February 1948

SUBMITTED BY: A. D. Mills A. D. Mills DATE SUBMITTED: 10/11/48

APPROVED BY : A. A. Brizzolara 10.17.48 DATE ISSUED: 10/18/48

RT-573-D

DARK TYPE RT-530-D FOR VALSPAR CORP. MNPT → 90% N-BS/10% BON

INTRODUCTION

Valspar Corporation had utilized RT-530-D purchased in the form of lacquer chips from the RBH Dispersions Company. For economy reasons Valspar decided to make their own dispersions of dry pigments in lacquer and RT-530-D was found to be too light for the Hudson Motor Car Maroon. One lot of Harmon's MT-1 was found satisfactory for this purpose and served as standard in this work. A brief laboratory study was made to increase the depth of RT-530-D, maintaining intensity and its desirable working properties.

SUMMARY AND CONCLUSIONS

A very limited variable study was made on RT-530-D (A) covering primarily the use of first and second component accessory agents. It was found that the substitution of "Lithosol" Acid BON for 10% of the "Naphthanil" BS gave a product of approximately equal depth to Harmon's MT-1 with good intensity but at a sacrifice of the relatively good bleed of RT-530-D. To insure good dispersion, this product had to be high speed pulverized.

After viewing panels, the customer placed a trial order for 250#. The semi-works and plant development will be covered separately.

Meanwhile further work was carried on in the laboratory in an attempt to regain the better bleed of RT-530-D maintaining the dark masstone. This work will be covered in a report on ART-590-D.

GENERAL DISCUSSION

Optimum depth of masstone was obtained with the 10% substitution of BON and further increases tended to light the color. This variable can be used for shading purposes by reducing the amount of BON and replacing with "Naphthanil" BS if the color is too dark.

The accessory agents used were beta-hydroxy-naphthoic acid (BON), ortho-chlor-para-nitroaniline (OCPNA), 5 nitro-2-amino anisole ($5NO_2$-$2NH_2$-An) and meta-nitro-para-anisidine (MNPA). Ortho-chlor-para-nitroaniline and 5 nitro-2 amino-anisole, when used in amounts up to 10% of the MNPT on the original RT-530-D formula, did not affect the tinctorial properties.

Further increases in depth of RT-573-D may be obtained by using meta-nitro-para-anisidine as an accessory agent, or increasing the caustic soda in the coupling by eliminating the soda ash. It should be noted that both these variables give dullness also. B Wood Rosin may be substituted for the napthenic acid in RT-573-D to increase the depth slightly.

EXPERIMENTAL DETAILS

The laboratory samples were submitted to the paint laboratory for evaluation in the Valspar lacquer vehicle. The results are recorded in the Paint Laboratory Memo's #148 of 12/31/48 and 1/26/48 submitted by W. O'Neill.

The lacquer grinding formula is given below:

	Pigment	8.7%	70.0#
(1)	1/4 sec. N.C. sol'n.	28.7%	28.6 gal.
(2)	1/2 sec. N.C. sol'n.	30.1%	30.4 gal.
	#15 Blown Castor Oil	8.9%	9.0 gal.
	Dibutyl phthalate	1.9%	1.8 gal.
(3)	Mixed Solvent	21.7%	24.6 gal.
		100.0%	100.0 gal.

G.W. = 8.05 lbs./gal.

(1) 1/4 sec. N.C. sol'n.

1/4 sec. 65% N.C.	30%
(3) Mixed Solvent	70%
	100%

(2) 1/2 sec. N.C. sol'n.

1/2 sec. 65% N.C.	27%
(3) Mixed Solvent	73%
	100%

(3) Mixed Solvent

Butyl Acetate	50%	48.4 gal.
Butanol	15	15.6
Ethyl alcohol	10	10.5
Methyl ethyl ketone	15	15.8
Toluene	10	9.8
	100%	100.0 gal.

REFERENCES

Technical Service Report #73 of J.B. Callaway on 10/1/47
" " " #87 of " on 11/26/47

Work Request N-102 11/3/47

Paint Laboratory Memo #148 of W. O'Neill 12/31/47
" " " #148 " " 1/26/48

Notebook #1162

Exp.	Description
27	Substitution of BON in 5, 10, 15 & 20% amounts
28	OCPNA and $5NO_2$-$2NH_2$-An for MNPT in 5 & 10% amounts
29	Increase Na_2SO_3-decrease NaOH; use of B Wood Rosin
33	MNPA in 2,5 & 10% amounts in 1162-27B formula.
35	Substitution of BON in 8,10, and 12% amounts.