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PIGMENTS DEPARTMENT
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NEWARK, NEW JERSEY

NEWARK PLANT
CHEMICAL DIVISION - COLORS

FINAL REPORT

TITLE: TOLUIDINE YELLOW YP-440-D
(meta nitro para toluidine-acetoacetanilide & rosin)

Period Covered

DECEMBER 1950 - MARCH 1951

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

FINAL REPORT

Title: TOLUIDINE YELLOW YP-440-D
(meta nitro para toluidine-acetoacetanilide
& rosin).

Period Covered: December 1950 to March 1951.

Charge: A-IC-46

SUBMITTED BY: G. GRIMM

G. Grimm
9-22-52

DATE SUBMITTED: 7/30/52

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9/11/52

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INTRODUCTION

A brief study was undertaken in the laboratory to determine the effect of the YP-649-D type laking procedure when applied to CYP-440-D. In the YP-440-D process, sodium rosinate was added to the sodium acetate buffered aceto acetanilide suspension prior to coupling. During the coupling, acid was liberated, precipitating free rosin. Therefore, there was no rosin in solution to be precipitated as barium rosinate when the coupled slurry was treated with barium. The free rosin was believed to contribute to poor texture.

The development of rosinated bensidine yellows, YL-647-D and YP-649-D, led to a different laking technique wherein the coupled slurry was neutralized before the sodium rosinate was added to the vat. By operating in this way, and subsequent treatment with a heavy metal salt, the rosin was precipitated as a metallic rosinate. The application of this laking procedure to YP-440-D was anticipated to yield products having better texture and possibly other advantageous properties such as reduced fire hazard.

As the work progressed, consideration was given to the development of a low cost rosinated toluidine yellow having YT-445-D (MNPT-AAA) properties.

CONCLUSION

The light, green, intense masstone and better texture of the product obtained by application of the YP-649-D laking technique is offset by greater opacity and slightly lower strength. The product is intermediate between YP-440-D and YT-445-D in most properties and probably would be of no interest to customers who buy YP-440-D for its transparency.

Efforts to duplicate the tinctorial properties of the toner, YT-445-D with a 70% lake have been unsuccessful because of unattractive red, dark, dull, transparent masstone. It is possible that a surfactant may be found to influence the masstone, however, the search would be costly.

DISCUSSION

The application of the YP-649-D type laking procedure to the CYP-440-D process resulted in greener, lighter, more intense masstones, and more opaque undertones. The modified product contained 20% barium rosinate and 10% free rosin, compared with 30% free rosin in CYP-440-D. The ink properties demonstrated a very slight improvement in body, length, and flow with some improvement in texture (7-1/2 vs 6-1/2 at 5 passes) compared with the laboratory control.

Coupling in the presence of varied amounts of Blancol or Aerosol OT had relatively little effect on strength or opacity but increased amounts of Blancol caused a progressive reddening and darkening of the masstone. Variation in amount of rosin demonstrated the 30% level to produce the optimum toner strength.

For further details see tabulation.

EXPERIMENTAL DETAILS

Refer to Notebook 1317 Exerpts 7,8,9,10.

COMPOSITION

INK PROPERTIES

	Ba	Free Rosin 32% 9%	Separation		Hegman Texture			Consistency		Flow
			1T	2T	1T	2T	5T	Body	Length	
1317-7A	YP-440-D Lab Control		6	10	4-1/4	6-1/2	6-1/2	s heavy	vs short	none
1317-7C	Modified Laking		9-10	10	6-1/2	7	7-1/2	vs heavy	vs long	1
Procedure										
YP-440-D	SD 47679	Nil	6	10	4-1/4	6-1/4	6-3/4	heavy	vs short	none
YT-445-D	SD 365	Nil	10	10	8	8	8	1	1	none

(10=perfect) (8=perfect)

Rubout Results

	MT	UT	Tint	Str
1317-7A vs YP-440(SD 47679)	light	vs lt, vvs opaque	equal	vvs weak
1317-7C vs "	gr, lt, int	green opaque	equal	s weak
1317-7A vs YT-445 (SD 365)	red, dk, dull red, trans	red, dk, dull red, trans	green	equal
1317-7C vs "	red, dk, dull red, trans	red, dk, dull red, trans	green	s weak