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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

TOLUIDINE RED, MEDIUM SHADE, ART-620-D
EVALUATION OF SAMPLES OF CALCO'S "LITHOSOL"
SCARLET BASE M (MNPT) AND ORCHEM CURRENT
PRODUCTION

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INTRODUCTION:

In the course of variable studies to improve the masstone depth and intensity of RT-386-D, (MNPT → BN) a second series was run on competitive samples of MNPT. The samples used in this study were:

Orchem lot 875 - control.
Calco L-6907 - supplied by Orchem.
Calco D-6636 - from manufacturer.
Orchem lot 191 - supplied by the plant.

In the earlier report (KN-48-37) it was shown that Calco and Sherwin-Williams MNPT gave an inferior product with the RT-620-D [(E)RT-386-D] formula. In the present study the intent was to determine if the Calco MNPT obtained from the manufacturer showed any variation from the Orchem Calco sample; and also to compare the effect on the pigment masstone of Orchem's lot 875 and lot 191.

At one time the MNPT manufactured by Orchem contained 0.06% of Duponol WA in order to improve the wetting properties. Then Orchem switched to MNPT containing 0.1% Product BCO. Due to adverse reports from the trade, Orchem recently resumed production of Duponol-treated MNPT, based on standard lot 883, beginning with lot 190. Lot 875 is presumably the early Duponol-treated MNPT, whereas lot 191, taken from a plant drum, represents current Orchem production. No MNPT containing Product BCO has been evaluated.

CONCLUSIONS:

The Calco sample of MNPT supplied by Orchem showed no advantage over Orchem's lot 875. However, the Calco sample provided by the manufacturer gave a definitely inferior product with the (A)RT-620-D formula, as reported earlier, indicating considerable variation in that manufacturer's production. The Orchem sample taken from a presumably typical lot, lot 191, gave a product inferior to that produced from lot 875, indicating a considerable difference between old and current production. Lot 191, et sequitor, which present Toluidine production is utilizing, appears to be at a definite disadvantage to lot 875, both tinctorially and in ease of plant utilization.

DISCUSSION OF RESULTS:

The experiments were conducted on exactly the same modified plant formula [(E)RT-386-D] as the earlier study. They were run on a 0.2 mol basis. None of the samples offered any serious operating difficulties, and there were no differences in the yields obtained. The diaze solution was not clarified before coupling.

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The following observations were made during the run:

	A Orchem Lot 875	B Calco Lot 6907	C Calco D-6636	D Orchem Lot 191
Slurrying of MNPT into HCl	slow wetting	immediate wetting	immediate wetting	very slow wetting
Reaction with sulfamic acid	slow, long-lasting foam	fast foam dissipated very quickly	fast	slow, long-lasting foam
Color of diazo	red	red	red	yellow
Nature of diazo	cloudy some sediment	clear relatively free of sediment	clear	cloudy considerable sediment

Fast wetting up is characteristic of water purified MNPT, suggesting that Calco may be using this new technique. Contrary to the general tendency of diazotized MNPT to darken on exposure to light, Orchem lot 191 remains yellow over the addition period. This has been noticed in other runs with it. Lot 191 is also distinguished by its very slow wetting property and considerable residue after diazotization. The sediment appears to be due to incomplete diazotization. The plant has also observed that current supplies of MNPT leave more undiazotized MNPT than usual on floor of diazo vat after coupling.

The two Calco samples are identical in their diazo behavior. The two Orchem samples are much different in their behavior. None of the samples show any over-all improvement over lot 875.

Rubout Results:

	Orchem Lot 875	Calco L-6907	Calco D-6636	Orchem lot 191
versus:				
Orchem lot 875 (MT)	-	vvs lt. yvs dull	lt. dull	lt. dull
Orchem lot 875 (XT)	-	vvs blue	str. yel.	str. yel.
Calco L-6907 (MT)	-	-	lt. dull	lt. dull
Calco L-6907 (XT)			str. yel.	str. yel.
Calco D-6636 (MT)	-	-	-	vs. dark yvs. dull
Calco D-6636 (XT)	-	-	-	tr. weak tr. dull

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	Orchem Lot 875	Calco L-6907	Calco D-6636	Orchem Lot 191
RT-386-D Std.(MT)	lt.int.	lt.int.	v.lt.	v.lt.
RT-386-D Std.(XT)	s.weak blue	vs.weak blue	str.yel.	str.yel.
RT-620-D(89319)(MT)	lt.	lt.,tr.dull	v.lt.,dull	v.lt.,dull
" " (XT)	str.yel.	str.yel.	v.str.yel.	v.str.yel.

(RT-620-D vs RT-386-D is lt.,int. in MT, weak,blue in tint)

REFERENCES:

N.B. 1217 Exp. 32, 46
Research Report KN-48-37

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