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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT
Progress Report

Evaluation of "Naphtol" AS-KR Supra

March - June, 1944

Period Covered:

FILE:

7-10-44

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Progress Report

Title: Evaluation of "Naphtol" AS-KH Supra

Period Covered: March - June, 1944.

SUBMITTED BY: *J. H. Cooper*
J. H. Cooper

DATE SUBMITTED: 7-10-44

APPROVED BY: *A. M. Erskine 7/15/44*
A. M. Erskine

DATE ISSUED: 7-15-44

INTRODUCTION:

Experience in this laboratory during the past few years has indicated that monoazo "Naphthanil" type pigment dyestuffs containing a methyl or methoxy group in the ortho position of the anilide portion of the molecule possess markedly improved lightfastness and durability. The implications and possible extensions of these observations on theoretical grounds are discussed elsewhere (Reference 1).

General Dyestuff Corporation's "Naphtol" AS-KR Supra has been identified as the cresidide (2-methoxy-5-methyl-anilide) of beta-oxy-naphthoic acid (Reference 2). It is thus isomeric with the previously known "Naphtol" AS-LT (2-methyl-4-methoxy anilide of beta-oxy-naphthoic acid). Although the "Naphtol" AS-KR is expensive (normal selling price \$3.50/lb.) and is currently not available, nevertheless in view of its interesting chemical structure and the possibility of obtaining pigments of good durability therefrom, a cursory survey of couplings with common first components containing no solubilizing groups was made.

SUMMARY & CONCLUSIONS:

Attempts were made to prepare pigment dyestuffs by coupling the subject second component under both acid and alkaline conditions with diazos prepared from the following first components:

1. para-nitro-ortho-toluidine
2. para-nitro-ortho-anisidine
3. meta-nitro-para-toluidine
4. para-chlor-ortho-nitro-aniline
5. meta-nitro-para-anisidine
6. 2,5-dichloraniline

None of the pigments prepared by acid couplings was of interest. Of the alkaline coupled products those prepared from meta-nitro-para-toluidine and para-nitro-ortho-toluidine exhibited interesting tinctorial properties (particularly in nitrocellulose lacquer), and lightfastness of both products was found to be very good by fadeometer tests. The former is a rather attractive red, being quite similar to Pigment Scarlet RL-211-D and rather close to "Raritan" Red RT-505-D in lacquer. The latter is a light maroon approximating the depth of RT-347-D in lacquer. Both products show definite bleed in linseed oil by a white overstripe test.

Two large samples, sufficient to permit complete evaluation including durability studies by the Paint Laboratory, were

prepared. These are:

K-2031 : meta-nitro-para-toluidine → "Naphtol" AS-KR,

and

K-2032 : para-nitro-ortho-toluidine → "Naphtol" AS-KR.

EXPERIMENTAL DETAILS:

Notebook #952 - Expts. 39, 40, 41, 42.

Notebook #1106- Expts. 1, 2

REFERENCES:

1. Color Research Project CR-196.
2. Letter R.A. Shimp (Tech.Lab.) to J.H.Cooper, 3/16/42.