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KREBS PIGMENTS DEPARTMENT
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NEWARK, NEW JERSEY

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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT
Final Report

Olive Drab Camouflage Net Coatings.
Use of Organic Blue Pigments.

December 21, 1943 to April 30, 1944.

Period Covered:

FILE:

173.2-1

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Final Report

Title: Olive Drab Camouflage Net Coatings.
Use of Organic Blue Pigments.

Period Covered: December 21, 1943 to April 30, 1944.

SUBMITTED BY: J. B. Callaway

DATE SUBMITTED: 5-15-44

APPROVED BY: Alfred Siegel 6/17/44

DATE ISSUED: 6-7-44

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EXPERIMENTAL DETAILS:

Notebook 971 Expts. 36, 38, 40, 43.

See memorandum for files, "Predicting Infra-red Reflectance of Camouflage Finishes", January 3, 1944 by the writer.

Letter A. M. Hyskine to G. A. McCorkle, April 6, 1944, "Camouflaged Net Coatings. Methylene Blue Bentonite Lake".

FORMULA SHEET



COLOR CODE DATE 5-15-44 NAME Blue Lake
 OBJECT Preparation of methylene blue-bentonite lake.
 BASED ON Lab. procedure 847-35F
 BATCH SIZE-MOLS. BATCH No. OF "K" SAMPLE 971-43

K-2023(Exptl)

LBS. OR GMS.	MATERIAL	100% WT.	GAL.	C. C.	MANIPULATION	Nf
					Charge into Day Mogul vacuum mixer	
1500	Alcohol (1600cc Formula 23A, s.g. 0.815)				Add in 5-10 minutes	
1000	Dispersing Clay B "as is"				and agitate 30-40 minutes to a uniform ⁴⁷⁷ paste. Add, dissolved separately:	
1020	Alcohol (1250 cc Formula 23A)				Add in 2-3 minutes with agitation	
40	Methylene Blue ZX, D-4873, "as is"				Heat to boil and boil 15 minutes. 359 Allow to cool to $\pm 75^{\circ}\text{F}$. Decant from undissolved residue.	
					Add dye solution to clay - alcohol slurry in 2-3 minutes. Agitate 30 minutes, "spotting" on paper at intervals. Continue agitation until clear spot (i.e. no bleed) is obtained. Filter.	
					<u>Do Not Wash</u>	
					Dry at 140°F .	
					"Mixing-grind" in Mikro Pulverizer.	

Calculated Analysis

Blue Dye	3.7%
Dispersing Clay	<u>96.3</u>
	100.0%

PACKAGE 250 LBS. PER "IT" bbl. COST GROUP TYPE COLOR
 GOAL YIELD 915

SIGNATURE J.B. Callaway

NOTES ON K-2023 (EXPERIMENTAL)

1. The formula was set up to illustrate the possibility of making this, or similar type lakes, in a vacuum mixer. The vacuum is required to draw off objectionable alcohol fumes.

The Day Mogul mixer used has a capacity of 2-1/2 gallons. This is large enough to accomodate material for approximately three pounds yield.

2. The procedure is based on the laboratory method 847-35F with quantities of ingredients increased ten times. It was necessary, in the present study, to triple the quantity of alcohol used in 847-35F in attempting to dissolve the dye but even after prolonged boiling a considerable quantity remained undissolved. The dye solution was decanted from the residue and the latter discarded in the present formula.

K-2023 is light in masstone, weak in undertone and tint by rubout comparisons versus 847-35F. The weakness probably is due to the lower dye content in K-2023. Study should be made of means of completely dissolving the dye before adding to the bentonite-alcohol slurry. Heating the dye-alcohol mixture, possibly under slight pressure in the mixer, should be tried, the bentonite-alcohol slurry then being added as a second step.

3. Satisfactory mixing and laking apparently took place in the vacuum mixer under the conditions used. The alcohol filtrate was water clear. The dried filter cake, which was soft and friable, was given a mild "mixing-grinding" for the purposes of obtaining a uniform powder.

4. Formula 23A alcohol contains 10 gallons of acetone to 100 gallons of ethanol, 190 proof. The specific gravity is 0.815 at 15.6°C in vacuum.

5. The possibility of obtaining a dry cake in the mixer should be investigated. A suggested procedure is to decant off supernatant solvent and dry the wet cake by application of heat and vacuum while continuing agitation.

JBC:RX

J. B. CALLATAY
5-17-44