Copy No. 1

E. I. DU PONT DE NEMOURS & COMPANY
PIGMENTS DEPARTMENT
256 VANDERPOOL STREET
NEWARK, NEW JERSEY

NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

Dry Pigment Green B Toner K-1913.
Semi-Works and Plant Development.

Period Covered: January 1943 - October 1944.

FILE: 223.71

DATE: 11-19-45

NJS699

Serial No. KN-45-68

Copy No. 1

Copy to:

#1 - Numerical File
2 - Research Office (223.71)
3 - Library File (223.71)
4 - #10 Building File
5 - Imperial Chemical Industries, Ltd.
6 - " " " "
7 - " " " "
8 - D. R. Dawson, Newark Rec'd 11-26-45

NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Final Report

Title: Dry Pigment Green B Toner K-1913.
Semi-Works and Plant Development.

Period Covered: January 1943 - October 1944.

SUBMITTED BY: V. Chalupski DATE SUBMITTED: 10-29-45

V Chalupski Nov. 19, 1945

APPROVED BY: V. Chalupski DATE ISSUED: 11-19-45

INTRODUCTION

The K-1913 process is based on a laboratory study carried out in 1942 and 1943, discussed in Research Report KN-44-55. By this procedure, a dry toner can be made which is equal in rubout strength to the then current competitive product. The process calls for the use of sodium oleate instead of para soap, with an increase in pH of the bisulfite ester and an adjusted amount of copperas. The effect of these variables is discussed in detail in the laboratory report.

The K-1913 process was carried through to plant production, but was never standardized, and was finally abandoned because quality was not up to the best of competition.

SUMMARY AND CONCLUSIONS

Early in 1943 a preliminary semi-works batch was made using sodium oleate, but without upward adjustment of the pH of the bisulfite ester. This batch, lot 6310, was quite dull in tint, both by rubout of the dry color and brushout of the pulp. Later, a series of four semi-works batches was made, including a control batch, and batches made with sodium oleate plus increase of pH of the bisulfite ester from 6.1 to 7.2. Various amounts of copperas were tried. The two batches which were best in quality as dry toners were mixed and set up as a working standard; this was lot 6537, with which subsequent plant batches were compared. Batches made by the new toner process were converted in the semi-works into GE-496-D and GE-578-D. No advantage in quality was seen in these lakes.

During the period July 26 to September 17, 1944, seven plant batches were made, based on the best semi-works procedure. There was some uncertainty as to the actual amount of sodium oleate used, because of non-uniformity and unreliable analytical data. In two of the batches, the amount of sodium oleate was varied. Results of the entire series were not at all consistent, varying from equal to the semi-works standard down to very weak. Due to lack of time it was not possible to determine the causes of these variations. All of the material made was sold (to Imperial), the war time demand for the color being such as to apparently make quality considerations unimportant.

EXPERIMENTAL DETAILS

See DSN-45-18

Semi-Works Batches:

Finished assPulp	Formula	Finished as dry toner	Converted to GE-496-D	Converted t GE-578-D
6481	Control Std.GT-68-P	lot 6488	lot 6501	lot 6507
6478	reduce amt. of copperas, pH of bisulfite ester to 7.2, use sodium oleate	-	-	-

Semi-Works batches (Cont.)

Finished as Pulp	Formula	Finished as dry toner	Converted to GE-496-D	Converted to GE-578-B
6474	ester pH 7.2, use sodium oleate	lot 6490	lot 6487	lot 6506
6486	similar to 6474, copperas adjusted	" 6498	" 6502	" 6508

Other batch numbers - see notebook for details.

6310 Jan. 18, 1943 - first trial of sodium oleate formula.

6537 Mix of 6490 and 6498 (see above). This was set up as the working standard for KG1913.

6733 Attempt to check 6486. Error in manipulation.

Plant batches:

17400	July 26, 1944	Semi-works 6486 - 6498 formula.
17680		Like above, but reduce amount of sodium oleate.
17798		Like 17400
17921		" "
18055		" "
18056		" "
18391		Like above, but increase amount of sodium oleate.