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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

CENTRAL RESEARCH DEPT.

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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

CHROME GREEN TEXTURE STUDIES

PROJECT 195

FEBRUARY 1942 - NOVEMBER 1945

CHARGE: A-IIC-195

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INTRODUCTION

This report covers laboratory and semi-works study directed toward improvement in ease of dispersion of Chrome Greens.

SUMMARY AND CONCLUSIONS

Several color manufacturers had developed soft textured Chrome Greens equal to our original "Hy-Cap" products. Development of the super-textured Sealed Vat Iron Blue (K-1661) did not directly produce the expected improvement in chrome green texture since greens prepared in the usual way (by slurry mixing) were considerably inferior to both the shading yellow and the iron blue components (KN-41-84 and 42-94).

During the course of study under this project it was established that a slurry-mixed chrome green, for attainment of super-texture equal to that of its components, requires treatment with a slightly (but definitely) greater quantity of surface active agent than would be predicted from a knowledge of its yellow-blue ratio and of the quantities of agent which produce the desired textures in the separate components.

Following this lead, slurry mixed greens of the goal texture (equal to Chrome Yellow Y-405-D) were prepared in the laboratory using plant manufactured blue (K-1661) and yellow (Y-493-D).

The semi-works phase of the development study of such specially treated products was also satisfactorily completed, G-550-D line products of the desired texture were prepared repeatedly and submitted to intensive evaluation.

Plant standardization was undertaken. Following exclusive use of the sealed vat blue liquor process K-2481 for a period of several days, eight batches were made but the program was abandoned because of change in priority of problems, and anticipated development of dry-blending processes for the manufacture of greens, which would obviate the need for the improved quality slurry-blending procedure. The batches were not evaluated.

PATENT SITUATION

The study appears to have developed no aspects of patentable novelty.

DISCUSSION

Typical semi-works products compared with standards as follows:

	Wedge Grit Ratings One Loose Pass
Semi-Works G-550-D	17+
Standard G-550-D	14
Semi-Works G-553-D	17
Standard G-553-D	12

Since the K-1661 blue was substantially equal in texture to Y-493-D, (considerably softer than B-216-D) the experimental greens exhibited very little drop in texture with increasing blue content.

Petronate was established as the most effective of the commercially available agents. It had no adverse effect on color, lightfastness, or paint properties such as consistency, reactivity, drying and hardness. Florida exposure evaluations also indicated satisfactory quality. Petronate was added to the yellow slurry just prior to shading with untreated blue liquor, consequently the treatment would in no way interfere with continuous manufacture, if this technique is adopted for making chrome greens.

The modified process also improved the texture of greens made from B-216-D (rather than K-1661) but such products were still short of the desired goal.

The experimental products were similar to, but no worse than, standard "Hy-Cap" greens with respect to dusting characteristics. The latter property was simultaneously studied under Project A-IIC-214.

REFERENCES:

Laboratory study prior to the period covered by the A-IIC-195 project has been reported in KN-41-64 and KN-42-94.

Study covered by the project has been completely reported in the four successive parts of the A-IIC-195 project. Laboratory details are recorded in Notebook 1096, semi-works and plant details in DSN-46-34.

New Jersey and Florida exposure evaluations of semi-works products are reported in S-7000, those of laboratory products in S-6863.

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