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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

Y-467-D, FINAL PLANT DEVELOPMENT.

Period Covered:

JANUARY 1943 - OCTOBER 1943.

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Final Report

Title: Y-467-D, FINAL PLANT DEVELOPMENT.

Period Covered: JANUARY 1943 - OCTOBER 1943.

SUBMITTED BY: J. R. BORST

DATE SUBMITTED: 5-19-44

APPROVED BY:

V. CHALUPSKI

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V. Chalupski June 5, 1944

INTRODUCTION

The final plant development work on the Y-467-D type of zinc yellow consisted of the following miscellaneous matters:

1. Decreased amount of treating agent (Wecoline) to meet the "combined water" specification of the Bureau of Aeronautics,
2. Decreased chromate,
3. Production as a variation of Y-541-D, and
4. Manufacture on the Y-544-D formula; the last three problems being undertaken for increased economy.

The previous work on this type of zinc yellow was reported in KH-43-12.

SUMMARY AND CONCLUSIONS

1. Decreased Treating Agent

The Bureau of Aeronautics specifications for zinc yellow stipulated that the pigment should contain a maximum of 8 percent "combined water". The treating agent in Y-467-D actually decomposed in the determination of combined water, thereby throwing this value above the specification limit. The treating agent (Wecoline) was decreased from its original value of 3 percent to 1.7 percent in the replacement formula K-1850 and this change permitted certification of Y-467-D.

2. Decreased Chromate

The lower amount of treating agent not only enabled Y-467-D to meet specifications but also reduced its cost slightly. A further step in this direction was attempted by a chromate reduction in the formula. About thirty batches were struck with an approximate 5 percent decrease in the amount of chrome liquor. This change in formulation still allowed the zinc yellow to meet the sulfate and chromate specifications of a maximum of 3 percent SO_3 and a minimum of 41 percent CO_2 . A mix of several plant batches of low-chrome material was actually made for a new standard, but this was not adopted because of declining interest in this type of zinc yellow.

3. Production on the Y-541-D Formula

The Y-541-D formula was originally set up as a low-chrome modification of Y-232-D. This formula was never actually employed for the production of Y-232-D since material made by it contained excessive amounts of sulfate. An attempt was made to strike Y-467-D on the Y-541-D formula with a slight increase in chrome to reduce the sulfate content to below 3 percent SO_3 . This formulation was

was attempted because it gave potentially greater savings than the regular X-467-D formula with decreased chrome. Of the five batches struck on the formula, however, two contained too much sulfate and no further work was undertaken.

4. Production on the X-544-D Formula

The X-544-D type of zinc yellow is made from zinc oxide rather than zinc sulfate like X-467-D. It contains about 2 percent SO_3 since sulfuric acid is used in its manufacture. Two batches of this were made and treated like X-467-D, one being vat washed and the other centrifuged. This material was satisfactory when tested in the AN-TT-P-656a primer formulation. However, no further work on this formula, which offered a substantial cost reduction, or any other X-467-D development was undertaken because of the trend toward using the low-sulfate type of zinc yellow (X-539-D) for all purposes.

EXPERIMENTAL DETAILS

See DSN-44-6.