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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

SICK LIST STUDY OF RT-435-D

Period Covered: May 1946 - June 1946.

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Progress
Final Report

Title: SICK LIST STUDY OF RT-435-D

Period Covered: May 1946 - June 1946.

SUBMITTED BY: M. G. Taber

DATE SUBMITTED: 7/9/46

APPROVED BY : J. O. Morrison

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INTRODUCTION

Recent plant production has been very dull in masstone. Raw material tests made in March indicated the PNA (N-37) to be satisfactory. A Plant Assistance Work Request was therefore issued and study was undertaken in the semi-works.

A modified laboratory process was tried in the semi-works during the course of the study.

SUMMARY AND CONCLUSIONS

Six semi-works batches were made, including one made on the laboratory experimental formula 1118-24B. In all cases the excess nitrite in the diazo was either completely destroyed or, as per K-1929, almost completely destroyed. None of the batches was dull versus standard.

The experimental formula which uses a carbonate-bicarbonate type coupling showed no advantage over the present plant method.

Drying studies, made on the presscake of several different batches, indicated that over drying, even at elevated temperatures (as high as 160°F.) could not account for the dullness of masstone obtained in plant batches.

Plant difficulty apparently comes from insufficient removal of the excess nitrite. Several recently made plant batches were supervised by the development section at this point in their manufacture and good batches of color have resulted.

EXPERIMENTAL DETAILS

Semi-works variable study

Lot 8746: The first batch made; it followed the plant formula, K-1929, exactly.

Lot 8750: Sulfamic acid was used in place of urea and the excess nitrite was completely removed. Use of sulfamic acid cuts down the diazo stirring time 45-60 minutes.

Lot 8751: Sulfamic acid again used; removal of nitrite was complete; also under surface coupling was used in hopes of cutting down the time required for complete coupling; however coupling time was not reduced as had been hoped.

Lot 8782: Trial of the laboratory formula, 1118-24A. 1118-24A employs a carbonate - bicarbonate coupling process such that the pH after coupling is above five. (in the K-1929 process it is only 1.0 to 1.5) Sulfamic is used to completely remove the nitrite.

Lot 8802: Formula that of 8751.

Lot 8803: Reverse coupling; formula otherwise was like 8751.

Drying study

(1) Effect of baking.

Samples of Semi-works press cake were dried and baked 48 hours at temperatures ranging from 120 - 160° with out noticeable effect on masticness intensity or on tint.

(2) Effect of humidity drying and of exposure of pulp to elevated temperatures for an extended period (48 hours before drying out).

A sample held as pulp at 160° was duller than a control sample dried rapidly and baked at 160°. A sample "humidity dried" by exposure over 30% H₂SO₄ for 48 hours at 160°F. was also duller than the control. None of the samples were as dull as many plant batches have been and, since 160°F. is considerably higher than normal (130°F) plant dullness could hardly have been caused either by baking of the dry color or by slow drying of the press cake.

REFERENCES

N.B. 1194-35, 36 and 38

N.B. 1118 - 244

SW 8746, 8750, 8751, 8782, 8802, and 8803.

DSN - 46-14.