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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT
Progress Report

Autocoloring Pigment Colors

August 1943 to February 1944.

Period Covered:

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

Progress Report

Title: Autoclaving Pigment Colors.

Period Covered: August 1943 to February 1944.

SUBMITTED BY:

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INTRODUCTION:

This report covers exploratory work on heat development of various organic and inorganic pigments under pressure in the small experimental autoclave installed at Newark in 1943.

It was originally planned to use the autoclave in connection with the study of self-color chalking pigments but no work has been done to date along this line.

The object of the exploratory work described in this report was to determine the effect of autoclaving representative type standard pigments.

SUMMARY AND CONCLUSIONS:

1. Organic Pigments

RT-332-D (Alizarine Lake). Indications are that a fifteen minute development under + 20 lb. gauge pressure in the autoclave produces a lake tinctorially equal to that obtained by four hour development under atmospheric pressure as is specified in the standard RT-332-D formula. However, no work was done to obtain a control developed in less time. Variation of time for development under atmospheric pressure of this formula should be carried out prior to doing more work in the autoclave.

RT-499-D (Manganese "Lithosol" Rubine 3G). Development of this toner for five minutes at 5-10 lb. gauge pressure in the autoclave produced a darker masstone, stronger and bluer tint compared to control developed at atmospheric pressure. This is an interesting lead and further work is recommended.

RP-261-D (Helio Fast Rubine Lake). Development even for short periods in the autoclave gave very hard weak pigments of no interest.

RT-431-D (Calcium "Duol"). Development from five to ten minutes at 20 lb. gauge pressure produced a light masstone and weak tint compared to control developed at atmospheric pressure.

Experimental Barium Lithol Lake. An attempt was made to prepare barium titanate as substrate and simultaneously develop a barium lithol under pressure in the autoclave. This was done by re-slurrying an ammonium lithol red, K-1840, with hydrous titanium oxide and striking with barium hydroxide. Autoclaved material compared with a control developed under atmospheric pressure showed no advantages.

Further experimentation is desirable to prepare the lake under conditions more favorable for formation of barium lithol.

2. Inorganic Pigments

YQ-34-D (Chrome Orange). Development of this product under pressure in the autoclave produced nothing of interest. Duller masstone and weaker tints were obtained in several trials.

B-216-D (Iron Blue). No advantage tinctorially was obtained by development of this pigment under pressure. Change in oil absorption due to autoclaving was negligible.

DISCUSSION:

The autoclave consists of an enamel pot, equipped with an anchor type agitator, with a working capacity of approximately two quarts. The pot is jacketed and heated by steam. The maximum working pressure appears to be about $\pm$ 50 lb. gauge but the safety valve is set at 25 lbs.

Pigment slurry was obtained from bench strikes, with the exception of B-216-D in which case plant slurry and re-slurried press-cake were used. Part of the slurries were held as controls and developed in the laboratory as specified in the respective formulas. The usual procedure in the autoclaving was to enter steam into the jacket at such a rate that gauge pressure would rise uniformly to the maximum pressure desired. The developed slurries were flooded, filtered, etc. in the same manner as controls.

It is recommended that when the work is again taken up further study be made on RT-232-D and RT-499-D following out the leads reported above.

EXPERIMENTAL DETAILS:

Notebook 971 Expts. 5, 6, 9, 12, 13, 15, 17, 20, 21, 22, 23, 24, 27, 29.