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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

GOLDEN "AFFLAIR" - NF-128-D

Period Covered October, 1965 - December, 1966

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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

TITLE: GOLDEN "AFFLAIR" - NF-128-D

PERIOD COVERED: October, 1965 - December, 1966

ABSTRACT:

This report covers the preparation for and the manufacture of the first plant batch of NF-128-D.

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INTRODUCTION

This report covers the preparations for and the manufacture of the first plant batch of NF-128-D, based upon the lab and Semi-Works data as reported in KN-66-7.

SUMMARY AND CONCLUSIONS

No significant operating problems were encountered and material fully equal to goal was produced in the plant. Dry instead of wet classification was used prior to calcination for quality reasons; wet classification will be studied later.

PATENT STATUS

The product in this report is covered by the existing "Afflair" patent (U.S. 3,087,828).

PROCESSING DETAILS

A. Process Flow Sheet - see Exhibit A

B. Mica Selection and Processing

PA-1 type mica of #7 + color was selected and a blend made (1) of 4200# of #10 color and 1400# of #2 color. This blend was then Hurricane classified to remove -5 μ material (see XOA-5, attached), based upon MEP-1037-7. A yield of 66.5% was achieved in the plant, which was essentially equal to the 67% for MEP-1037-7. A lab hydro (104-65H) made from the plant classified mica checked the control very well.

Approximately 100# each of the mica blend and the classified mica blend was sent to Newark for storage as reference materials. These were given Semi-Works lot numbers as follows:

SW-00933 and 00934, blend #1 and #2, respectively
SW-00921 classified blend

C. Hydrolysis, Pressing, and Washing (See XOA-6, attached)

A 5420# hydro was made (Lot 28-1) using 3500# of the classified mica blend, and 1952# of TiO₂ (no Sb₂O₃ added). The conditions were essentially the same as for NF-103-D with the following exceptions:

1. No Sb₂O₃ added.
2. Slightly slower TiO₂ addition rate.
3. Controlled heat up rate.
4. No water added during the boil period.
5. End point determined by color.

No problems were encountered, and the vat control checked the lab material very well.

The batch pressed and washed rapidly.

D. Drying

The plant presscake was dried in the #14 Building Semi-Works Gordon Davis tray drier (low velocity air flow). The pans were loaded to a depth of ± 2 ", and the material was left in the drier for 48 hours to insure complete drying. A shorter cycle may be possible. No unusual dusting was encountered during drying, even though the trays were uncovered.

E. Classification Before Calcination (See XOA-7 attached)

The dried material was Hurricane classified as for MEP-1085-5 and 1189-2 (plant material used), and a yield of 64.6% achieved (compared with 62.5% for MEP-1189-2). Evaluation of this material (cut 21, "Rejects") indicated it to be quite satisfactory.

F. Calcination

The entire 3,288# of cut 21 was rewet with water to ca. 50% solids and then sent to Edge Moor for calcination. Temperature resistance data (run at Newport) indicated a resistance range of 18-30 for goal quality. The kiln was run at a temperature set point of 950°C. and 8 drums of material fed. The resistance of the product ranged from 1-15, primarily because of feed control problems. The temperature was raised to 975°C. and the run finished at this setting; the resistance ranging from 18-30. Attached (Exhibit B) is a tabulation of the data collected during the calcination. A mix of the 950°C. material (mix A) was very close to goal; a mix of the 975°C. material (mix B) was somewhat more golden than goal. It was agreed that the two products be combined, and a plant mix was made.

G. Final Classification (see XOA-8, attached)

REFERENCES

Letter HHG to DM, attached
NB-104
XOA-5, 6, 7, 8
Vinyl series - 66-342-C
Paint series - 66-341-A

EXHIBIT A

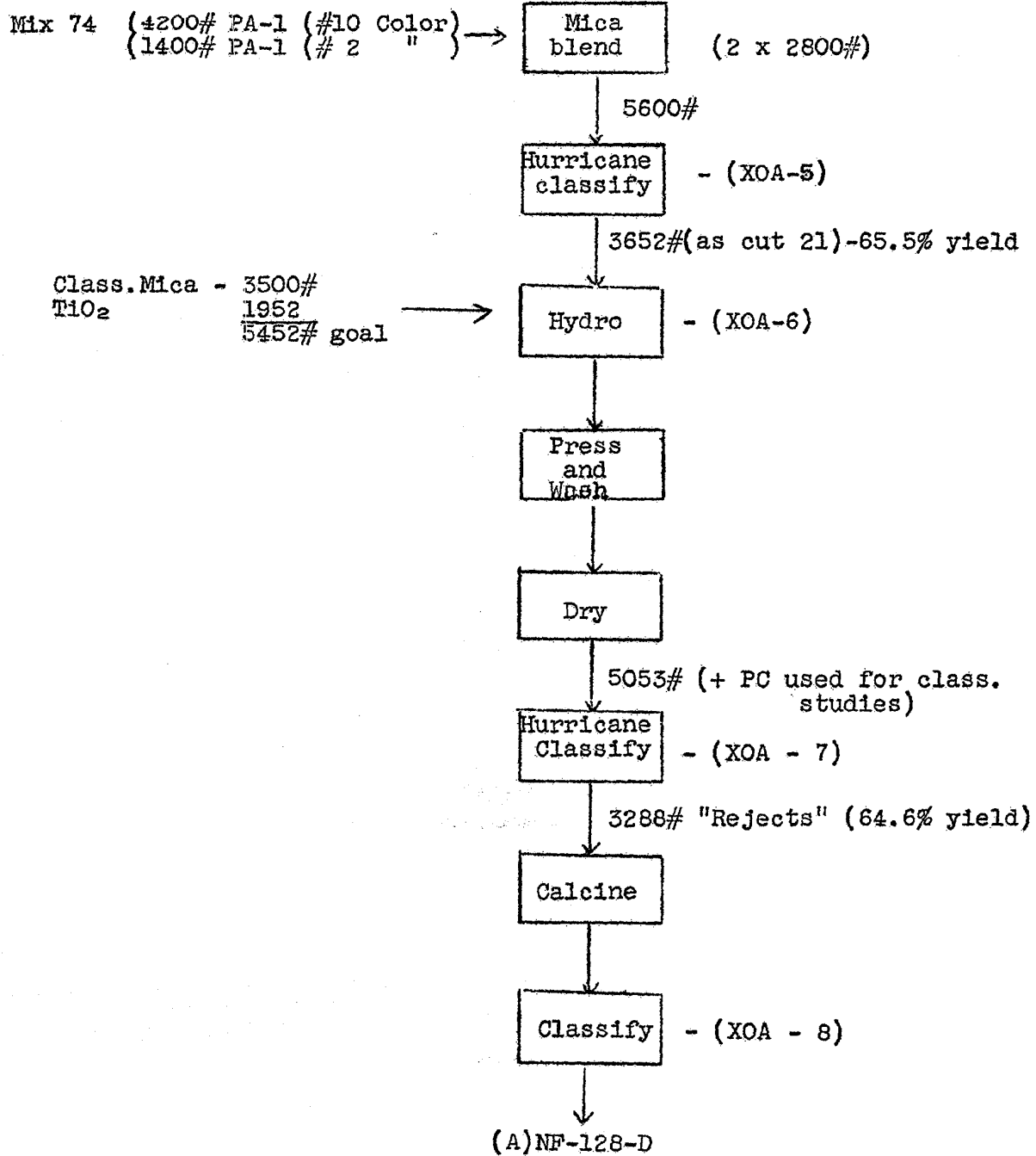


EXHIBIT B

<u>Product Drum #</u>	<u>Set Temp. °C.</u>	<u>P.C.Feed- #/15 Min.</u>	<u>Resist.</u>	<u>Color vs Goal</u>	<u>Remarks</u>
1	950°	35	1	Not eval.	Vibrating feeder used
2	"	?	1	ca =	" " "
3	"	Very erratic	8	ca =	" " "
4	"	" "	1	s lt, red	" " "
5	"	" "	1	ca =	Started shovel feed- ing (see results in drum 7 or 8)
6	"	120(?)	3	ca =	Raised temp. - Shov. at drum 9(?)
7	"	120	4	ca =	pH 7.6
8	975°	"	2	ca =	pH 6.2
9	"	"	15	vs better	
10	"	"	18	" "	pH 8.5
11	"	"	13	" "	Interrupted feed - shov. in drum 13.
12	"	"	3	" "	pH 6.9
13	"	"	8	" "	pH 8.2
14	"	"	18	" "	pH 8.1
15	"	"	20	" "	p
16	"	"	28	" "	<u>Mix A - Drums #</u>
17	"	"	20	" "	9,10,11,14,15,16,17,
18	"	"	20	" "	18,19,20,21,22,23,
19	"	"	27	" "	24
20	"	"	24	" "	<u>Mix B - Drums #</u>
21	"	"	18	" "	3,6,7,8,12,13
22	"	"	20	" "	
23	"	"	24	" "	
24	"	"	30	" "	