

E. I. DU PONT DE NEMOURS & COMPANY
KREBS PIGMENTS DEPARTMENT
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NEWARK, NEW JERSEY

NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Y-488-D - SICK LIST STUDY
ELIMINATION OF DARK DULL MASSTONES

Period Covered: January 20, 1949 - February 11, 1949

FILE:

DATE: 5/24/49

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NEWARK PLANT

PIGMENT COLOR RESEARCH REPORT

FINAL REPORT

Title: Y-488-D - SICK LIST STUDY
ELIMINATION OF DARK DULL MASSTONES

Period Covered: January 20, 1949 - February 11, 1949

Charge: 1100-31-3

SUBMITTED BY: *Julius Jackson*
JULIUS JACKSON

DATE SUBMITTED: 5/11/49

APPROVED BY: *B. H. Perkins*
B. H. PERKINS

5/23/49 DATE ISSUED: 5/24/49

INTRODUCTION

At the request of the Plant, the problem of correcting the dark dull masstones of plant production of Y-488-D was transferred from the Plant Assistance Group to the Inorganic Research Group about January 20, 1949. The status of the problem was summarized in a letter of E. F. Klenke to J. H. Bailey dated 1/24/49 (a copy of which is attached). The bulk of production at that time was dull in masstone versus standard.

SUMMARY

Heavy production requirements demanded a large rate of production despite the recommendation that the Chemical Division had no immediate suggestions to overcome the difficulties experienced in the manufacture of this product. Accordingly, immediate production was based on the recommendations of the Plant Assistance Group.

An evaluation was made of several batches made on the standard formula and on a formula embodying the recommendations of the Plant Assistance Group. This evaluation showed that final vat controls finished in the laboratory were almost invariably superior (lighter and more intense in masstones) to press cake, lump, and grind samples from the plant. In addition, it was also apparent that a continuous degradation in quality was occurring during plant processing. No particular quality advantage was evident from use of the formula changes which had been recommended (i.e. under-surface strike, increased strike time, "dumping" in soda ash).

This matter was investigated in the plant, and gross contamination of Y-488-D with various other pigments was observed. These findings were brought to the attention of the Production Division supervisory personnel. A similar observation regarding contamination of Y-488-D is to be noted in the letter of E. F. Klenke to J. H. Bailey of 1/24/49.

The correction of this situation led to an immediate improvement in the quality of the material being manufactured.

The following variables were also found effective in improving the masstone appearance of plant Y-488-D manufacture.

1. Strike temperature increased to 90°F for lighter more intense masstones.
2. Strike time may be increased to 40 minutes if redder material (than that produced with standard strike time) is required.
3. Y-488-D manufactured in the green vats is usually lighter and more intense in masstone than material manufactured in the yellow vats.

CONCLUSIONS

Adequate supervision, insuring scrupulous cleanliness at all stages of the manufacture of this code, plus the institution of a 90°F strike, has made possible manufacture of standard quality material in the plant.

REFERENCES

DSN-49-20
N.B. 112-12, 15, 14
1121-20

C
O
P
Y

CC: Messrs. V.H. Chalupski
C.D. Atkinson
H. Arnoul
J.D. Moonaw
A.J. Hughes
H.J. Hughes
A.J. Sauerborn
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A. Siegel
J. Jackson

Newark, New Jersey
January 24, 1949

MR. J. H. BAILEY
NEWARK

Y-488-D PLANT ASSISTANCE STATUS

Active investigation of Y-488-D has been transferred from the Plant Assistance Group to the Inorganic Research Group.

As reported in the December Plant Assistance Summary (January 10, 1949) it has not been possible to consistently manufacture standard quality Y-488-D, therefore we have previously recommended restandardization at a more reproducible quality level - vs lt., s.grn., vs to s.dull. Although this proposal was rejected, we recommend that the variables used be continued since they appear to give a higher percent OK straight performance than standard formula. These variables are:-

1. The soda ash added to the lead nitrate solution should be added under the surface.
2. Strike time should be increased from 25 to 40 minutes.
3. The soda ash after strike should be dumped in at once, not "during 2-3 minutes".
4. Washing time should be increased from 4 to 8 hours.
5. Single batch (1663# size) identity should be maintained during processing.

Extreme care should be taken to insure equipment cleanliness. The press, as well as the slurry line from the vat to the press, should be thoroughly cleaned out before starting a production run and should be well hosed between batches. Grinding and packing equipment should also receive special attention.

Use of the above variables, use of a yellow press (#23) for Y-488-D exclusively, and observance of cleanliness precautions in the press room, dry room and grind shop has made possible production of 12 out of 16 OK straight batches so far in January. All these batches, however, are dull in masstone

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and tint, confirming previous experience.

By copy of this letter the scheduling group is requested to send all future Y-488-D batch cards to Dr. Jackson.

E. F. KLENKE, JR.
CHEMICAL DIVISION

EFK:CC

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Newark, New Jersey
February 11, 1949

MR. J. H. BAILEY:NEWARK

Y-488-D - Y-498-D
ELIMINATION OF DARK DULL MASSTONE

The following recommendations summarize the findings of our investigations to date. We believe that strict observance of these factors will permit the manufacture of standard quality material. Restandardization is not recommended.

We request that the Plant resume responsibility for the manufacture of this code.

1. Making Procedure

The use of standard formula modified in the following fashion is recommended.

- A. Strike temperature should be raised to 90°F.
- B. Strike time may be increased to 40 minutes if redder material (than that produced with standard strike time) is required.
- C. No other changes from standard procedure are recommended.

2. Processing Procedures

Too great emphasis cannot be placed on the necessity of maintaining scrupulous cleanliness of strike equipment, pipe lines, filter presses, dryer pans, drying ovens, dumping hoppers, all handling containers, and grinders. These observations have been previously indicated in the Plant Assistance Group's letter of recommendation.

Very gross contamination of Y-488 lots has been pointed out to Mr. C. D. Atkinson in his area. With his assistance, corrective measures were instituted starting with lot 64667. Results were immediately apparent from the elimination of all darkness and most dullness of masstone even while operating on standard formula.

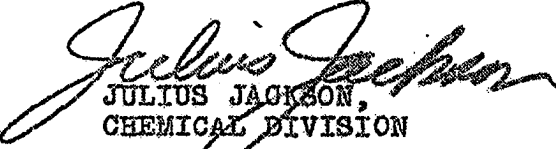
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The following specific recommendations have been made:

- A. Use #2 press - 18 frames for Y-488-D and Y-498-D exclusively. The pump and hose lines feeding this press should not be used for any other color during the campaign. Press wash 8 hours, as per Plant Assistance Group's recommendations.
- B. Use selected dryer pans - soaked in alkali and thoroughly scrubbed free of all previous colors for these codes exclusively.
- C. Do not use brick dryers for these codes. Use P. & S. high velocity dryers exclusively.
- D. Use selected drums for handling these codes exclusively; or preferentially use liners in drums.
- E. Maintain scrupulously clean conditions in feed hoppers and grinding equipment.
- F. Handle and store all Y-488-D drums so as to prevent contamination.
- G. These conclusions are based on Chemical Division rubouts of plant grinds. They have been approved by H. Arnoul and A. Hughes.

Serious discrepancies have been noted in evaluation of Y-488-D lots between Chemical Division (using Hoover Muller) and Control Laboratory using hand mullers. These differences have been resolved usually in favor of the Hoover Muller results. Contamination of rubouts is just as serious as contamination of color during processing. Careful scrutiny of the testing method for prevention of contamination is essential.


JULIUS JACKSON,
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JJ:RMK

CC: Messrs. J.E. Boege, Wilm.
 V.H. Chalupski, Wmk.
 C.D. Atkinson, "
 H. Arnoul, "
 J.D. Moomaw, "

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 J.O. Morrison, "
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Newark, New Jersey
 February 25, 1949

MR. J. H. BAILEY:NEWARK

Y-488-D
ELIMINATION OF RED-DULL MASSTONE

Current observations upon companion batches of Y-488-D (1/2 press load made in Vat 244 - 1/2 press load made in Vat 262) have shown consistent advantages resulting from use of the green Vat 262.

Batches made in this vat are lighter and greener in masstone and closer to standard than those made in Vat 244. This is probably the result of the better agitation of the green vat which is far more uniform than the type of agitation used in Vat 244.

This point has been substantiated by laboratory observations.

The following pairs of batches may be referred to:-

READINGS VERSUS STANDARD Y-488-D

Vat	Lot	Chemical	Control Lab.	STR.	TINT
		Division			
		MT	MT		
244	64815	s.dk., s.gr.	vs.dk., gr., dull	105	s.gr., dull
262	64817	vvs.dk., gr.	s.lt. to lt., (gr.)	105	s.gr., dull
244	64860	s.dk., s.red	s.dk., s.red	90-92	red
262	64862	vs.lt., s.gr.	vs.lt., (gr.), vs.dull	102	s.dull
244	64953	s.dk., s.red	s.dk., s.red	102	s.gr. & int.
262	64957	vvs.dk., vvs.gr.	vs.dk., gr., dull	98	s.int.
244	64977	vs.dk., vs.red	vvs.lt., vvs.dull, vvs.red	98	vs., s.int.
262	64979	vvs.lt., vs.gr.	vvs.lt., vs.gr., s.dull	98	vs.int.

In view of these findings we recommend that the use of yellow vats equipped with turbine type agitators be abandoned as far as manufacture of this code is concerned. If this is not feasible, because of production demands, then Y-488-D for Fuller (light intense material) should be scheduled in the green vat exclusively.

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