

FOR COMPANY USE ONLY

DATE April 3, 1973

TEST AUTHORIZATION NO. TA-C-73-237, Part I

OFFICIAL PRODUCT NAME "LATYL" BRILLIANT BLUE BG DISPERSED CRUDE DRIED

PRODUCT CODE NO. 428 480

POUNDS PRODUCT PROPOSED

AREA "PONSOL"

BUILDING NAME BLDG. 743 - "PONSOL" DRYER NO. 2

TITLE DETERMINE THE EFFECTS OF KEY DRYER VARIABLES ON DPT

PREPARED BY:

L. C. HALE

RESPONSIBLE FOR TEST

AND TEST CONCLUSION: L. C. HALE/W. J. KING

PURPOSE OF TEST: To determine how spray dryer inlet temperature, outlet temperature, and feed % solids affect the dispersibility performance test. Objective is to develop spray dryer conditions that will allow drying of heat sensitive dyes with minimum deterioration of DPT. This test will be used for developing data on many of the newer "Latyls" that are sensitive.

DURATION OF TEST: One to two charges

STANDARD INVOLVED: None

ANALYTICAL CONTROL: ☒ No change ☐ Change described under Test Details

TECHNICAL BASIS FOR CHANGE:

TEST DETAILS: See details
(Include Safety and Waste Disposal)

Safety: No unusual safety hazards are imposed as a result of this test.

Waste Disposal

Dust Emission: A negligible amount of dry product is expected to be emitted to the atmosphere.

Liquid Waste: The dust scrubber liquor will contain approximately 0.1 lb./cwt. of dried material. This will be washed to the ditch along with equipment wash water.

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	C. H. Lake	M. S. Moores	Wiederhorn

APPROVED BY:

CHIEF SUPVR., OPERATIONS

DATE

CH. SUPVR., TECH. OR PLT. ASSIST.

DATE

DATE

SUPERINTENDENT, ANALYTICAL (When Required)

DATE

SUPERINTENDENT, DYE QUALITY CONTROL (When Req'd)

DATE

AUTHORIZED BY:

SUPERINTENDENT, MANUFACTURING (Or Delegates)

DATE

SUPERINTENDENT, TECHNICAL (If Any)

DATE

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Test Procedure

1. Prepare the slurry to give ~50% solids. Run DPT and % solids on slurry.
2. Install Lurgi 3-fluid nozzle.
3. Set inner atomizing steam pressure at 40 psig (~50 lb./hr.)
Set outer atomizing steam flow at 1500 lb./hr. (~80 psig).
4. Set the outlet temperature at 180°F.
5. Adjust the slurry feed rate to give an inlet temperature of 350°F. (The inlet temperature is controlled by slurry feed rate at a given % solids and outlet temperature.) Record slurry gpm and product rate.
6. When steady state is reached, sample product and send to G.A.L. for % moisture and DPT. Save 8-oz. sample for particle size distribution and dust rating.
7. Repeat steps (5) and (6) with the inlet temperature at 550°F.
8. Repeat steps (4) to (7) with the outlet temperature set at 160°F.
Note: The dew point of the outlet air is ~140°F. If the outlet temperature is permitted to fall to this level, water will condense in the ductwork and in the dust collector.
9. Shut down the dryer in order to make adjustment in step (10).
10. Add sufficient water to the feed tank in order to bring the % solids of the slurry to ~30%.

This can be calculated as follows:

$$W_1 = S \left[\frac{1}{E} - \frac{1}{B} \right]$$

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where: S = Lbs. of solids in tank as of this step

$$S = (A \times B - C \times D)$$

A = Lbs. total in feed tank before drying
(from blue line-up card)

B = (% solids of feed)/100

C = Total lb. spray dried as of this step

D = (100 - Avg. % moisture of product)/100

E = (Desired slurry % solids)/100 = 0.30

W_1 = Weight of water to add to bring tank
contents to 30% solids.

11. Send slurry sample to G.A.L. for % solids. Do not wait for results.

12. Repeat steps (5) to (9) at 30% solids.

13. The attached chart summarizes the conditions that will be run.

Note: Spray dryer supervision may decide to eliminate or add to these conditions if they desire.

14. A record of: barrel number
 slurry gpm
 product rate
 product % moisture
 DPT
 dust rating
 particle size distribution

must be kept for each test condition.

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Run Conditions

<u>Feed</u> <u>% Solids</u>	<u>Outlet Temp.</u> <u>(°F)</u>	<u>Inlet Temp.</u> <u>(°F)</u>
50	180	350
		550
	160	350
		550
30	180	350
		550
	160	350
		550

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