

## OPERATING INSTRUCTIONS

J. P. Schwantes  
June, 1979

TA-C-79-504  
TA-C-79-505

Chambers Works  
743-N-7000  
III-1

SUBJECT

SPECIAL INSTRUCTIONS:  
PIGMENT DRYING

OPERATION:

Spray Dryer No. 2

1. Dryer, feed tanks and lines, Aerodyne scrubber, T-11 and filter press must be cleaned carefully before starting a campaign of pigment following drying dyes or dye intermediates.

Filter press must be dressed with clean Dacron or polypropylene felt cloths covered with filter paper. The cloths may be saved for reuse in future pigment campaigns but should not be used for dye intermediates.

2. The pigment will be supplied in 55-gallon, open head drums at 400 pounds net. Lids are fastened with gasket, "J" bolt and nut.
3. If pigment solids are in the range of 15-20%, the material will probably be pumpable using P-12. Somewhat higher solids may be handled by addition of water to the drums to the extent indicated on the line-up card.

Use standard procedure for "Loading Prepared Slurries", Page III-7, but without screen.

4. If material is too thick for P-12, it must be handled as presscake.

Use standard procedure for "Loading Presscake to the Feed Tubs", Page III-9.

Transfer drummed material to dye boxes. Use clean, sturdy boxes free of loose tags, labels, nails or wood.

WEAR RUBBER GLOVES, APRON AND BOOTS WHEN DUMPING DRUMS.

5. No additional material will be added to the slurry other than the minimum amount of water required to make a pumpable and stirrable slurry.

Expect final solids to be 15-18%.

Material is likely to be like paste and may not flow through screen.

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SUBJECT: SPECIAL INSTRUCTIONS:  
PIGMENT DRYING OPERATION: Spray Dryer No. 2

6. Start up dryer using standard procedure, Page III-13.

Dry at:

|                     |   |            |
|---------------------|---|------------|
| Internal Steam      | - | 80 psig.   |
| External Steam Flow | - | 1300 ppH   |
| Slurry Flow         | - | 3 to 5 gpm |

Start at minimum flow until temperatures stabilize;  
then, increase flow until inlet temperature is in the  
range of 160-180°C.

Inlet Temperature: DO NOT EXCEED 240°C. (Burner  
interlock is set at 250°C.)

Outlet Temperature: 80-90°C.

Dry at the lowest temperature at 80°C or up to 90°C that  
assures meeting the moisture spec. of not more than 3%  
water. (Outlet temperature burner interlock is set at  
107°C.)

7. Set FN-11 fan damper at a setting that will give 0.8 inches  
water vacuum at D-10 inlet.

This is the setting that is likely to give the best  
Aerodyne recovery efficiency. The setting may have to  
be increased slightly (not more than to 1.0" water) if  
material accumulates in the cross-over duct.

8. If feed to the dryer is shut off for any reason after drying  
has started:

- DO NOT SHUT OFF STEAM TO NOZZLE IF THE BURNER IS LEFT  
RUNNING.
- IF THE BURNER IS SHUT DOWN, WAIT UNTIL THE INLET  
TEMPERATURE DROPS TO 125°C BEFORE SHUTTING OFF STEAM.

9. Solids recovery from scrubber.

- Shortly after drying has started, start pumping water  
from the bottom cone of T-11 to the filter press using  
the small portable pump only.
- Fill T-11 to 1/2 up the top sightglass then turn off  
water until level drops no more than to 1/2 up center  
sightglass then refill.

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OPERATION:

Spray Dryer No. 2

- c) Do not let T-11 overflow or allow solids to leak from a poorly set up press.
- d) Use water spray on the outside of T-11 to help cooling.
- e) Do not use Nalco in scrubber. This will blind filter and contaminate product.
- f) If foaming cannot be controlled, shut down dryer (see Step 8), filter all water out of T-11, clean filter and restart with fresh water in T-11.
- g) To clean filter:
  - 1) Blow bulk of water out of press by blowing from feed side of press. (This is to prevent tearing the paper.)
  - 2) Do not blow excessively as this will cause the pigment to stick to the paper.
  - 3) Dig the press to a clean press box, label with name and charge number and hold for further instructions.
  - 4) Press will probably require cleaning after each charge and surely after each color change.

### 10. Sampling.

- a) Take a 4-oz. sample from each of the first three drums and from each drum thereafter unless requested to composite each 14 drums thereafter. Pack these in a box to be shipped to:

Att'n. of R. H. MacAllister  
DuPont  
Newport Pigments Plant  
Newport, Delaware
- b) Take an 8-oz. sample from the feed slurry to G.A.L. for Gross Solids and pH.
- c) Take an 8-oz. sample of the 3rd and every 14th drum thereafter to G.A.L. for "% Moisture" (Karl Fischer).

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|---------|-----------------------------------------|------------|-------------------|
|---------|-----------------------------------------|------------|-------------------|

11. Label drums with drum numbers in order of drying and as standard procedure, "Normal Operation", Page III-16.
12. Shutdown by carefully following standard procedure, Page III-18, and Step 8 this instruction.
13. Clean up between charges.  
  
Use only a "Dry Clean-up" following standard "Shutdown" and first two steps of "Clean Dryer Dust Collector", Pages III-18 and III-20.
14. Clean up at end of pigment drying.  
  
Follow standard procedure for "Clean-up After Dichlor".

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PIGMENT DRYING

OPERATION:

Spray Dryer No. 2

"These Operating Instructions have been issued after a full review of current technology and building experience as of 6-22-79 (date), and conform with the current process technology as recorded".

John P. Schwantes (Author's signature)

R. L. Lamblock (Technical signature)

Author John P. Schwantes Date 6-22-79

Sr. Supervisor-Production J. A. Oscar Date 6-22-79

Sr. Supervisor-Technical W. Michael Williams Date 6/25/79

Production Superintendent H. R. Steinbrink Date 6-22-79

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