



LABORATORY REPORT

PIGMENTS DEPARTMENT
CHESTNUT RUN

FIRST REPORT

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SUBJECT

EXPERIMENTAL MONASTRAL® BLUE G, BT-476-D
IN OLEORESINOUS INK

INTRODUCTION:

Inkmakers are currently very interested in Cowles dispersible blues which could replace flushed CPC blue, particularly in heatset publication (process blue) ink. Flushed blue can be very costly on a money/pound pigment basis; Cowles dispersible products have obvious advantages in money value, formulating flexibility and handling ease.

Monastral® Blue G, BT-476-D is a counteroffering for Ciba-Geigy's "Irgalite" Blue LGLD, and is designed to replace flushed CPC blue.

This report covers initial publication heatset ink comparison of BT-476-D with two commercially available green shade CPC blue flushes and Cowles dispersed LGLD. We also made three-roll mill comparisons of BT-476-D with LGLD and Monastral® Blue G, BT-473-D.

We used semi-works BT-476-D, submitted by Research and coded SW-73-00476.

CONCLUSIONS:

BT-476-D, SW-73-00476 is more Cowles -dispersible than, and superior tinctorially to, Ciba-Geigy's LGLD. When printed over diarylide yellow, BT-476-D is superior tinctorially to LGLD and the two commercial flushed blues tested.

BT-476-D is an excellent replacement for BT-473-D in three-roll mill applications.

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SUMMARY:

Cowles Performance

At equal millbase pigmentation, BT-476-D develops less heat than, and has texture equal to, LGLD. When BT-476-D loading is increased 10%, its heat development is equal to LGLD, and texture remains the same. BT-476-D texture improves at even higher millbase loadings.

Versus LGLD, BT-476-D in masstone is generally dark, intense and transparent, and in tint green, slightly less intense and equal to 2.5% weak in strength.

Process Printing

We made equal pigment Vandercook proof press prints of BT-476-D, LGLD and the two flushed blues over diarylide yellow to simulate process printing.

Versus LGLD, the green produced by BT-476-D is dark and blue, indicating pigment could be removed from the BT-476-D ink.

Versus Chemetron's Flushed Phthalo Blue GS, FS-1116, the green from BT-476-D is light, yellow and intense; carbon black could be added to the BT-476-D ink.

The green produced by Hilton-Davis' Peacoline Blue 5-66-H-319 is dark and much less intense than the BT-476-D green; this is probably due to the competitive's redder shade.

Versus Flushed Blue

BT-476-D has superior money value versus the two flushes at their list price.

Versus Chemetron's FS-1116, BT-476-D in masstone is dark, intense and very slightly opaque, and in tint slightly red, very slightly less intense and 12.5% strong.

Against Hilton-Davis' 5-66-H-319, BT-476-D in masstone is dark, intense and slightly opaque, and in tint very slightly green and 10% weak. We believe this competitive may contain red shade (alpha) blue, which would explain its shade and strength.

Three-Roll Mill

Texture and texture development of BT-476-D are about equal to BT-473-D and slightly inferior to LGLD.

Versus BT-473-D, BT-476-D in masstone is very slightly red, very slightly dark and bronzy, and in tint very slightly red, slightly less intense and 2.5% strong.

BT-476-D is very close to LGLD in color and strength.

DISCUSSION:

We will continue work to develop optimum grind conditions for BT-476-D and will make adjusted prints of BT-476-D versus LGLD and flushed colors.

We will hold this work request open to test plant BT-476-D when available.

EXPERIMENTAL DETAILS:

Pigments Tested

Experimental Monastral® Blue G, BT-476-D, SW-73-00476
Monastral® Blue G, BT-473-D, TS-96356
Ciba-Geigy "Irgalite" Blue LGLD, C# 72104

Chemtron Flushed Phthalo Blue GS, CS# 72210
Hilton-Davis Peacoline Blue 5-66-H-319, CS# 72222

Ink Preparation

Cowles-dispersed heatset inks made per TF-2302.

Three-roll mill ink made in #1 Transparent Varnish per TF-2301.

Flushed blues reduced with vehicle and Magle Oil to equal Cowles ink composition.

REFERENCES:

NC-6-73
ILF-30-73



Table I: Three-Roll Mill Texture*

<u>Pigment</u>	<u>Pass #1</u>	<u>#2</u>	<u>#3</u>
BT-473-D	10	6	4.5
BT-476-D	8	6	5
LGLD	6	4	-

* NPRI Texture, 0-10 scale, 0 = perfect
Pigments dispersed at 600 lbs. pressure to
NPRI 5.0 or better.

Table II: Cowles Performance**

	LGLD	BT-476-D			
		#1	#2	#3	#4
% Pigment in grind	20.66	20.66	22.83	22.83	26.20
Pigment wet-in time(min.)	4.5	6	5	6	9
Millbase Tem.-30 min.***	152	145	154		176
Millbase Temp.- 1 hour***				166	
NPIRI Texture					
After Cowles	10	10	10	10	10
After Med. Pass	4.0	4.5	4.5	4.0	3.5

* From TF-2302; TF grind level is 20.66%. All inks reduced to equal composition at 18.41% pigment.

*** Also total grind time.

Table III: Three-Roll Mill Color
(all readings of BT-476-D)

	Masstone	Tint
Vs. BT-473-D	vs. dk., vs. red, bronzy	vs. red, s. less int., 2.5% strong
Vs. LGLD	vvs. dk., bronzy	vvs. red, vvs. less int., 2.5% strong

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Table IV: Cowles Color
(versus LGD, 1/2 hour 20.66% grind)

<u>Pigment</u>	<u>Grind Level</u>	<u>Time</u>	<u>Masstone</u>	<u>Tint</u>
BT-476-D	20.66%	1/2 hr.	dk., intense	s. gr., s. less int., 2.5% weak
BT-476-D	22.8%	1/2 hr.	dk., intense, vvs. trans.	gr., s. less int., 2.5% weak
BT-476-D	22.8%	1 hr.	dk., intense, vs. trans.	gr., s. less int., equal strength
BT-476-D	26.2%	1/2 hr.	dk., intense, s. trans.	gr., less int., equal strength

Table V: Process Print Green
(readings of BT-476-D, 1/2 hour TF Grind)

<u>Versus</u>	<u>Color</u>
LGD	dk., blue
Chematron FS-1116	lt., yel., intense
Hilton-Davis 5-66-X-319	lt., yel., intense

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