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March 11, 1976

TO: J. JACKSON
 Pigments
 Newark Research

FROM: H. F. BARTOLO

ANRD 11-75 (First & Final Report)
MONASTRAL® BLUE G, BT-476-D IN PLASTICS

INTRODUCTION

Two lots of Monastral® Blue G, BT-476-D were submitted for evaluation in plastic systems to assess their suitability as counterofferings for the major Blue G competitors.

Evaluations were made for dispersibility in soft vinyl, heat stability in high density polyethylene and for color properties by varnish dryer rubouts. American Cyanamid and Du Pont codes were used for comparisons.

CONCLUSIONS

Additional effort should be directed to provide a product at least equal in performance to American Cyanamid 55-3297, BT-476-D, Lot 55468, the best Du Pont product evaluated, is deficient primarily in strength and intensity. While suitable dispersibility, strength, heat stability and intensity is available among Du Pont codes, no single product has an adequate level of these attributes.

The economics for manufacture of BT-476-D should be reviewed to determine if it can be profitably sold at a lower than standard price. Exhibits have been provided J. Jackson, Newark Research.

SUMMARY

(See Table I)

*BT-476-D better in dispersibility but not as color as BT-465-
 also heat stable*

J. JACKSON

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March 11, 1976

EXPERIMENTAL DETAILS

Dispersibility was evaluated in soft vinyl (P-2) using TF-6304-2.

Color and strength was determined by rubout using TF-7001.

Heat stability was evaluated using injection molded exhibits in Alathon®7050 polyethylene (see TF-6010 for molding procedure).

PIGMENTS EVALUATED

AC55-3297 C#75407

AC55-3295 C#75404

AC55-3300 C#75405

BT-465-D TS94502

BT-383-D PS97732

BT-297-D PS98150

BT-476-D Lot 56657

BT-476-D Lot 55468

} not run in soft vinyl - why?
H.B. says they are K6 therefore not R&W

REFERENCES

WR-ANRD-11-75, PC-7520-P

Ltr. J. Jackson to H. F. B. 7/1/75

Ltr. " to T. B. R. 3/4/75

Attachments

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TABLE I - SUMMARY OF PERFORMANCE

	Dispersibility	Tint Strength	Color	Heat Stability	Major	
					Deficiency	Attribute
AC 55-3297	excellent	control	control	good	-	disp., color strength
AC 55-3295	worse	5% wk.	vs. intense	better	strength	color
AC 55-3300	vs. worse	7% wk.	vs. intense	equal	strength	color
BT-465-D	s. worse	5% wk.	less intense	excellent	str., color	H/S
BT-383-D	v. worse (1)	equal	equal	better	disp.	str., col
BT-297-D	v. worse (1)	equal	less intense	better	disp.	str.
BT-476-D Lot 56657	worse	5% wk.	vs. less intense	better	str.	color
BT-476-D Lot 55468	vs. worse	5% wk.	s. less intense	better	str.	disp.

(1) Assessment based on prior evaluations.

TABLE II - VARNISH DRYER RUBOUT(1)

Pigment	Masstone	Undertone		Tint	
		Reflected	Transmitted	Strength	Color
AC 55-3300	vvs. lt.	vs. gr.	equal	93:100	less int., s. gr.
AC 55-3295	s. dk.	s. gr.	vs. gr.	95:100	less int., vs. gr.
AC 55-3297	vs. dk.	s. gr.	equal	100:100	s. less int., vs. gr.
BT-465-D	vvs. dk.	vvs. red	equal	95:100	vs. int., vvs. gr.
BT-383-D	s. dk.	s. gr.	s. bronzy	100:100	s. less int.
BT-476-D Lot 56657	vvs. dk.	vvs. gr.	vs. bronzy	95:100	vs. less int., vs. gr.
BT-476-D Lot 55468	=	=	vvs. gr.	95:100	vvs less int., vvs. gr

(1) Evaluations made using TF 7001 vs. BT-297-D PS-98150; readings are control vs pigment evaluated

HFB/sls

TABLE III - PERFORMANCE IN VINYL

Pigment	Soft (1)		Medium-hard(2) Predispersed-Str.
	5 cut-Str.	15 cut-Str.	
BT-465-D	59	72	100
AC 55-3295	33	71	99
AC 55-3300	61	78	99
AC 55-3297	58	87	115
BT-476-D Lot 55468	65	82	108
BT-476-D Lot 56657	53	62	107

(1) Evaluated using TF-6304-2; 5, 15 cut strengths as per cent of predispersed level of BT-465-D as 100.

(2) Strengths expressed as per cent of BT-465-D predispersed strength.

TABLE IV - PERFORMANCE IN POLYETHYLENE(1)

Pigment	Color	Heat Stability(2)			
		450°F	500°F	550°F	600°F
BT-465-D	Control	10	9,1	9,1	9,1
AC 55-3297	v. strong	8,1	6,1	4,1	3,1
AC 55-3300	strong	8,1	6,1	5,1	4,1
AC 55-3295	equal	9,1	7,1	6,1	5,1
BT-297-D	vs. strong	9,1	7,1	6,1	5,1
BT-383-D	vv. strong	9,1	8,1	7,1	6,1
BT-476-D Lot 56657	vvs. weak	8,1	7,1	6,1	6,1
BT-476-D Lot 55468	strong	9,1	7,1	6,1	4,1

(1) Evaluated in Alathon® 7050 at 0.05/1.0 phr color/R-101. Dispersion in 3 min. Banbury cycle; molding of exhibits according to TF-6010.

(2) Rating: 10 = no change, 8 = slight, 6 = considerable, 4 = bad, 1 = light

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