Adhesives T

VISCOSITY STABILITY STUDY

IN DURACET 30 HOMOPOLYMER RESIN

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Monsanto Company

DSW 586558

STLCOPCB4091892

Purpose of Study

1. This study was done to show water let-down capacity of formulations containing Santicizer® 160 plasticizers vs Benzoflex 9-88.

2. Viscosity stability of the two plasticizers were also determined via a 35 day study.

Formulation Studied:

	% Finished Batch Weight
Duracet 30	66.6
Plasticizer	15.0
Tackifier	5.5
Defoamer	0.5
Polyvinyl Alcohol	6.0
Water	0 to 16.4

VISCOSITY STABILITY TESTING

Plasticizer	Water Dilution	1 Hour	1 Day	7 Days	14 Days	21 Days	28 Days	35 Days
S-160	None	13,200	13,100	12,800	12,900	12,800	12,620	12,800
B 9-88	None	12,600	13,100	12,400	12,100	12,100	12,040	12,200
S-160	To 100%	2,400	2,350	2,400	2,400	2,400	2,390	2,450
B 9-88	To 100%	2,500	2,350	2,300	2,250	2,300	2,210	2,350
S-160	To 102%	1,900	1,700	1,750	1,700	1,700	1,640	1,700
B 9-88	To 102%	2,000	1,750	1,700	1,650	1,650	1,620	1,650
S-160	To 110%	600	540	550	550	550	550	550
B 9-88	To 110%	800	560	550	550	550	550	550

1. These data clearly show equivalence at all dilutions when Santicizer® 160 and B 9-88 viscosities are compared.

2. Neither plasticizer exhibits viscosity increase during five weeks of testing and neither plasticizer causes initial viscosity to increase significantly more than the other.

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WET TACK

Plasticizer	Water Dilution	Wet Tack time Average 4 Tests (sec.)
S-160	None	19
B 9-88	None	18
S-160	To 100%	20
B 9-88	To 100%	19
S-160	To 102%	19
B 9-88	To 102%	19
S-160	To 110%	21
B 9-88	To 110%	20

1. Surprisingly, the Wet Tack time remained the same at all water dilution levels with no advantage shown for either plasticizer.

Test Method:

1. The Wet Tack test is a Monsanto test, which is done by drawing down a 0.004 inch thick wet film of adhesive on Kraft paper.

2. Another piece of Kraft paper is placed on the wet film and is slowly peeled until fiber pick is noted. At that point, wet tack time is designated.

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OPEN TIME

Plasticizer	Water Dilution	Open Time Average 3 Test (sec.)
S-160	None	125
B 9-88	None	125
S-160	To 100%	125
B 9-88	To 100%	125
S-160	To 102%	120
B 9-88	To 102%	125
S-160	To 110%	115
B 9-88	To 110%	115

1. The Open Time data indicate no advantage for either plasticizer.

Test Method:

1. The Open Time test is also a Monsanto test, which is done by drawing down a 0.003 inch wet film on Kraft paper.

2. The wet film is covered with pieces of Kraft paper at fifteen second intervals until a strip sticks.

3. The time at which the last strip sticks is called the Open Time.

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SUMMARY

1. Neither plasticizer achieved an advantage over the other according to this study.

2. Good viscosity stabilities were seen in the 35 day period of testing.

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