Monsanto

FROM (NAME & LOCATION) E. E. Cowell, Technology Dept., So. 2nd St.

DATE December 31, 1970

SUBJECT Hot Melt Adhesives

REFERENCE Work Request 70-514

cc: J. A. Cannon - Res 3
J. R. Darby - Res 1
M. W. Farrar - Res 1
R. H. Mills - Res 3
N. W. Touchette - Res 3
A. W. M. Coaker - Res 3

TO : W. S. Clark - WCLAR

The tensile properties of seven EVA resins were run in five different formulations. The results and summary of the results are contained on the attached sheets. Some formulations could not be run due to the high viscosity of the melt which made it difficult to cast into a sheet for testing.

Elvax 40, ICI 28-400, 28-150 and 40-50 were the resins easiest to work with.

Comparing Piccopale, Wing Tac 95 and Sta-Tac 100, the Wing Tac 95 was the best in that films could be cast for testing. Sta-Tac 100 seemed to break down on heating forming gas bubbles.

E. E. Cowell

attach
ds

DSW 587527

STLCOPCB4092863

Hot Melt Adhesives

Elvax 210	50									60										80			
ICI EVA 28-400		80									60										80		
Elvax 150			80									60										80	
ICI EVA 33-45				80				80	80	80			60				60	60	60				
ICI EVA 28-150					80									60									
ICI EVA 40-50						80									60								
Elvax 40							80									60							
Arcolor 5460	20	20	20	20	20	20	20				40	40	40	40	40	40	40				10	10	10
Bee Square Wax																					10	10	10
Piccopale								20										40					
Wing-Tac 95									20										40				
Sta-Tac 100										20										40			
Tensile Strength	–	303	–	–	564	751	415	–	976	–	231	219	593	990	445	681	312	735	835	–	384	375	1062
Modulus 100%	–	251	–	–	255	158	77	–	268	–	160	187	140	229	200	119	46	433	336	–	369	407	324
% Elongation	–	820	–	–	1087	1460	>2450	–	1020	–	1720	1828	1130	1060	1080	1190	2030	750	830	–	425	320	975

Elvax 210					60							40											
ICI EVA 28-400						60							40										
Elvax 150							60							40									
ICI EVA 33-45	80							60							40				40	40	40		
ICI EVA 28-150		80							60							40							
ICI EVA 40-50			80							60							40						
Elvax 40				80							60							40					
Arcolor 5460	10	10	10	10	20	20	20	20	20	20	20	40	40	40	40	40	40	40					
Bee Square Wax	10	10	10	10	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
Piccopale																				40			
Wing-Tac 95																			40				
Sta-Tac 100																					40		
Tensile Strength	1103	657	858	547	433	470	1008	934	570	829	456	393	358	581	1050	514	711	374	470	–	–		
Modulus 100%	400	424	295	179	433	403	315	420	476	366	237	358	346	129	384	391	305	192	470	–	–		
% Elongation	810	765	1015	1357	455	132	720	515	710	1015	1755	660	517	985	840	585	548	1230	110	–	–		

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SUMMARY

TENSILE STRENGTH PSI

	A5460-20	A5460-40	A5460-10 BS.WAX-10	A5460-20 BS.WAX-20	A5460-40 BS.WAX-20
1-ELVAX 210	–	231	384	433	393
2-ICI EVA 28-400	303	219	375	470	358
3-ELVAX 150	–	593	1062	1008	591
4-ICI EVA 35-25	–	990	1103	984	1050
5-ICI EVA 28-150	564	445	657	570	574
6-ICI EVA 40-50	751	681	888	829	711
7-ELVAX 40	415	312	547	456	374

MODULUS 100%

1	–	160	369	433	358
2	251	187	407	403	346
3	–	140	324	395	129
4	–	229	400	430	384
5	255	200	424	476	391
6	158	119	295	366	305
7	77	46	179	237	192

% ELONGATION

1	–	1720	425	485	600
2	820	1828	320	132	517
3	–	1130	975	920	985
4	–	1060	810	835	800
5	1087	1080	765	710	585
6	1400	1190	1065	1015	848
7	72250	2030	1357	1255	1230

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