

가 PVA

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“Effect of Drying and Heat-setting Temperatures on the Removal characteristics of polyvinyl Alcohol Size” .

< >

PVA

. PVA

polyester

.

가

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PVA

가

가

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PVA

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, , 가

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가 .

PVA 가

가

PVA

가

.
 PVA 가 가
 .[3]. Kravetz[4]
 Hydrogen peroxide 가 , Olson[5]
 Brown[1] PVA 가
 .
 water 가 90
 가 .
 PVA .
 Singeing Heat setting .
 가 가
 가 .
 Fiber 가 , 가 roller
 .
 가 가 가
 . 가 , ,
 가 100
 100 , 가
 가 가 가 .
 가 150 .
 (Heat-setting) 가 , 165
 . Singeing() 가

<PVA >

PVA Short-Chain 가 .
hydroxyl group cellulose polyester
가
Acetyl group

PVA Cellulose Polyester (Hydrogen bond)
, PVA
.[6]

PVA PVA
(hydrogen bonding effects)

< >

PVA

PVA

가

P/C PVA Padding

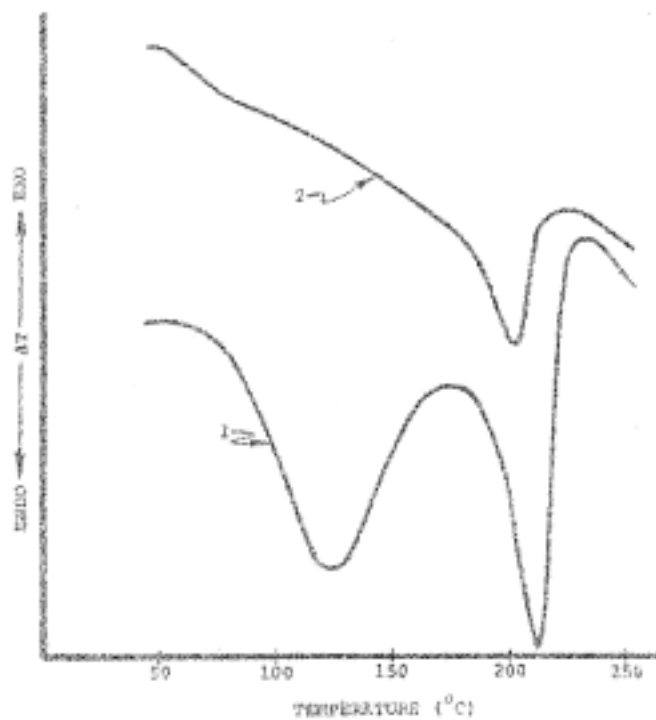
PVA

PVA % gravimetric Spectro photo metric

PVA Cotton Differential thermal Analyser
PVA가 bonding .

<D. T. A >

Differential thermal analyzer(Dupont Model 900 D.T.A) PVA PVA-
Cotton 가 < 1> < 2>

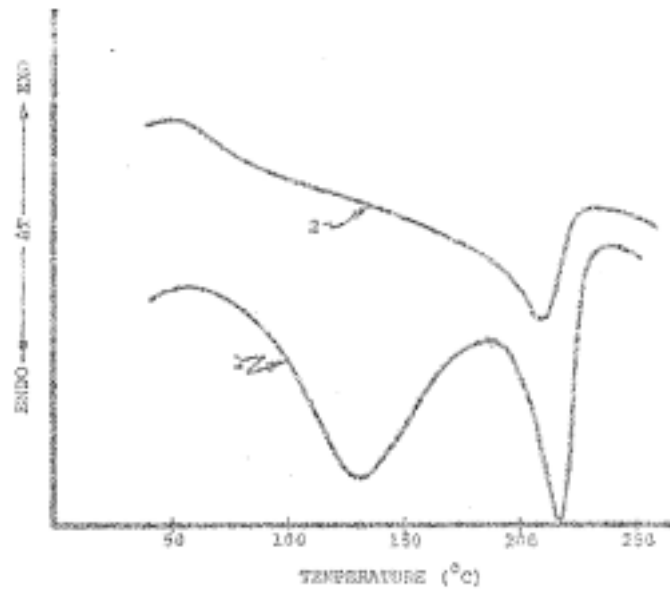


< 1> DTA spectra of 97% hydrolyzed PVA when heated to 205 (curve1), then cooled and reheated to 250 (curve2).

135~140 endotherm
230 .(Curve 1)

137 (transition)

가 .(curve 2)



< 2> DTA spectra of 97% hydrolyzed PVA mixed with cotton when heated to 250 (curve 1), then cooled and reheated to 250 (curve 2)

가 2

가 . endotherm

(melting transition)

Softening

가

Tubbs, Inskip

and Subramanian[7]

thermal gravimetric analyser

data

ether

polymer

137

가

PVA

가

.

< >

Polyester 65%, 35% 5 × 7in Sample

Dry-Oven(Precision Scientific forced draft electric oven) 105 2

24 desiccator .

Balance Mettler Model H-8 balance .

97% Hydrolyzed PVA 8% padding . Pad-Roll

50lb/in² 60% size pick up .

sample wire hanger 95 ~165

10 8 2 Sample

24 Deciccator Sample

PVA .

400~100 0.005% 「Triton X -100」 가

150ml .

10 25 1 50ml .

Bucher funnel .

4 105 2 (Oven)

desiccator 24 PVA %

.

PVA (%) = $\frac{A - B}{A - C} \times 100$

A : PVA

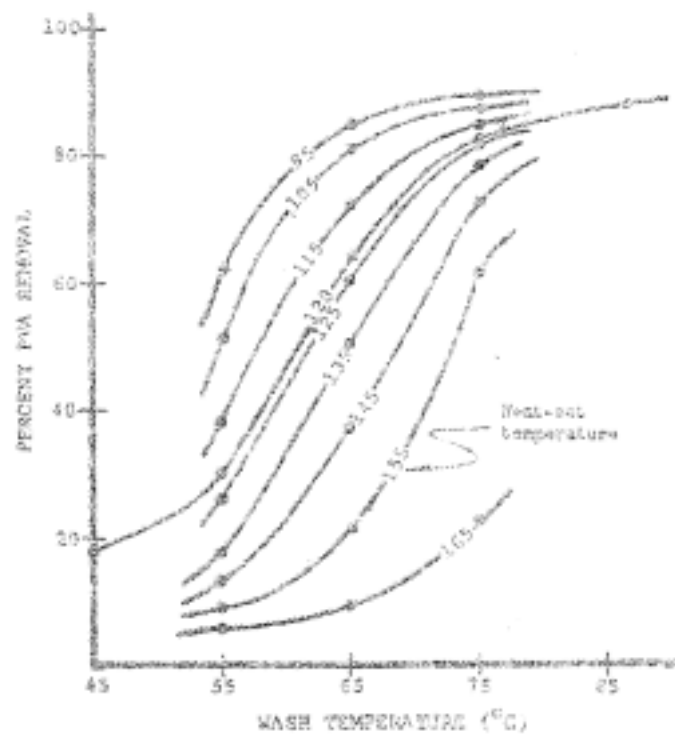
B :

C : PVA

< >

< 3>

PVA % .



< 3> Effect of wash temperature on PVA removal

polyester/cotton

PVA

가 가

. Sample

가

95

65

62%가

가

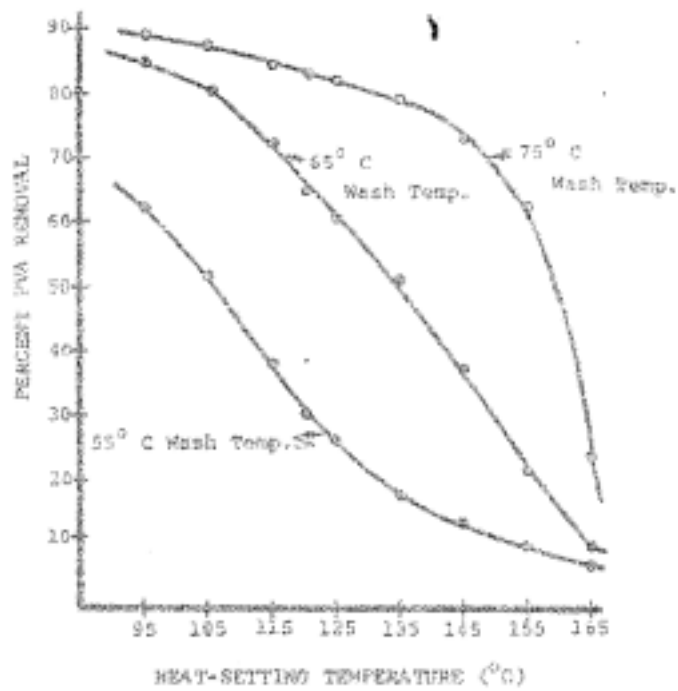
75

가

89%

가

165 가 55
 7% . 95 , 105 , 115 , 120 , 125
 75 80%
 75 가 가 가
 165 75 23% 가



< 4> Effect of heat-set temperature on PVA removal.

< 4> 55 , 65 , 75 PVA %
 가 135
 가

가 140 %가 .

가 140 165 가

, PVA %가 .

< >

PVA 가

. , PVA

. PVA D.T.A < 1> < 2>

가 137 .

, PVA 가

(Hydrogen bonding) .

가 150

가

Huser[2] “cellulose 가

150 : .

cellulose chain Hydroxy group cellulose

.

Swelling ether group

hydroxyl group .

PVA Hydroxyl group ,

ether cellulose PVA ether

(Interetherification) . 가 ether 가

가 PVA 가

. 가 ether 가 150 165 가

PVA .

PVA cotton .

< >

Data PVA

가 .

PVA

. 가 가 .

PVA 가 135 .

, , singeing

(oven heat) .

.

.

가 가 가

가 10t 10t

가 .

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