

New rayon

(2)

5. Polynosic

Rayon 가

Polynosic 가 , ,

. Polynosic 가 (立川)

1959 社

C.T.A社 Mr. Drish가 Polynosic

. Rayon A.P.I.(;

Association of International Polynosic)

Toyobo社 Fujibo社

* A.P.I Polynosic

High water resistance : High wet strength and high wet modulus

High alkali resistance of minimum change in its wet strength and wet elongation
between before and after alkali treatment

Relatively high degree of polymerization 가

,

i) 0.5g/d : 4%

ii) NaOH 5% 0.5g/d : 8%

iii) NaOH 5% : 2.3g/d

iv) Loop : 0.5 g/d

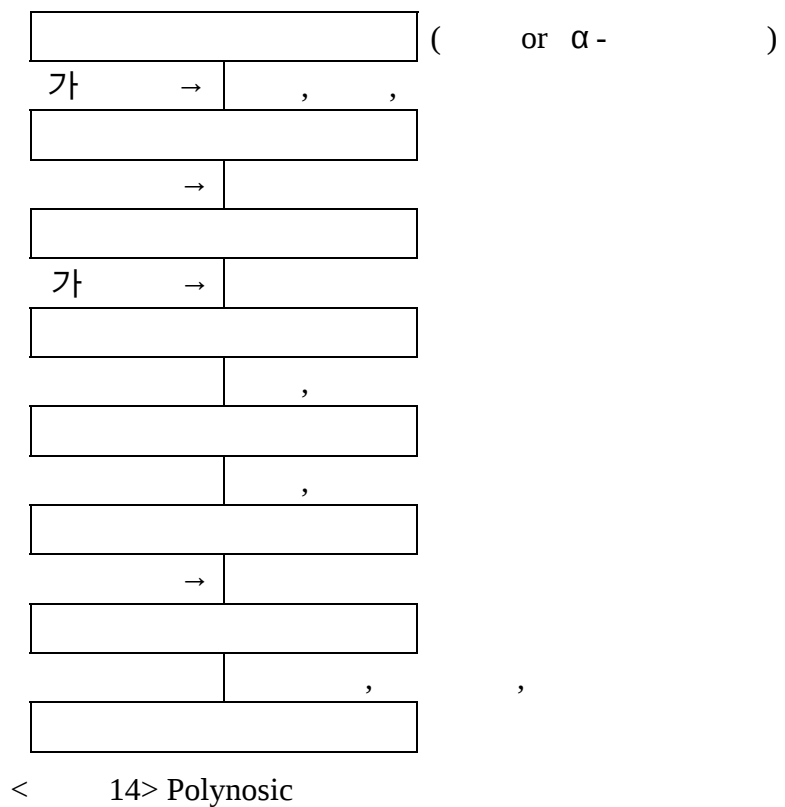
v) : 450 .

5.1 Polynosic

Polynosic Rayon SF cotton 가

. Polynosic viscose rayon , cost가

. Polynosic < 14> .



5.1.1 pulp

가 .

5.1.2 Slurry

Alkali Rayon, Hemi-cellulose

. Polynosic

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5.1.3

가 cellulose

가 Polynosic 50% 가 . (Viscose Rayon

30%가) Polynosic viscose cellulose

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5.1.4

Polynosic viscose 가

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5.1.5

가 Polynosic viscose , , (,

, 3) cellulose

. cellulose

가 가

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5.2 Polynosic

5.2.1

	Polynosic	Rayon	Rayon	H.W.M.	Tencel	Cotton
(d)	1.50	1.50	1.50	1.50	1.50	1.50
() (g/d)	4.50	2.70	3.80	4.20	4.80	2.90
() (g/d)	3.50	1.70	2.80	3.00	4.20	3.00
(%)	78	63	74	71	88	103
() (%)	12.0	17.0	22.0	14.0	13.0	10.0
() (%)	13.0	20.0	25.0	17.0	18.0	12.0
(g/d)	2.3	1.50	1.90	1.80	3.70	2.50
Loop (g/d)	02.30	1.60	2.20	-	-	3.90
5% (g/d)	1.20	0.40	0.30	0.80	1.35	0.70
0.5g/d (%)	2.50	7.00	9.00	4.00	2.00	5.60
同上(5% NaOH) (%)	3.50	13.00	18.00	9.00	2.20	4.00
5% NaOH (g/d)	3.00	1.20	1.40	2.00	4.00	2.60
(%)	68	87	70	72	-	40
(%)	76	49	47	-	23	38
	500	300	350	400	500	2,500

5.2.2

가 .

Rayon 가 ,

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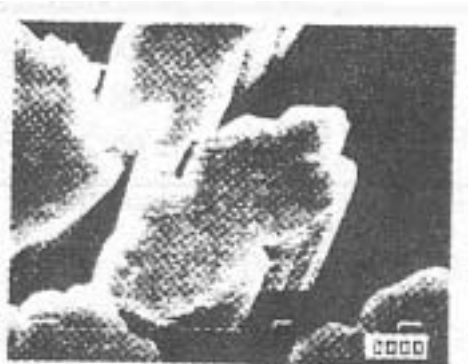
denier가 가 .



Rayon



Rayon

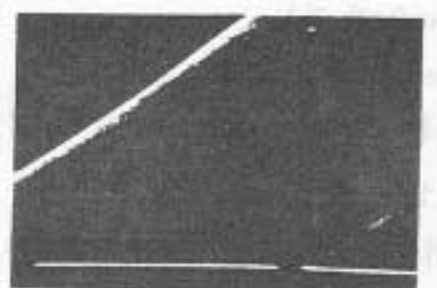
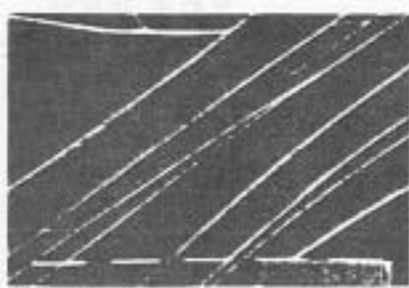


H.W.M



Polynosic

< 15> Polynosic



< 16> Polynosic

5.2.3 Polynosic

1973 Oil shock energy Rayon
Toyobo社 (Tufcel) Fajibo社 (Junlon) .

1) Toyobo社

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， ，
가
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 < 6> .

	Rayon	Rayon	Polynosic
	300	350	500
	30	34	48
	84	91	92

< 6>

2)

가 가 .
.
가 가 가 .

denier가 가

drape .

silky .

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가 .

	silky	, , ,
	太 denier	, ,
	,	,
	,	,

3) Fujobo社

가 500([Celltima] 585) 300 Viscose

Rayon 가 가

. 가 Viscose Rayon 가

, 585 [Celltima] Junlon

가 . Fujibo [Celltima] 가

[Celltima Invartex] .

* Fujobo社

: original

オスク-口 : Dull

Polynosic Viscose

Polynosic Bright Dull .
 Celltima, Invartex : 가 (570-600) Polynosic
 , , modulus,
 Polynosic Rayon

Polynosic , , MRSA

6. H.W.M (High Wet Modulus)

가
 A.V社(Americal Viscose) Rayon
 . 가 400

H.W.M “Modal”
 cellulose ,
 가 가 가 .

.
 Wet 5% “Wet Modulus”
 . Wet Modulus가
 .
 cellulose 가 (wet modulus)
 가 가 H.W.M .

(BISFA) wet modulus 가 cellulose “Modal”
 . Polynosic
 Polynosic “Modal” . Modal
 H.W.M Polynosic 가 . Modal
 Polynosic
 , Polynosic Modal .
 Polynosic , H.W.M
 Modal

6.1 MODAL

1988 Modal (Beech
 Wood) Rayon, Cotton ,
 , 가 가 가 ()
 가 soft peach , ,
 , 가

Viscose Rayon Modal
 . Bath , , Strength ratio .
 Modal < 7> Viscose Rayon wet
 가 Conditioning wet modulus 가 . Viscose
 Rayon water retention capacity 가

	Polynosic	Viscose Rayon	Modal	Cotton	Tencel
(d)	1.5	1.5	1.5	1.5	1.5
(g/d)	4.4~4.8	2.6~3.1	4.1~4.3	2.4~2.9	4.8~5.0
(g/d)	2.5~3.8	1.2~1.8	2.3~2.5	3.1~3.5	2.5~3.8
(%)	0~11	20~25	13~15	7~9	14~16
(%)	1~12	25~30	13~15	12~14	16~18
(%)	12	13	12.5	8	11.5
	500	300	400	2500	500

< 7>

wet modulus : 0.5

whiteness : Viscose Modal Cotton white .

: 1.5 .

: 400

water retention value : Modal retention value , Viscose

. (- 60%, Viscose- 85%)

: Viscose Cotton Modal .

10

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: Modal

. Type NaOH 4.5%(7.0 ° Be)

가 . Modal fiber

NaOH 17-22%(24-28 ° Be) .

: Modal fiber Cotton cellulose 가

. , 가

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6.2 Modal

High Wet Modulus Type Rayon 가

, 가 .

easy care .

가 가 .

drape handle 가 .

0.5d denier 3.0d , ,

가 , , 가 Handle

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7. Tencel

7.1

7.1.1 ?

(Tencel) Courtaulds 100%

“High Tenacity Cellulose Fiber” .

Lyocell . Lyocell

, BISFA

Courtaulds 가 solvent spun cellulose ,

1989 . Courtaulds

Lenzing, Akzo, Enka Lyocell .

가

85%

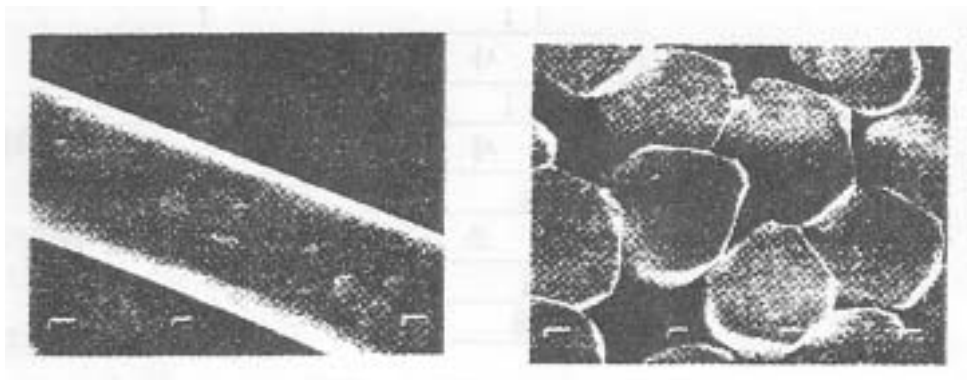
1.5~2 modulus가

(d)	1.5	1.5	1.5	1.5	1.5
	500	300	500	2,500	-
(X)	-	30	48	70	-
(%)	65	87	68	40	3
(g/d)	3.9~4.3	1.1~1.7	2.1~2.4	2.9~2.4	4.3~7.3

< 8>

	Tencel	Modal	Viscose	Cotton	Polyester
Tire (d tex)	1.7	1.7	1.7		1.7
Tenacity (cN/tex)	38-42	34-36	22-26	20-24	55-60
Elongation (%)	14-16	13-15	20-25	7-9	25-30
Wet Tenacity (cN/tex)	34-38	19-21	10-15	26-30	54-58
Wet Elongation (%)	16-18	13-15	25-30	12-14	25-30
Tenacity (10% ext.)	35	23	16	N/A	26
Wet Modulus (5% ext.)	270	110	50	100	210

< 9> Comparison of fiber properties



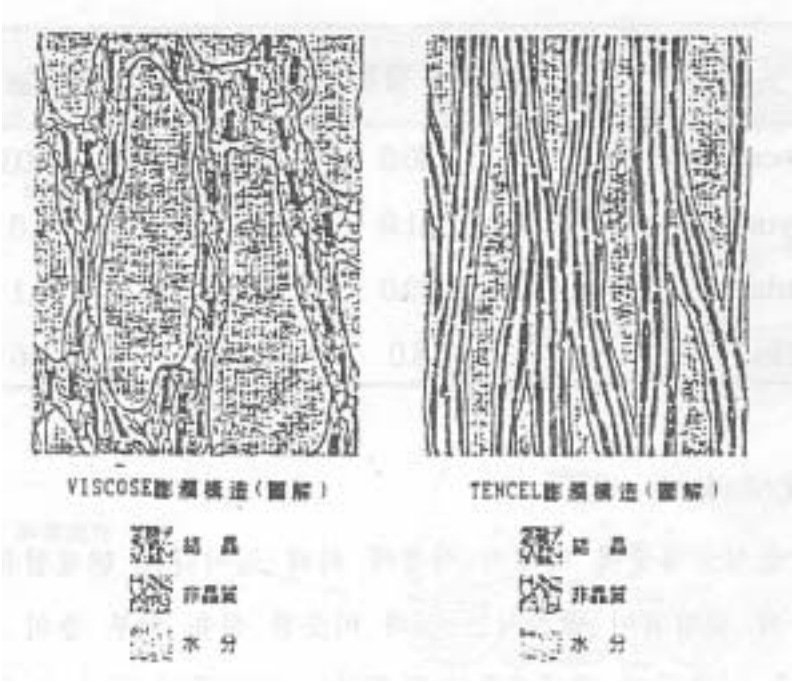
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7.1.4

3가 , , 가 , Rayon peach skin touch

buky . 가 < 19>

가 가



< 19> Viscose rayon Tencel

가

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가

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가

. (10)

stiff

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relax

가

(dimension)

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가

setting

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가

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가

(

가

setting

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가

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0.5%

4

3%

. (

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	(%)	(%)
Tencel	40.0	0.03
Rayon	31.0	2.6
Modal	29.0	1.1
Cotton	8.0	0.6

< 10>

(%)

7.1.5 (Fibrillation)

1)

stripping

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1

clean

2

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2)

가

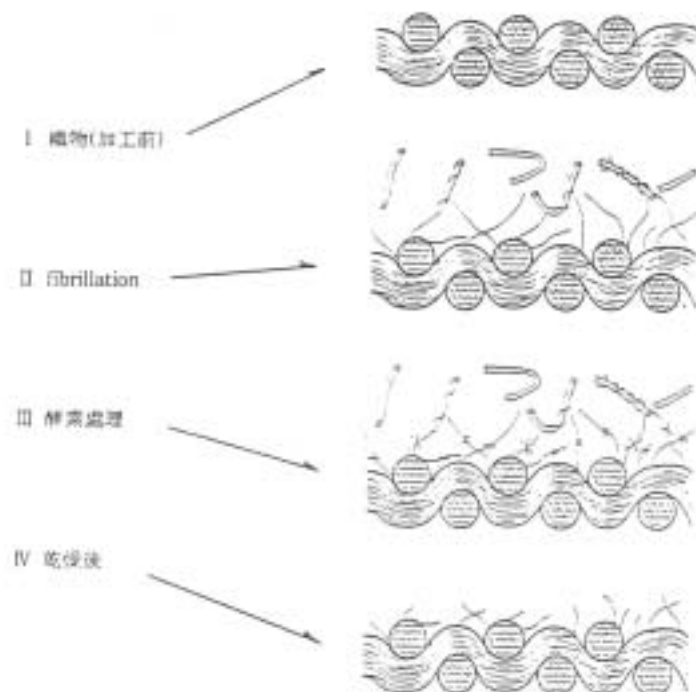
가

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가

가

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< 20>

i) (1)

ii) 1

iii) 가

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1

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3)

pH가

가

가

가

pH 가

가 가

가

microfibril

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가 pH

가

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pH

가

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