

(72)

40359	925
45206	11349
18657	8
45241	20
45066	8575
45213	2797

(74)

:

(54)

가 10^{12} 가

(hydroxide formation constant)가 10^{12} 가

가 , (mucus) .

가 , (countertop), (vanity) ,

가 , (, ,)

가 , 가 , 가 , 가

가 가 (redness) 가 가 가

가 가 ; (3) 가 , (1) 가 ; (2)

4,738,847 (Rothe , 1988 4 19) , 3 가 /

4,828,912 (Hossain , 1989 5 9) , /

2가 가 가 .

5 pH 가 , pH가 가 pH 3 . pH 4

" () " , 2 (gluing) (embossing) 2

" (carrier)" ,

" (through air drying)" " (blow through drying)" ,

" (mechanical dewatering)" , " (conventional wet pressing)" "

(conventional felt pressing)" ,

" (wire side)" , (wet end)
(, fourdrinier)

" (fabric side)" , (wet end)

" (polyhydric alcohol)" 가

가

1

%,

A.

2 , 130g/m² , 20g/m² 80g/m² , 가 (basis weight) 10g/m² 25g/m² 60g/m² .

(, 2)

2

가

1

, 2

1

, 2

1

(foraminous forming wire, rmaking furnish)

fourdrinier

(pape

(consistency)가 fourdrinier (opening) 가 (fiber consistency)가 7 25% ()가

Yankee 가 (, Yankee) , Yankee 가

가 " " (compact)

(pattern densified tissue paper) (bulk field) 가 (pillow region) 가 (densified zone) 가

3,301,746 (S anford , 1967 1 31), 3,974,025 (Ayers, 1976 8 10), 4,191,609 (Trokhan, 1980 3 4), 4,637,859 (Trokhan, 1987 1 20), 5,364,504 (Smurkoski , 1994 11 15), 5,366,785 (Sawdai, 1994 11 22), 5,529,664 (Trokhan , 1996 6 25), 5,679,222 (Rasch , 1997 10 21)

(, fourdrinier) (an array of supports)

(densified zone)

(high bulk field)

가 (dedensify)

가

125% 가 (densified knuckle) .
 가 (patterned displacement) (imprinting carrier fabric)

3,301,74

6 (Sanford , 1967 1 31), 3,473,576 (Amneus, 1969 10 21), 3,573,164 (Friedberg , 1971 3 30), 3,821,068 (Salvucci , 1974 5 21), 3,974,025 (Ayers, 1976 8 10), 4,239,065 (Trokhan, 1980 12 16), 4,528,239 (Trokhan, 1985 7 9), 5,098,522 (Smurkoski, 1992 3 24), 5,275,700 (Trokhan, 1994 1 4), 5,328,565 (Rasch , 1994 7 12), 5,334,289 (Trokhan , 1994 8 2), 5,496,624 (Stelljes, Jr. , 1996 3 5), 5,500,277 (Trokhan , 1996 3 19), 5,628,876 (Ayers , 1997 5 13) 5,679,222 (Rasch , 1997 10 21).

(furnish) - (, fourdrinier)
 (fouaminous supportion carrier) (deposit)
 가 40% 80%가

(face) (nip roll) { , Yankee }

(densified zone) /

(uncompacted, nonpattern - densified)
 6 17) 3,812,000 (Salvucci , 1974 5 21) 4,208,459 (Becker , 1980
 (uncompacted, nonpattern - densified)
 (, fourdrinier) (papermaking furnish)
 (draining) 가 80%
 가 (creping)

(bonding material)

(draining) (fourdrinier) 가 25 50%가 (creping) 가

: 3,994,771 (Morgan, Jr. , 1976 11 30), 4,225,382 (Kearney , 1980 9 30), 4,300,981 (Carstens , 1981 11 17), 5,245,025 (Trokhan , 1993 9 14), 5,277,761 (Phan , 1994 1 11), 5,443,691 (Phan , 1995 8 22), 5,503,715 (Trokhan , 1996 4 2), 5,527,428 (Trokhan , 1996 6 18), 5,534,326 (Trokhan , 1996 7 9), 5,614,061 (Phan , 1997 3 25), 5,654,076 (Trokhan , 1997 8 5), 5,804,036 (Phan , 1998 9 8), 5,804,281 (Phan , 1998 9 8), 5,814,188 (Vinson , 1998 9 29) 5,820,730 (Phan , 1998 10 13).

5,411,636 (Hermans , 1995 5 2) EP 677612 (Wendt , 1995 1 0 18)

(foreshortening) (rigid surface) (creping) Yankee (doctor blade) : 6,048,938 (Neal , 2000 4 11), 5,942,085 (Neal , 1999 8 24), 5,865,950 (Vinson , 1999 2 2), 4,191,756 (Sawdai, 1980 5 4), 09/042,936 (: 1998 3 17).

가 (foreshortening) 4,440,597 (Wells , 1984 4 3)

가 ()가 MICROBAN (Microban Products Co., PULPEX (Hercules, Inc.,)

groundwood, 가 (softwood) 가 (hardwood)

가 가 가 , (furnish)
 가 가 , 가 ,
 , , " "
 가
 가
 가 : 3,700,623 (Keim, 1972 , 10 24) 3,772,076 (Keim, 1973
 11 13).
 - , KYMENE (557H (Hercules Inc.,
)

3,556,932 (Coscia , 1971 1 19) { 3,556,933 (William
 s , 1971 1 19) } 가
 Co. (PAREZ (631NC,)
 , American Cyanamid

가
 ,
 -
 (permanent wet strength resin)
 0.1 5%, 0.2 2%, 가 0.05 10% (
 0.3 1%)
 가 ,
 , , ,

가
 : 4,981,557 (Bjorkquist, 1991 1 1), 5,008,344 (Bjorkquist, 1991 4 16),
 5,085,736 (Bjorkquist, 1992 2 4), 5,138,002 (Bjorkquist, 1992 8 11), 5,217,576
 (Van Phan, 1993 6 8), 5,656,746 (Smith , 1997 8 12), 5,690,790 (Headlam , 1997
 11 25), 5,698,688 (Smith , 1997 12 16), 5,760,212 (Smith, 1998 6 2),
 5,262,007 (Phan , 1993 11 16).

가 가 ,
 , , ,
 가 : (softening agent)
 5,059,282 (Ampulski , 1991 10 22), 5,215,626 (Ampulski

[1]

	log K ₁	log K ₂	log K ₃	log K ₄	log K ₅	log K ₆
	9.27			33.03		
(III)		24.3	36.7	38.3		
[AsO ⁺]	14.33	18.73	20.60	21.20		
	9.7	14.0	15.2			
(III)	12.7	15.8		35.2		
(III)	14.6					
(IV)	13.28	26.46				
(III)	10.1	17.8		29.9		
(II)	7.0	13.68	17.00	18.5		
	11.0	21.7		34.3	38.0	40.3
	9.9	19.8		28.7		
(III)	11.87	21.17	29.67			
(II)	7.82	10.85	14.58			61.0
(IV)	12.39					
(IV)			41.6	53.0	64.8	72.0
(III)	12.86	25.37				
(III)	12.71					
(IV)	13.3				41.2	
(III)	11.1	21.6				
(V)[VO ³⁺]		25.2		46.2	58.5	
	4.40	11.30	14.14	17.66		
	14.3	28.3	41.9	55.3		

{ , a - Lange 's Handbook of Chemistry, 14 , McGraw - Hill, Inc., 1992 }

100 % (0.01 80 %, 가 0.1 70 %) 0.001

2.

09/643,903 (- 2000 8 21)

(D L) 가 2가 () 2가
 가가 , 2가 (blend) . L

D : D- , 5- -(+) - 2- -
 5- , (+) - , (R) - 2- - 5- , 5- -D- , D- 2- - 5- ,
 D- , D-

L : L- , 5- - (-) - 2- - 5-
 , (-) - , (5S) - 2- - 5- , (S) - (-) - 2- - 5- , (S) - 2-
 - 5- , (S) - 5- - 2- , (S) - , 2- L- - 5- , 2-
 - 5- , 5- - 2- , 5- - L- , 5- , 5- - 2- ,

L-5-, L-2-, -5-, L-5-, -2-, L-5-, -2-,
L-, L-, , L-, L-, L-, L-,
L-, PCA, -5-

DL (D L) : DL-, 5- -
(±)-2- -5-, (±)-, 5- -DL-, DL-2- -5-, DL-
2- -5-, DL-, DL-, DL- , D
L Ajidew (F) A100

가 , Barnet Products Corp. () UCIB ()
Pidolidone (F) , Ajinomoto Corp. Ajidew (F) A100

가 , Barnet Products Corp. () UCIB ()
Ajidew (F) NL-50 Nalidone (F) Ajinomoto Corp. Ajidew (F) N-50
PCA, PCA가 PCA,

가
, 1 4 , C₂
, 가 (, ,)
, C₁ C₁₂ - , , 2- , 2-
, 2- , 2- , 2- , 2-
2- , 2-

, 1 4 , C₃
, 가 (, ,)
, C₁ C₁₂ - , , 3- , 3-
, 3- , 3- , 3- , 3- , 5- , 3-
3- , 3- , 3-

, : 6,054,020 (Goulet , 2000 4 25), WO 97/41301 (McFarland , 1997 11 6), WO 00/00698 (Hsu , 2000 1 6), 2,239,927 (McCullough, 1999 1 1).

/ (ply bonding) : 3,414,459 (Wells, 1968 12 3), 3,867,225 (Nystrand, 1975 2 18), 4,481,243 (Allen, 1984 11 6), 5,294,475 (McNeil, 1994 3 15).

2. (polyhydric alcohol)

, (,) , 1,2 , 1,2 ,) , 0.1 99 % (,) , 5 90 % , 20 80 %가 .

3.

09/342,777 (: 1999 6 29)

4.

5 80 % (,) , 0.5 70 % , 5 60 %가 0.001 100 % (,) , 0.01 80 % , 가 0.1 70 %가 .

: 4,11 2,167 (Dake , 1978 9 5), 4,481,243 (Allen, 1984 11 6), 4,513,051 (Lavash, 1985 4 23), 5,525,345 (Warner , 1996 7 11), 5,716,692 (Warner , 1998 2 10), 5,830,487 (Klofta , 1998 11 3), 09/041,231 (: 1998 3 12).

: 5, 059,282 (Ampulski , 1991 10 22), 5,164,046 (Ampulski , 1992 11 17), 5,385,643 (Ampulski , 1995 1 31), 5,389,204 (Ampulski , 1995 2 14), 5,814,188 (Vinson , 1998 9 29).

, R₁ R₉ ; R₁₀ 가
 , ; R₁₀ 가 ;
 , / R₁₀ ()
 가 , R₁₀ ,

, General Electric() CM 849 .

, 25 20,000,000 (centistoke) 가 ,
) (,

18 % (, 0.01 40 % () . (, " 가) . , 0.5

, - " - (non - uniform)"

- 가 가
 { : 4,481,423 (Allen, 1984 11 6) }
 5,814,188 (Vinson , 1998 9 29)}.

2 - , 2 .3 - 2 ,
 , 2 가

, (,) , ,

가 , 가 가

ing) (,) , Yankee (calender)
 가 (parent roll) 가 ,

(gravure coating) (extrusion coating)
5,246,546 (Ampulski, 1996 9 21)
(extrusion coating)

(gravure coating)

가
, 1998 9 29)

5,814,188 (Vinson

(1998 2 24)

5,814,188 (Vinson , 1998 9 29)

4,481,243 (Allen, 1984 11 6), 5,720,966

(dipping), (soaking),
(,)

가
{ : 4,481,243 (Allen, 1984 11 6)}.

0.1 25 %, 0.2 15 %), 0.05 50 % (
pH , 6
5 , 가 4

가 14 (, " RV - 14") , Buchner
1 . 1
(aliquot)
, 10

가

가

(stock virus)

14 (rhinovirus) 1059 , American Type Culture Collection (ATCC) (V
R - 284 , Rockville, MD)

, 75 100%

(supernatant)

- 70

(), 4 30 60 100,000RPM

E - MEM

(aliquot) ,

CRL - 1958) 4 (quadruplicate) 10 - , H1 - Hela (ATCC
가

- , H1 - Hela (ATCC CRL - 1
958) . H1 - Hela , 10% FBS 1% PSG가 E - MEM . E -
MEM , Life Technology, Inc. (Rockville, MD) (Gibco BRL 10370 - 021)
(Earle , - ; L -) ; FBS Life Technology, Inc. (Rock
ville, MD) (Gibco BRL 16140 - 071) ; PSG Life Technology,
Inc. (Rockville, MD) (Gibco BRL 10378 - 016) - -

, 5 7% CO₂ 가 36 - 38

, 10% (Bovine mucin) (Sigma Aldrich M - 4503) 1% PSG가
E - MEM . E - MEM , Life Technology, Inc. (Rockville, MD) (Gibco BRL 10370 - 02
1) (Earle , - ; L -) ; PSG Life Te
chnology, Inc. (Rockville, MD) (Gibco BRL 10378 - 016) - -

, 1% PSG가 E - MEM . E - MEM , Life Technology, Inc. (Rockville, MD) (Gibco BRL 10370 - 021) (Earle , - ; L -) ; PSG Life Technology, Inc. (Rockville, MD) (Gibco BRL 10378 - 016)

56 ± 0.5 mm

Buchner

(pre - weighted) 2 Buchner (replicate) 56mm - Buchner (60240 ; Coors,

250mm - 가 Bucher Buchner , Buchner (arm)

10% (Bovine mucin) (Sigma Aldrich M - 4503) 1% PSG가 E - MEM (500µℓ) , 1 3Mℓ

15 가 , Buchner (10⁻¹) , 10 (0.3ml + 2.7ml) , Buchner ()

10% FBS 1% PSG가 E - MEM (500µℓ) , 1 E - MEM 3Mℓ

15 가 , Buchner 가
 , log . Buchner 가

4
 , 2
 (, TCID₅₀)
 TCID₅₀ - TCID₅₀ "
 " %
 " " :

$$(\%) = (A - B)/A * 100$$

{ , A = - TCID₅₀ (/ml); B = TCID₅₀ (/ml) }

A = 10⁶ /ml B = 10² /ml ,

$$= (10^6 - 10^2)/10^6 * 100 = 99.99\%$$

가 가
 가 (tissue panel softness)

	10	35%	22	40	Tappi 24	# T402OM - 88	(conditioning)
	48	52%	22	24	24		

가 가

(paired comparison) { : " Manual on Sensory Testing Methods" , ASTM Special Technical Publication 434, American Society for Testing and Materials, 1968} . , Paired Difference Test (subjective testing)

2
 (PSU)

PSU 가 6 X , Y . 10
 1 Y X , Y , X

- 1. X가 Y +1, Y가 X - 1;
- 2. X가 Y +2, Y가 X - 2;
- 3. X가 Y +3, Y가 X - 3;
- 4. X가 Y +4, Y가 X - 4.

PSU
 0(zero) - 0(zero) PSU
 (+) (-) 가 0- 가
 0.2 PSU가

1

1

1

Puffs (F) Advanced Extra Strength

(slot extrusion)

2 ()

1

fs (F) Advanced Extra Strength (, 48.8%(wt/wt) Al₂(SO₄)₃) 120 가 가 , Puf
 가 , Al₂(SO₄)₃ 10 %가 가

2

fs (F) Advanced Extra Strength (, 48.8%(wt/wt) Al₂(SO₄)₃) 120 가 가 , Puf
 가 , Al₂(SO₄)₃ 5 %가 가

3

fs (F) Advanced Extra Strength (, , Holland Company () 가 , 48.8%(wt/wt) Al₂(SO₄)₃ 120 가 , Puf 1 가 , Al₂(SO₄)₃ 2 %가 가

4

25 - 12 0.1 %가 가 (, , Holland Company () 가 48.8%(wt/wt) Al₂(SO₄)₃ 120 가 , 48 % Tomadol 25 - 12 0.5 % (shaft mixer) Tomadol , Puffs (F) 25 - 12 0.1 %가 가 10 % Tomadol

5

가 - 가 , 4 5 % Tomadol 25 - 12 0.05 %가

6

가 - 가 , 4 2 % Tomadol 25 - 12 0.02 %가

7

(Mallinckrodt, Paris, Kenturcky) (shaft mixer) , 120 가 , 5 % (cupric sulfate pentahydrate) , Puffs (F) Advanced Extra Strength 1 (cupric sulfate) 0.7 %가 가

8

가 - 가 , 7 0.35 %가 가

9

- 가 , 7 0.15 %가 가
 1 가 14

[1]

14 (- 1)

[2]

	a		가 a	(%)
	Al ₂ (SO ₄) ₃	CuSO ₄	Tomadol 25 - 12	
1	11.6	-	-	99.97
2	7.4	-	-	98.53
3	2.8	-	-	87.94
4	8.2	-	0.08	99.54
5	5	-	0.05	97.40
6	2.6	-	0.026	97.81
7	-	0.61	-	90.56
8	-	0.31	-	68.38
9	-	0.15	-	64.16

{ , a - 가 (%)}

2

2 , Puffs (F
 Advanced Extra Strength 1
 (slot extrusion) 2

1

- , Holland Company () 가
 (, 48.8%(wt/wt) Al₂(SO₄)₃ 3810g Procter & Gamble Co. ()
) 가 (99.77% USP Kosher Stock #51430) 4000g 12 -
 가 , 2 30 Hg , 55
 2 , 70 가 , 2 30 가
 (ice bath) 1 - ,
 (cold trap) (batch) , 1864g
 , 31.4%

6

- 가 , AACH - 7171 2 %가 가

7

it Research Labs,) 3810g (99.77% USP Kosher Stock #51430;
Procter & Gamble Co. 가) 4000g 12 - (AZG - 417, Summ

3 1 - 가 .2 30 Hg , 55 가 , 2
70 가 , 2 30
(ice bath)
(cold trap) . (batch)
1645g , 30.9% -

anced Extra Strength - , 200 가 , Puffs (F) Adv
가 , AZG - 417 10 %가 1 가

8

- 가 , AZG - 417 5 %가 가

9

- 가 , AZG - 417 2 %가 가

1 , - 가 14

[2]

14 - (- 1)

[3]

	a			
	A ₂ (SO ₄) ₃	AACH		(%)
1	10	-	-	99.8415
2	5	-	-	99.8415
3	2	-	-	80.0474
4	-	10	-	99.4988
5	-	5	-	90.0000
6	-	2	-	0
7	-	-	10	94.9881
8	-	-	5	90.0000
9	-	-	2	84.1511

{ , a - 가 (%)}

3 , 1 1 1 , 1 2 2 , 2 1
 2 2 2 (, Puffs (Advanced Extra Strength) (panel softne
 ss data)가 ,

[3]

a

[4]

	vs 1	vs 1	vs 2	vs 2
(PSU)	1 (PSU)	2 (PSU)	1 (PSU)	2 (PSU)
0.0	- 1.46	- 1.11	+ 1.53	+ 1.01

{ , a 40 }

가 , 가

(57)

1.

(a) ;

(b) 가 10¹² ,

(b) 1 가 ; 가 10^{12} 1

(c) 2 1 (face to face relationship) , 2 1 가 2 1 , 2 .

10.

9 , 가 가 .