

天然有色原綿(coloured cotton)

1.

20 綿 (whiteness) 가
50

1988
가 (tan yellowish brown), (green), (reddish brown)
(ivory) . 1994 32,400
(white cotton)

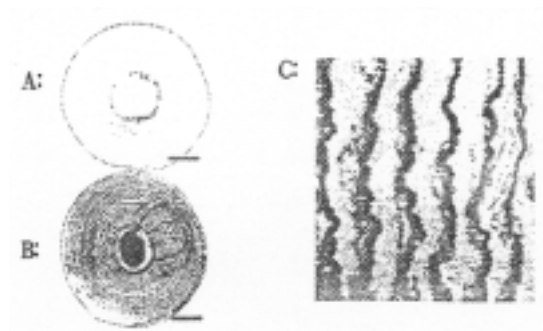
가 가

Smutz(1993)

가 가 . Yatsu

, 有機溶劑
0.6% 14 17%
. 脂肪質 4 (osmium tetroxide)
, 1 (0.02 μ m)
2 가 (1

). 가 (suberin)
 層 (1c).



< 1> A: , B: , C: 2
 ()

,
 , 20
 ω- 酸 .

가 가 .

.

Schmutz 1993

- (1,2- -4- 酸) ,
 末端基 (ω-)

- 塩基가 2

3

가

2.

1995 , (가) 3가 綿 IIC-Shirley (ASTM Standard 3818) , Instron 6022 22mm (ASTM Standard 3822). (%) . 層 . 非 (wide angle) X Graz () . (P) Weaver 收着法(sorption method) (accessibility) .

3.

3.1

. < 1> , < 2> .

< 1>

	3.7	3.8	2.6

	0.86	0.84	0.59
	76.8	74.4	50.8
(dtex)	1.57	1.65	1.38

< 2>

(cN/tex)	14.33	9.78	9.12
CV(%)	(34.8)	(36.9)	(41.6)
(%)	5.78	4.96	6.18
CV(%)	(26.6)	(23.3)	(25.3)
(cN/tex)	0.39	0.20	0.25

가 . 3가

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22mm . Meredith

10mm 1mm 54% 가 , 0.2mm

2 가 .

,

3.2

< 3> .

6 , 24

成熟綿 .

Yatsu . Conrad

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Schmutz가

< 3>

	(%)	
	6	24
	0.76	1.24
	0.60	0.82
	4.66	5.28

3.3

(iodine absorption)

內

< 4>

< 4>

	收着 (ISV) (mgI ₂ /g)		(%)	
	36.3	67.0	91.2	83.7
	89.8	104.5	78.2	74.7
	81.2	71.3	80.3	82.7

(ISV : iodine

sorption value)

ISV 가

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가

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<

4>

X

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3.4

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綿

methylene blue

着色

가

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2

1

(collar)

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가

(2).



< 2>

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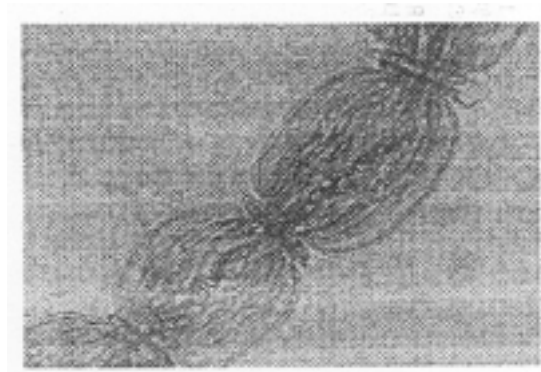
(× 126)

(3). 無色

2

,

가 . , 2
Yatsu .



< 3> ;
(× 126)

3.5 X

가 X (diffraction)

. < 5>
,

< 6> 微結晶 .

4가 單斜晶系(monoclinic) 가

가 .

< 6> ,
.

가 가 合体(coalesce)

. 가
(4).

< 5>

	a (nm)	b (nm)	c (nm)	γ ($^{\circ}$)	V (nm ³)	ρ (gcm ⁻³)
()	0.79	0.83	1.04	96.8	0.682	1.570
()	0.79	0.84	1.04	97.1	0.682	1.568
()	0.79	0.84	1.04	97.0	0.687	1.558
()	0.79	0.83	1.04	96.9	0.677	1.581

() : a, b, c : 3 , γ : 界面角,

$V(=a*b*c)$: ,

ρ :

< 6>

	a (nm)	b (nm)	c (nm)	γ ($^{\circ}$)	V (nm ³)
()	6.29	5.91	6.50	93.0	312.0
()	6.01	4.31	4.59	86.8	144.5
()	6.23	3.89	3.79	89.8	150.8
()	5.59	3.12	3.25	63.2	74.80

() : a, b, c : , γ : ,

$V(=a*b*c)$:

4.

Yatsu Schmutz

形態學的 . 2

層

4 ,

methylene blue

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重合性 가 .

24 가 .

X

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가 綿

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가 2

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가

가 .