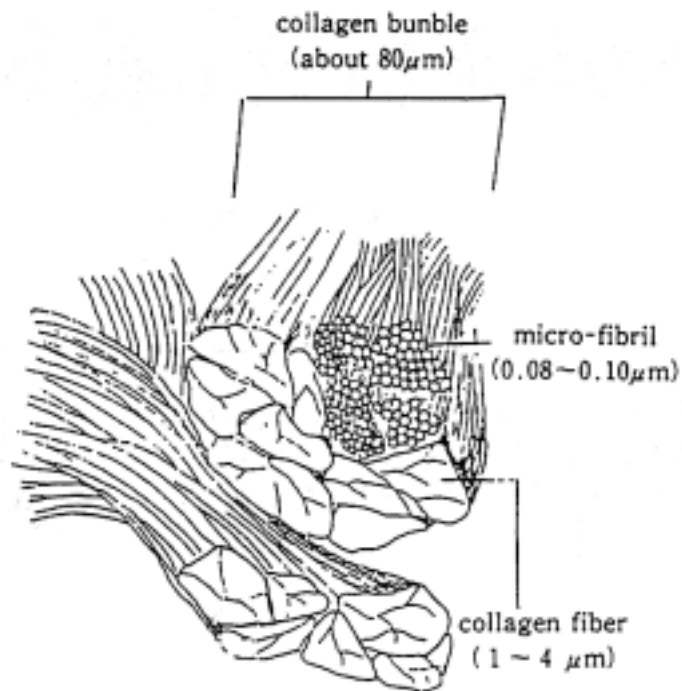


< 가가 Needle Punching >

4.

4-1.

0.1 μ m micro fibril 1~4 μ m collagen
 가 . 40 μ m collagen 가 . 40 μ m
 collagen 가 3 () 6
 collagen . , collagen
 Binder Polyurethane
 . Clarino() Ecsaine(
) 가 가 .



< 6> Micro fibril

4-2 Clarino

7 Clarino

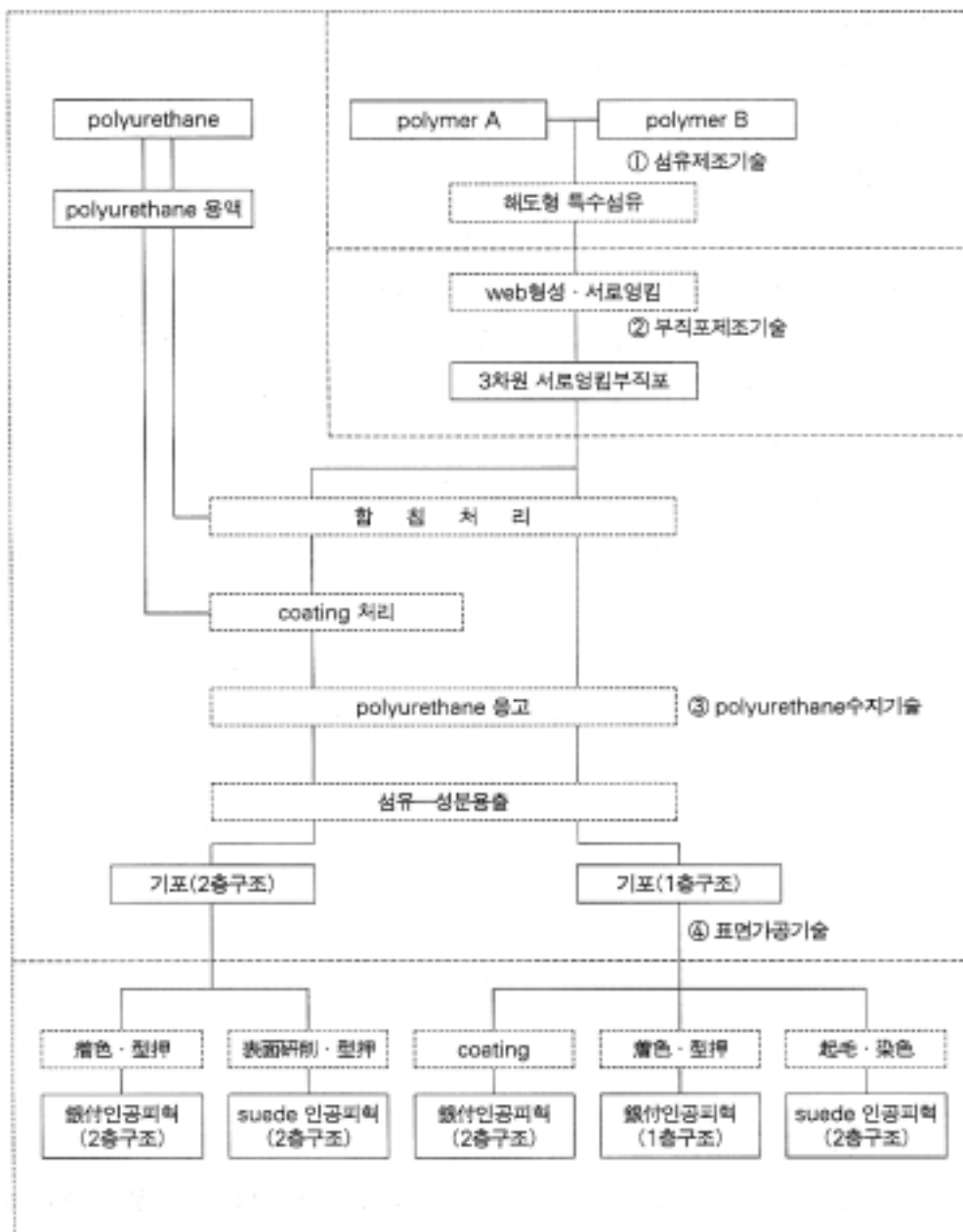
process

8

. Clarino

process

4

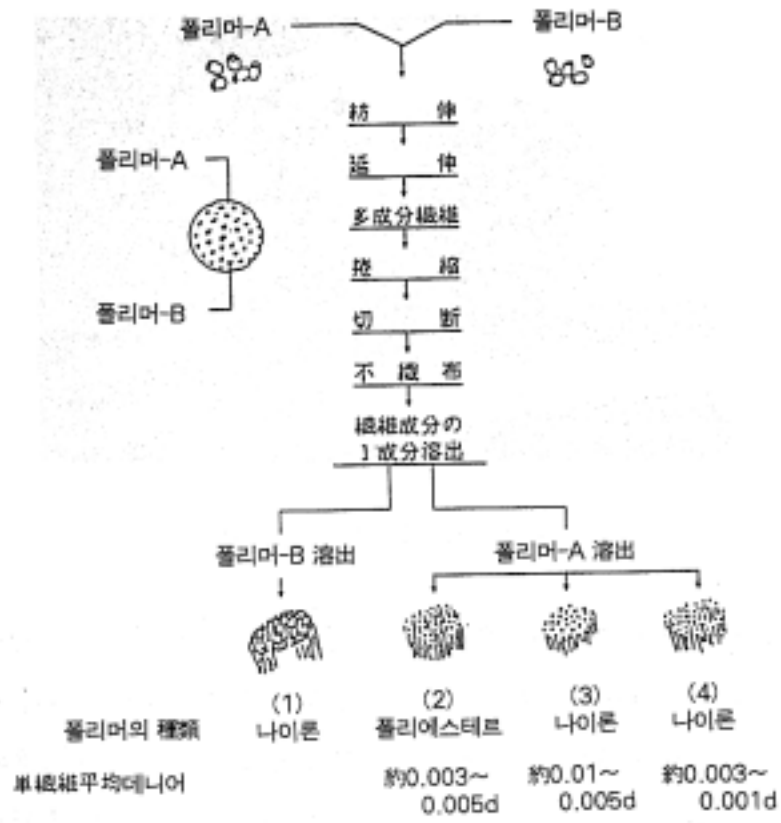


< 7>

(Clarino)

process

Polyurethane 가
 가
 4 Clarino
 . 7 2
 polymer 3
 Polyurethane .
 . 가 Polyurethane
 . 2 , 1
 , 2 ‘ , ,
 1 가 ‘ type’ ‘Suede type’
 .
 (8)
 2 polymer chip
 A가 (海) (島) 가 .
 , , ,
 가 .
 (島) polymer B 가
 . (海) polymer A
 가 .
 polymer .



用途 하드調

소프트調



多孔配列狀纖維



極細纖維集束狀纖維

< 8 >

4-3 Ecsaine()

芯-polymer

‘SAM’

9

(金太郎飴)

Nozzle

control

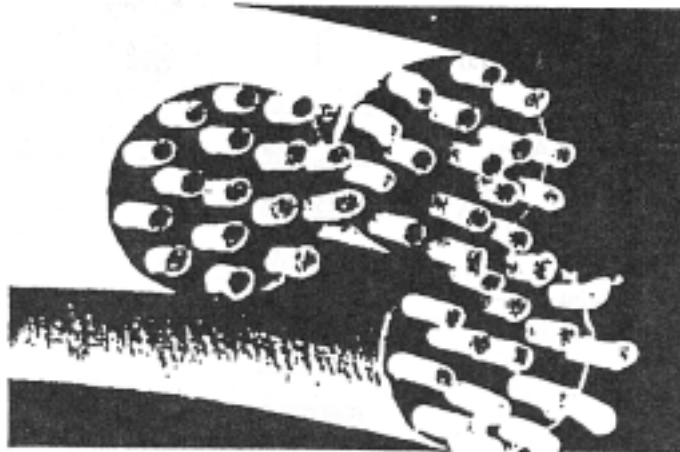
2

3

10

3

Nozzle

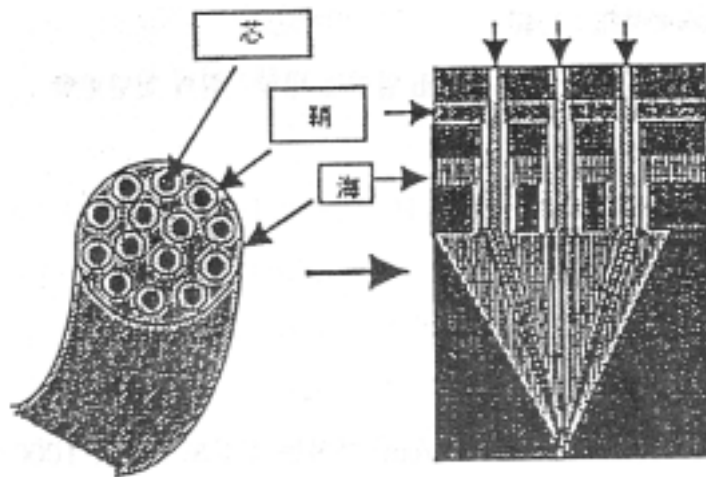


< 9>

Ecsaine() , (特公
平5-40057)

가

2 3



< 10>

Nozzle

特公平5-40057 2

card, crosslapper

sheet web .

:

: polyethylene terephthalate

: 16

: 50%()

: polystyrene

Denier : 3.5 denier

Cut : 51mm

Web 600g/cm² , Web 40mm

. Web 3000 /cm² needle punch

.

A ()

: 40 , Blade : 3 , Barb : 2

1 barb : 7mm, barb : crank

slot : 60 μ

under cut angle : 0 °

kick up : 10 μ

: 1.40

2 barb : 4mm, barb :

slot : 60 μ

under cut angle : 27 °

kick up : 15 μ

: 1.02

가 1000 /cm²

6mm, 1000~2000

/cm² 5.5mm, 2000~3000 /cm² 5mm Needle punch .

Felt 580g/cm², 0.20g/cm²

. Felt 2 가 (概)

2 . 4

, 0.20g/cm²,

0.19g/cm² 가 Felt .

3

2 Felt , .

trichloro ethylene polystyrene

. , polyurethane DMF-水 ,
 , . ,
sand paper 130
가 . Soaping,
가 .