

Non-Twisting Soft Towel

by using Kuralon K-II water soluble spun yarn

Oct. 2008

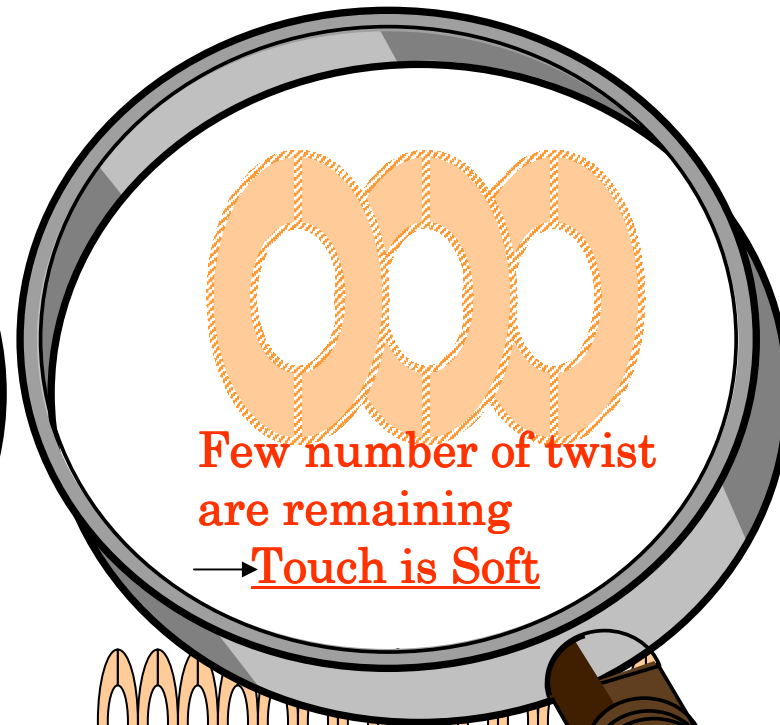
Kuraray Co., Ltd.

What is non-twisting soft towel ?



Number of twist
will be kept
→ Touch is Hard

Conventional Towel

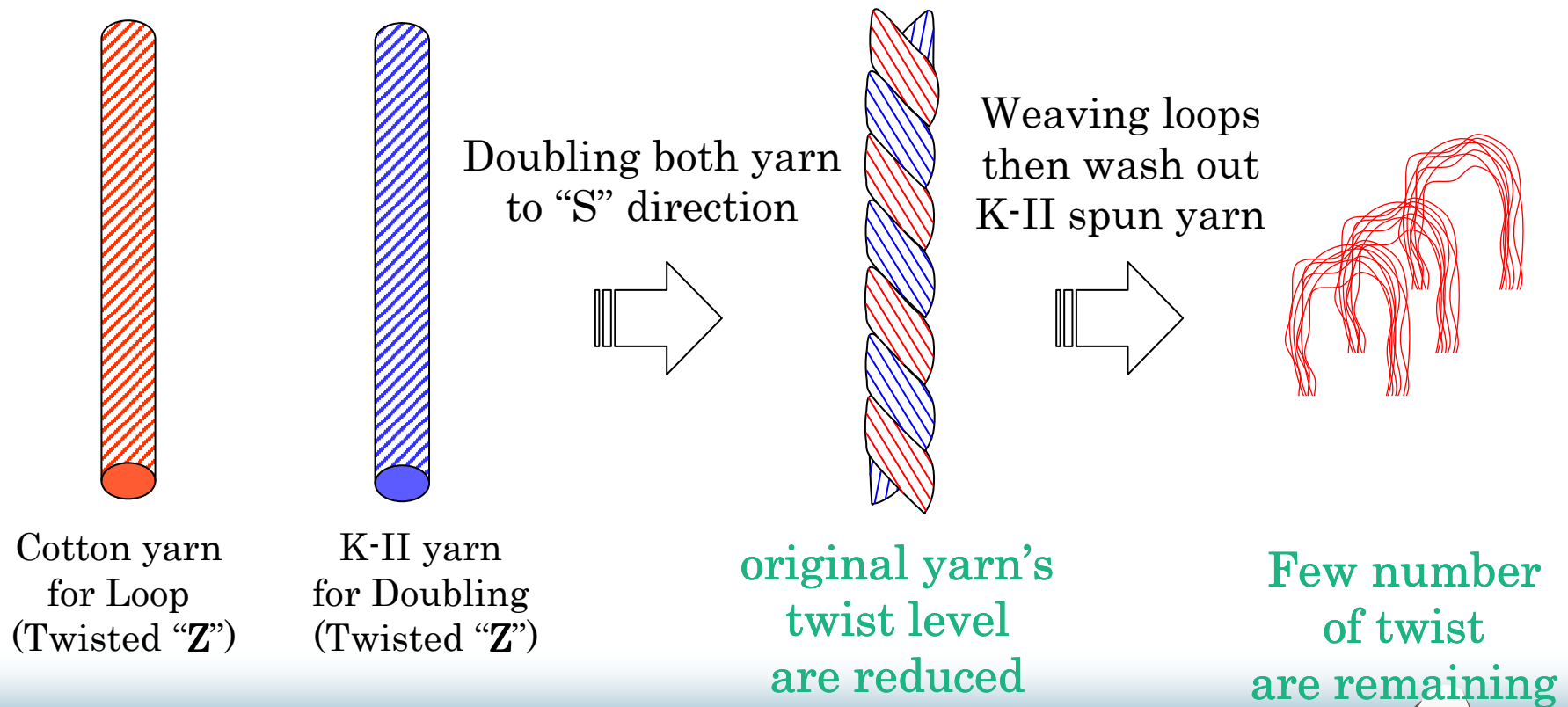


Few number of twist
are remaining
→ Touch is Soft

Non-twisting Towel

How to produce non-twisting soft towel?

- ◆ By doubling with water soluble spun yarn “Kuralon K-II”, less number of twisting is appeared.



Recommendable doubling conditions.

- ◆ In case of Cotton yarn for loop, it is twisted “Z” direction.
- ◆ Then twisted “Z” water soluble spun yarn is necessary.
- ◆ By doubling them to “S” direction, number of twist in Cotton is reduced.
- ◆ Suitable number of doubling times is around 90% against original twist number of Cotton yarn.
- ◆ Remaining number of twist of K-II will hold yarn tenacity during weaving process.

Cotton yarn ; Ne12/1(Z, c.a 800tpm)

K-II spun yarn; Ne80/1 (Z, c.a 1300tpm)

→ Doubling c.a 700tpm to “S” direction.

Recommendable water soluble spun yarn

- ◆ For non-twisting towel uses following Kuralon K-II spun yarn are working well.

Item	WN7 Ne80/1	WN4 Ne80/1
Products	Commercialized	Commercialized
Twisting	Z, 1300 tpm	Z, 1300 tpm
Strength	170 cN	145 cN
Elongation	9 %	9 %
Cone	0.945kg	0.945kg
Length	132100m/kg	132100m/kg

How to wash out Kuralon K-II spun yarn?

In case of WN7 Ne80/1

Temp. ; More than 90 degree C for 30 min.

pH ; Less than pH7 (little bit acid side is better)

Bath ratio ; More than 30 (against towel's weight)

In case of WN4 Ne80/1

Temp. ; More than 70 degree C for 30 min.

pH ; Less than pH7 (little bit acid side is better)

Bath ratio ; More than 30 (against towel's weight)

* Above conditions are based on internal test and not guaranteed figure.

Process of washing out

Yarn dye route : Scouring process

Piece dye route : Bleaching process

Please adjust conditions by trial.



Thank you for your attention.

Water Soluble Spun Yarns

- ◆ Open Fabric
- ◆ Non-Twisted Towel
- ◆ Sewing Thread
- ◆ Splicing Yarn
- ◆ Socks Separator
- ◆ Fishing Bait Net

Open Fabric



Socks Separator



Water Soluble Kuralon K-II (Staple Fibers)

TYPE	NOMINAL DISSOLVING TEMPERATURE IN WATER (deg.C)	FINENESS (dtex)	CUT LENGTH (mm)	TENACITY (cN/dtex)	ELONGATION (%)
WN2	20	1.7	38	5	20
		2.2	51		
WN4	40	1.2	38	7	15
		1.7	38		
		2.2	38,51,75B		
WN5	50	1.7	32,38	7	15
		2.2	32,38,51,75B		
WN7	70	1.7	38	7	12
		2.2	51		
WN8	80	1.4	32,38	8	11
		1.7	32,38		
		2.2	51		
		2.2	75B		
WQ9	95	1.7	38	9	10
		2.2	51.75B		

Water Soluble Kuralon K-II (Spun Yarns)

TYPE	NOMINAL DISSOLVING TEMPERATURE IN WATER (deg.C)	YARN COUNT (Ne)	Tensile strength (N/25mm)	Breaking length (Nm/g)	T.P.M
SWN2	50	20/1	690	10	Z590
		40/1	280	14	Z1140
SWN4	70	30/1	530	9	Z690
		50/1	320	11	Z980
		80/1	180	9	S1300
SWN8	90	30/1	670	9	Z690
		50/1	290	8	Z980
		80/1	190	8	S1300