Dyeing methods for wool blends

Contemporary wool dyeing and finishing

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Summary

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2. Dyeing wool/polyester blends
3. Dyeing wool/polyamide blends
4. Dyeing wool acrylic blends
5. Dyeing wool silk blends
6. Dyeing wool cotton blends

1. Introduction

Dyeing fibre blends

There are **three significant reasons** for using blends of fibres:

- **Economy** - The partial replacement of expensive fibres, e.g. wool with cheaper fibres, can make the market for a fabric wider, and increase production volumes.
- **Physical properties** - The ability to gain some of the advantages of each fibre can be of significant advantage e.g. polyester can contribute strength and wool moisture absorbency to a polyester/wool blend.
- **Aesthetics** - The attractiveness of the appearance and the handle of the fabric can be improved by the use of blends to give multicoloured fabrics, and combinations of yarns with different characteristics of lustre, crimp or denier.

2. Dyeing wool/polyester blends

Dyeing wool/polyester blends

- PES/wool blended fabrics are mainly used for apparel, i.e. suits. Blending wool with PES makes the fabric cheaper and increases durability and wrinkle-resistance. Main outlets are worsted fabrics.
- The most common blend ratio for PES/WO is 55:45 but a large variety of other blend ratios can also be found in the market.
- PES/WO blends are dyed in piece form (solid shades) or as yarn on packages (for pattern wovens).

Dyeing wool/polyester blends (cont.)

- There are a number of methods by which wool/polyester blends may be dyed, and many dye manufacturers offer products which may be used.
- The Forosyn and Forosyn SE ranges are particularly useful for dyeing blends of wool/polyester from 70% poly/30% wool to 55% poly/45% wool.
- These dyes are mixtures of premetallised and disperse dyes and can be applied to wool/polyester blends from a single bath.

Dyeing of PES/Wo with Forosyn SE dyes

Forosyn SE

Ideal dyestuff range:

- Wo/PES fibre blends 45/55 - 30/70
- piece and yarn dyeing
- colourimetry.

Arguments for this dyestuff range:

- fastness properties in line with industry requirements
- on-tone dyeing wool and polyester
- good build up
- applicable at 98-120°C
- high reproducibility
- compact range, small inventory.

Dyeing of PES/Wo with Forosyn SE dyes

Forosyn SE

Trichromatic elements
1/1 SD

Forosyn Yellow SE

Forosyn Orange SE

Forosyn Grey SE

Further Forosyn SE-dyestuffs

↓ Forosyn Yellow 4GL	Shade
↓ Forosyn Red SE	Base for red shades
↓ Forosyn Brilliant Red 3B	Shade
↓ Forosyn Dark Red HE	Base for dark red shades
↓ Forosyn Blue SE	Shade
↓ Forosyn Navy SE	106°C strong build up
↓ Forosyn Navy HEN 200	High fastness, dyeing at 110°C
↓ Forosyn Brown SE	Base for brown shades
↓ Forosyn Black SEG	106°C strong build up
↓ Forosyn Black SER	106°C strong build up
↓ Forosyn Black HEB 200	High fastness, dyeing at 110°C

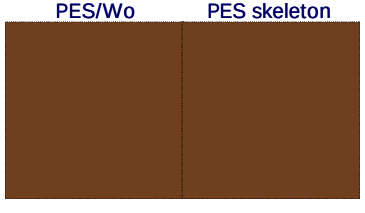
Dyeing of PES / Wo with Forosyn SE dyes

Forosyn SE

Arguments:

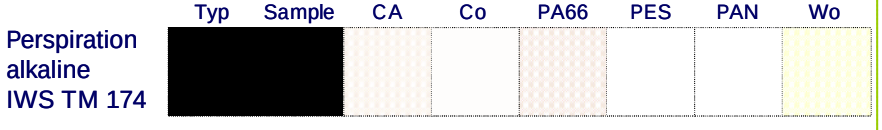
– **Colorimetry**

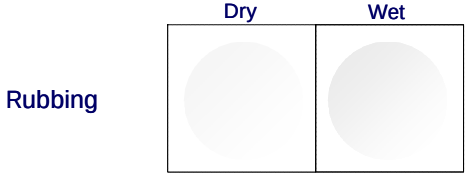
– **On - tone dyeing**



– **Fastness**

3% Forosyn Black HEB 200





Wo/PES

Wo/PES/EL

One bath dyeing with:

Forosyn HE / SE dyes

Wo/PES: Forosyn SE dyes

One bath process:

Ideal dyeing process for:

- Wo/PES fibre blends 45/55 - 30/70
- piece and yarn dyeing
- colourimetry.

Arguments for this group:

- fastness properties in line with industry requirements
- on-tone dyeing of wool and polyester
- good buildup
- applicable at 98-120 °C
- high reproducibility.

Wo/PES: dyestuff selection for Forosyn SE dyes

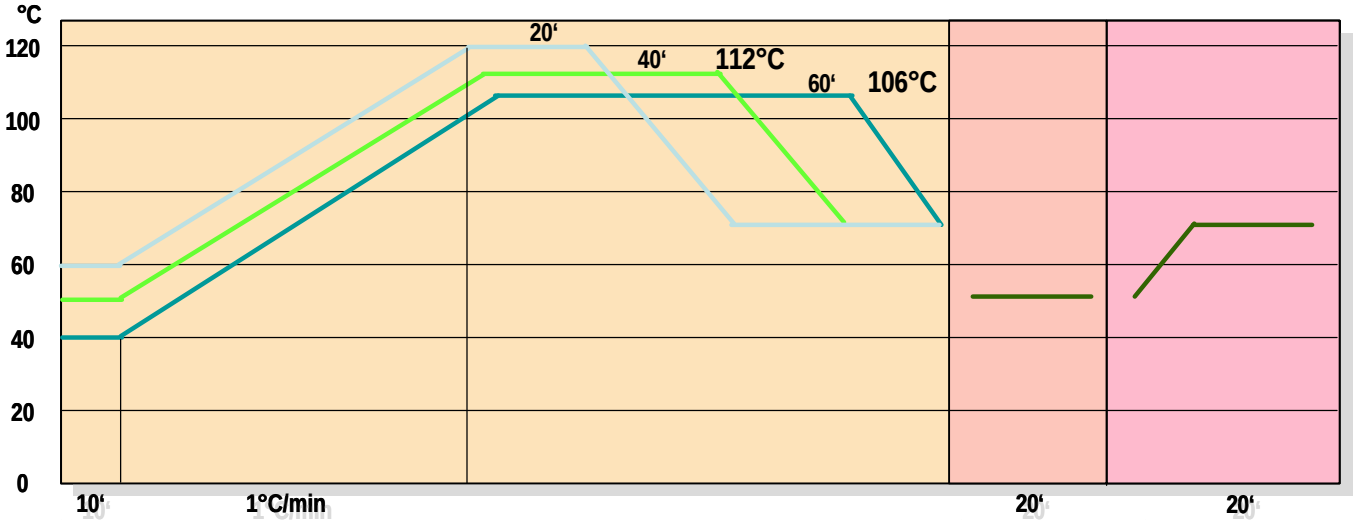
Ternary combination elements

Forosyn Yellow SE
Forosyn Orange SE
Forosyn Grey SE

Additional elements

Forosyn Yellow 4GL
Forosyn Red SE
Forosyn Brilliant Red 3B
Forosyn Dark Red HE (120°C)
Forosyn Blue SE
Forosyn Navy SE
Forosyn Navy HEN 200 (120°C)
Forosyn Brown SE
Forosyn Black SEG
Forosyn Black SER
Forosyn Black HEB 200 (120°C)

Wo/PES: dyeing process for Forosyn SE dyes



Dyestuff

Lyocol WPN liq 1ml/l

Dilatin NAN or POE see page 16

Lanasan PW Liq. 3 - 6 % (if dyeing at 120°C)

Imacol S Liq. 1 ml/l

Sodium Acetate 2 g/l

Acetic Acid pH5

only for dark shades:

1 g/l Arostit BLN Powder

0.5 ml/l Imerol XN Liq.

For medium shades:

1 ml/l Imerol XN Liq.

Wo/PES: optimised quantity of carrier

		1:6				1:10				1:20			
		Dilatin NAN		Dilatin POE		Dilatin NAN		Dilatin POE		Dilatin NAN		Dilatin POE	
	Shade												
106°C	pale	3.0	1.8	4.0	2.4	3.5	3.5	3.5	3.5	3.5	7.0	3.0	6.0
	medium	3.0	1.8	4.5	2.7	3.5	3.5	4.0	4.0	3.5	7.0	3.5	7.0
	dark	3.0	1.8	5.0	2.5	3.5	3.5	4.5	4.5	3.5	7.0	4.0	8.0
112°C	pale	2.0	1.2	1.5	0.9	2.0	2.0	1.5	1.5	3.0	6.0	1.0	2.0
	medium	2.0	1.2	2.0	1.2	2.0	2.0	2.0	2.0	3.0	6.0	1.5	3.0
	dark	2.0	1.2	2.5	1.5	2.0	2.0	2.5	2.5	3.0	6.0	2.0	4.0
120°C	pale	1.0	0.6	0.2	0.1	1.0	1.0	0.2	0.2	1.0	2.0	0.2	0.4
	medium	1.0	0.6	0.2	0.1	1.0	1.0	0.2	0.2	1.0	2.0	0.2	0.4
	dark	1.0	0.6	0.2	0.1	1.0	1.0	0.2	0.2	1.0	2.0	0.2	0.4
120°C	pale	3.0	1.8	2.0	1.2	2.5	2.5	2.0	2.0	1.0	2.0	1.5	3.0
	medium	3.0	1.8	2.0	1.2	2.5	2.5	2.0	2.0	1.0	2.0	1.5	3.0
	dark	3.0	1.8	2.0	1.2	2.5	2.5	2.0	2.0	1.0	2.0	1.5	3.0
		ml/l	%	ml/l	%	ml/l	%	ml/l	%	ml/l	%	ml/l	%

Forosyn SE dyes

Forosyn HE dyes

3. Dyeing wool/polyamide blends

Dyeing wool/polyamide blends

- Wool / polyamide blends can be dyed using a number of different dyestuff classes.
- As wool and nylon are to a degree chemically similar, they can by and large be dyed by the same dyes.

Dyeing of wool fibre blends by the exhaust process

Dyeing of polyamide fibre blends by the exhaust process

PA / Wo 

One-bath dyeing with acid dyes:

Sandolan / Nylosan
Reserving agent: Thiotan SRP liquid

One-bath dyeing with metal complex dyes:

Lanasyn / Lanasan
Reserving agent: Nylofixan PM liquid

PA / Wo: chemicals and their applications for acid dyes

Chemicals / pH / Temp. ↓	Dyestuff group		
	Sandolan E Nylosan E	**Sandolan MF Nylosan N**	**Sandolan Milling N Nylosan F**
Reserving agent	Thiotan SRP liquid 0 - 6 %		
Levelling agent	Lyogen MF liquid 0.5 - 1 %		
Coverage of barré polyamide	Lyogen PN liquid or Sandogen CN liquid 1-2 %		
pH range sodium-acetate/ acetic acid	4.5 - 4.0	5.0 - 4.5	5.5 - 4.5
Dyeing temp.:	85 - 95 °C	90 - 98 °C	95 - 98 °C

PA / Wo: Sandolan E dyes

Ideal dye group for:

- piece dyeing
- yarn dyeing in pale to medium depths
- carpet yarn in pale shades.

Arguments for this group:

- good penetration
- high migration
- good solid shade
- metal free
- elements with the highest lightfastness in the acid dyes range for both fibre components.

PA / Wo: dye selection

Sandolan E dyes

Relative dye distribution between wool and polyamide 66

Ternary combination elements:
Sandolan Yellow E-2RL SGR
Sandolan Red E-BNL SGR
Sandolan Blue E-BL 200 SGR
Sandolan Blue E-BGL 200 SGR

Shading dye for Wo:
Sandolan Blue E-HRL 180

PA
+
+
Wo

	Sandolan	Nylosan
PA ++	Yellow E-2RL SGR Yellow E-4GL 200 Blue E-BL 200 SGR Blue E-BGL 200 SGR	Yellow E-2RL SGR Yellow E-4G 200 Blue E-BL 200 SGR Blue E-BGL 200 SGR
PA +	Blue E-2GL 200	Yellow Brown E-RLC 200 Blue E-2GL 200
PA =/+	Blue E-FGL 250	Blue E-GL 250
PA =	Red E-BNL SGR Rubinole E-3GPL 180	Red E-BNL SGR Red E-BL 180
PA =/-		
PA -		
PA --	Violet E-2R 300 Fast Violet P-3RL 160	Violet E-2R 300 Violet E-3R 160
PA ---	Blue E-HRL 180	

PA / Wo: Sandolan MF dyes

Ideal dye group for:

- piece dyeing in medium to darkshades
- hank dyeing
- carpet yarn
- fully fashioned
- knitwear
- cheese dyeing.

Arguments for this group:

- best wetfastness of the migrating acid-fast dyes
- good solid shade
- metal free
- compact range
- wool protective dyeing in the isoelectric region.

PA / Wo: dye selection

Sandolan MF dyes

Relative dye distribution between wool and polyamide 66

Ternary combination*
Sandolan Golden Yellow MF-RL
Sandolan Red MF-GRLN
Sandolan Blue MF-GL SGR
* for PA 66/Wo

➢ für PA 6 / Wo :
S.G. Yellow MF-RL/
S. Yellow MF-2GLA SGR
1 : 1

Shading dyes for Wo :
Sandolan Scarlet N-GL 130

Shading dyes for PA :
Nylosan Blue N-GL 150

PA
+
+
Wo

	Sandolan	Nylosan
PA ++	Fast Blue P-RL 200	Blue PRL 200 Blue N-GL 150
PA +	Red MF-2BL SGR Fast Blue P-FL 180 SGR Blue MF-BLN SGR	Red N-2RBL SGR Brilliant Blue N-FL 180 SGR Blue N-BLN SGR
PA =	Golden Yellow MF-RL Red MF-GRLN Blue MF-2RLA SGR Blue MF-GL SGR Fast Red P-L* 150	Yellow N-3RL
PA =/-	Navy MF-RL 200	
PA -	Yellow MF-2GLA SGR Green MF-BL Fast Yellow P-L*140 Blue MF-5GL 200 SGR	Green N-GL Blue N-5GL 200 SGR
PA --	Dark Red MF-BR 150 Dark Blue MF-2B 300	
PA ---	Scarlet N-GL 130	

* low lightfastness on polyamide fibre

PA / Wo: Sandolan N and Milling N dyes

Ideal dye group for:

- loose stock dyeing
- hank dyeing
- brightening elements for lanasyn / lanasyn S dyeings.

Arguments for this group:

- metal-free
- brilliant shades
- high wetfastness.

PA / Wo: dye selection

Sandolan N, Milling N dyes

Relative dye distribution between wool and polyamide 66

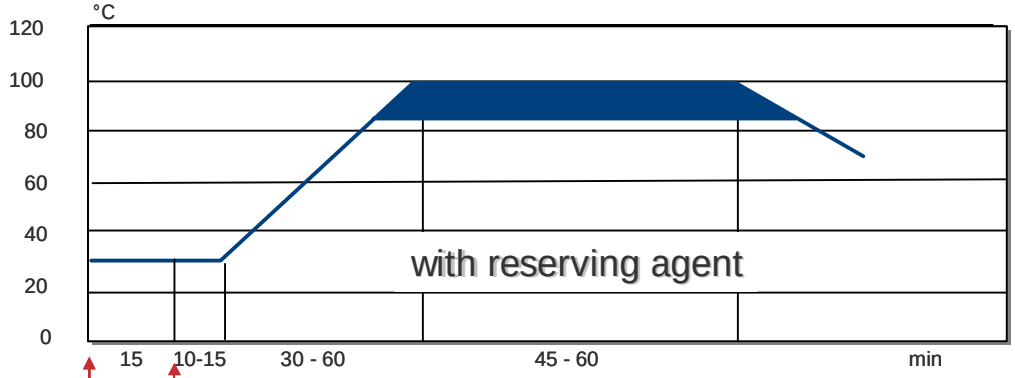
- no ternary combination
- for straight colours

	Sandolan	Nylosan
PA + +	Milling Blue N-GLN 180	Blue F-GBLN 180
PA +	Milling Red N-GS SGR	Red F-GS SGR
PA =	Milling Scarlet N-GWL 130 Milling Red N-3BLA Miling Red N-4BL Milling Red N-6B 140 Brilliant Red N-BG 125 Milling Blue N-2RFL 160 Milling Green N-BL 130	Scarlet F-3GL 130 Rot F-4BL Blue F-2RFL 160 Green F-BL 130
PA -	Milling Yellow N-L Milling Red N-2B Milling Green N-6GLN	Yellow F-L Red F-2B Brilliant Green F-6GLN
PA --	Milling Yellow N-7GL SGR Milling Red N-FBL 150 Milling Violet N-FBL 180 SGR	Yellow N-7GL SGR Red F-5B 150 Violet F-BL 180 SGR
PA ---	Brilliant Red N-3B 140 * Milling Blue N-BL 150 SGR Brilliant Blue N-5GM 210* Cyanine N-GN 360 * Cyanine N-6BN 275 *	Blue F-L 150 SGR

* low lightfastness on polyamide fibre

PA / Wo: dyeing process

Nylosan E/N/F and Sandolan E/MF/N dyes



Selected:
Sandolan and Nylosan
dyes

0 - 6 % Thiotan SRP liquid (reserving agent)
0.5 - 1% Lyogen MF liquid (levelling agent)
2 g/l sodium acetate cryst.
x ml/l acid acetic pH 5.5 - 4.0

for barré dyeing polyamide addition of
1 - 2 % Sandogen CN liquid

PA/Wo

One-bath dyeing with acid dyes:

Sandolan, Nylosan
Reserving agent: Thiotan SRP liquid

Lanasyn, Lanasan
Reserving agent: Nylofixan PM liquid

One-bath dyeing with metal complex dyes

PA / Wo: chemicals and their applications for metal complex dyes

Chemicals pH / Temp. ↓	Dyestuff group		
	Lanasan	**Lanasyn Lanasyn S**	**Lanasyn S-D**
Reserving agent	0 - 6 %	Nylofixan PM liquid 0 - 6 %	0 - 3 %
Levelling agent *		Lyocol OU liquid 0.5 g/l	
Coverage of barré polyamide		Lyogen PN liquid or Sandogen CN liquid 1 - 2 %	
Sodium acetate		1 g/l	
Acetic Acid		x ml/l	
pH range	6.0 - 5.0	6.0 - 5.0	5.0 - 4.5
Dyeing temp.:	95 - 98 °C	95 - 98 °C	95 - 98 °C

***Caution:** Use only compatible or recommended dyeing chemicals together with reserving agent, otherwise reserving action may be reduced.

PA / Wo: Lanasan dyes

Optimised metal complex dyes

Ideal dye group for:

- hank dyeing
- loose stock dyeing
- cheese dyeing.

Arguments for this group:

- good solid shade
- perfect ternary combination
- optimised root/tip distribution
- wool protective dyeing in the isoelectric region
- high end-use and processing fastness properties.

PA / Wo: dye selection

Lanasan dyes

Relative dye distribution between wool and polyamide 66

Ternary combination:
Lanasan Yellow CFA /CFC
Lanasan Red CFA/CFB
Lanasan Grey CFA

Shading dyes for PA 66:
Lanasyn Yellow 2RL 180

Shading dyes for PA 6:
Lanasyn Red 2GLN 250

PA
+
+
Wo

Group	Lanasan	Lanasyn
A	Bordeaux CFA	
B	Red CFB	Red S-GA
C	Grey CFA Red CFA Brown CFA Navy CFA Yellow CFA Yellow CFC	Yellow S-2GL
D	Brilliant Red CF-BA Blue CF	
E	Brilliant Yellow CF-BA Brilliant Blue CF-BA	

PA / Wo: Lanasyn-, Lanasyn S- , Lanasyn S-D dyes

Ideal dye group for:

- hank dyeing
- loose stock dyeing.

Arguments for this group:

- good solid shade
- wool protective dyeing in the isoelectric region
- high end-use and processing fastness properties
- economical in dark shades.

PA / Wo: dye selection

Lanasyn, Lanasyn S-, Lanasyn S-D dyes

Relative dye distribution between polyamide 66 and wool fibre

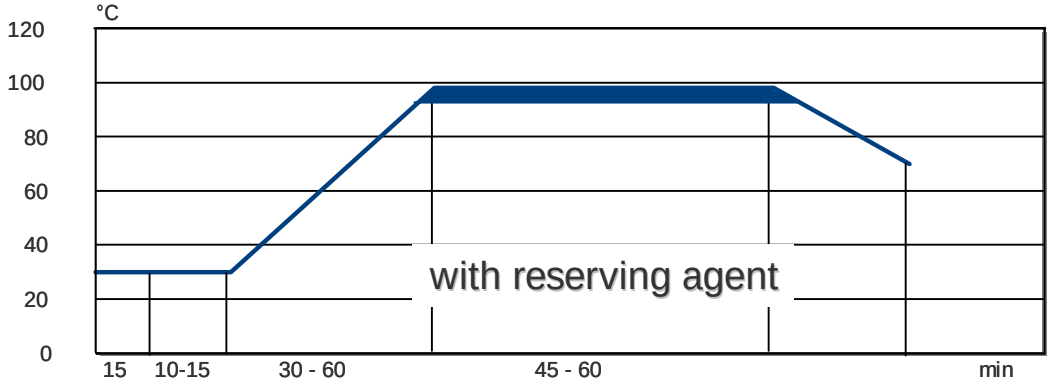
Ternary combination:
Lanasyn Yellow S-2GL
Lanasyn Red S-G SGR
Lanasyn Black S-GL

Shading dyes for PA:
Lanasyn Red 2GLN 250

Group	Lanasyn
A	Dark Violet RL 300 Bordeaux RL 200 Yellow 2RL 180 Black BRL 200 SGR
B	Yellow 2GLN 250 SGR Red 2GLN 250 SGR Grey BL 200 Grey BLRN 220
C	Yellow S-2GL Dark Brown S-GL Dark Brown S-BL Navy S-BL Grey S-BL Black S-GL Black S-DL powder / liquid Brown S-DL
D	Navy S-DNL Red S-G SGR Red S-GA Orange S-RL
E	

PA / Wo: dyeing process

Lanasan, Lanasyn-, Lanasyn S-, Lanasyn S-D dyes



Selected:
Lanasyn ,
Lanasyn S / S-D dyes

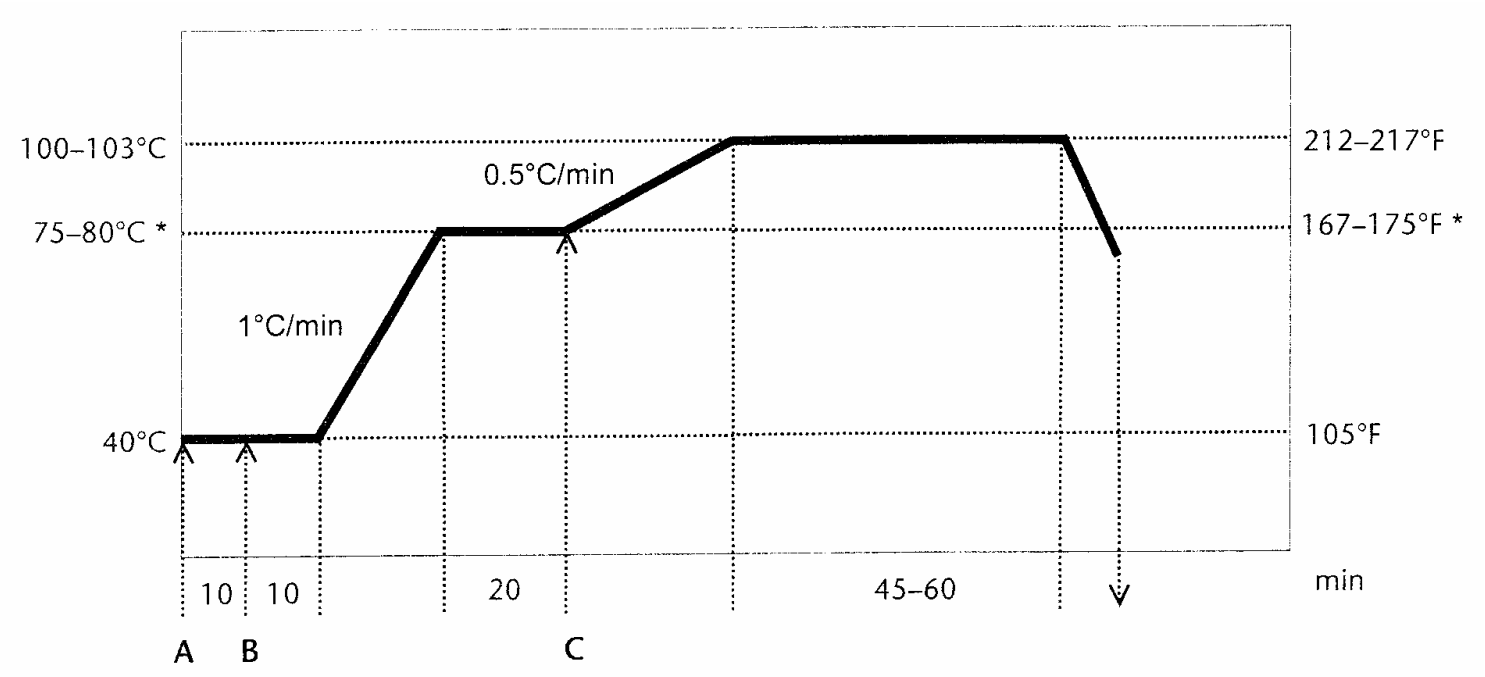
0 - 6 % Nylofixan PM liquid
1 g/l Sodium acetate cryst.
x ml/l Acetic acid pH 6 - 4.5
for barré dyeing polyamide addition of
1 - 2 % Sandogen CN liquid

4. Dyeing wool acrylic blends

Dyeing wool acrylic blends

- Wool/acrylic blends are widely used in knitted textiles for sportswear, leisurewear and men's and women's outerwear.
- These blends are mainly dyed in yarn form as packages or muffs.
- Hanks are also often dyed.

Dyeing procedures for WO/PAN blends with LANASET and MAXILON dyes



Dyeing procedures for WO/PAN blends with LANASET and MAXILON dyes

**below the glass transition point of the PAN fiber used*

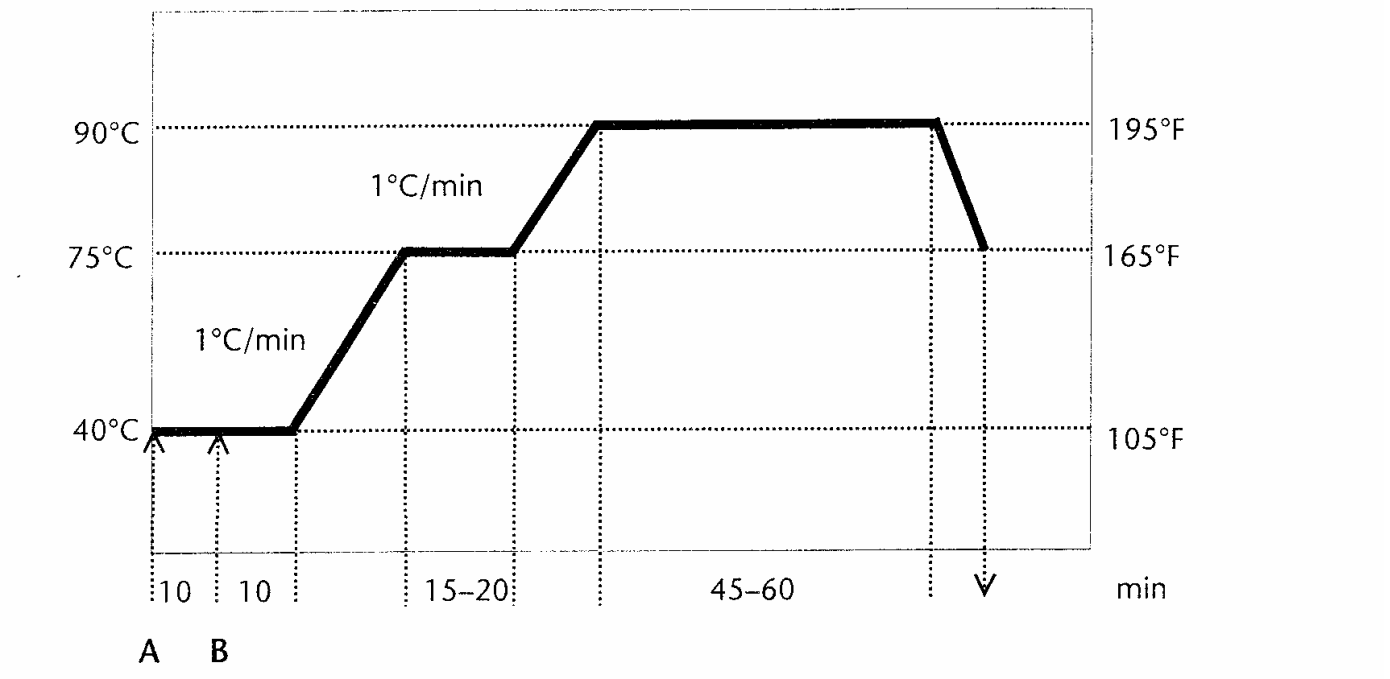
A	**0.5**	**g/l**	**CIBAFLOW CIR or ALBEGAL FFA**
	1	**g/l**	**MIRALAN Q**
	0.5-1	**%**	**ALBEGAL SET**
	0-3	**%**	**Glauber's salt anhyd.**
	1	**g/l**	**sodium acetate**
	x	**%**	**acetic acid 80%**
			pH 4.5
B	**y %**		**LANASET dyes**
C	**z %**		**MAXILON dyes**
	0-1 %		**TINEGAL MR NEW**

5. Dyeing wool silk blends

Dyeing wool silk blends

- Wool/silk blends are mainly used for woven and knitted apparel to impart a luxury character.
- A large variety of blend ratios can be found ranging from 5 to 50% silk.
- Silk is chemically related to wool and can be dyed with the same dyes.

Dyeing procedure with WO/S blends with LANASET dyes



Dyeing procedure with WO/S blends with LANASET dyes

Auxilliaries required

A	0.5 g/1	CIBAFLOW CIR or ALBEGAL FFA
	1 g/1	MIRALAN Q
	1%	ALBEGAL
SET		
	10-	
40	g/1	Glauber's salt anhyd.
	1 g/1	sodium acetate cryst.
	x %	acetic acid 80%
	pH 4.5-5.5	
B	x %	LANASET dyes

6. Dyeing wool cotton blends

Dyeing wool cotton blends

- Wool/cotton blends have been in the market place for many years but with only limited success.
- The lengthy and often costly dyeing procedures which were used have restricted widespread adoption.
- Blends of shrink resist treated wool and cotton had proved particularly difficult.

Wo / CEL

Wo / CEL / EL

One-bath dyeing with:
Direct- /acid- or metal complex dyes:

Indosol SF / Optisal
Sandolan E, - MF, Lanasan, Lanasyn

Fixation treatment: Optifix F

Two-bath dyeing with:
Reactive- /acid of metal complex dyes:
Drimarene K / HF / CL
Sandolan, Lanasan, Lanasyn

Wo/CEL: Sandolan, Lanasan, Lanasyn / Indosol SF and Optisal dyes

One-bath process:

Ideal dyeing process for:

- pale to dark shades
- yarn and piece dyeing
- women‘s outerwear
- leisurewear and shirts
- fully fashioned articles.

Arguments for this group:

- economical: two different dibres are dyed simultaneously in one bath
- short dyeing time
- good reproducibility by using reserving agent.

Wo / CEL: dye selection

Sandolan E-, MF- / Optisal, Indosol SF-dyes

Selected dyes for dyeing with reserving agent

with reserving agent for high reproducibility

- pale shades -

Wo - component

Sandolan
Yellow E-4GL 200
Yellow E-2RL SGR ¤
Red E-BNL SGR ¤
Blue E-BL 200 SGR ¤
Blue E-BGL 200 SGR ¤

CEL - component

Indosol		**Optisal**	
Yellow SF-GL 160	¤	Yellow 2RL SGR	¤
Rubinole SF-RGN SGR	¤	Scarlet BL	¤
Blue SF-2G 400 SGR	¤	Royal Blue 3RL SGR	
Grey SF-BL 200		Blue RL	¤
		Green BL	

- medium/dark shades -

Sandolan
Golden Yellow MF-RL ¤
Red MF-GRLN ¤
Red MF-2BL SGR
Blue MF-GL SGR ¤
Blue MF-2RLA
Green MF-BL

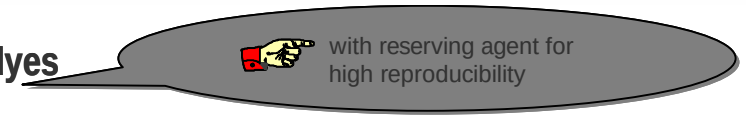
Navy MF-RL 200

Indosol		**Optisal**	
Rubinole SF-RGN SGR	¤	Yellow 2RL SGR	¤
Blue SF-2G 400 SGR		Scarlet BL	
Grey SF-BL 200		Red R SGR	¤
Violet SF-B 220		Red 7B	
		Royal Blue 3RL SGR	
Navy SF-GLE	¤	Blue RL	¤
Navy SF-BL 240 SGR		Dark Blue GL	¤
		Green BL	

¤ = Ternary combination elements

Wo / CEL: dye selection

Lanasan, Lanasyn / Optisal, Indosol SF-dyes



Selected dyes for dyeing with reserving agent

- medium/dark shades -

Wo - component

Lanasan
Yellow CFA ¤
Yellow CFC ¤
Red CFA ¤
Red CFB
Grey CFA ¤
Brown CFA
Blue CF

Navy CFA

Lanasyn
Black S-GL

Brightening elements:

Lanasan
Brilliant Yellow CF-BA
Brilliant Red CF-BA
Brilliant Blue CF-BA

¤ = Ternary combination elements

CEL - component

Indosol
Rubinole SF-RGN SGR ¤
Blue SF-2G 400 SGR
Grey SF-BL 200
Violet SF-B 220

Navy SF-GLE ¤
Navy SF-BL 240 SGR

Black SF-RL
Black SF-BLN SGR

Optisal
Yellow 2RL SGR ¤
Scarlet BL
Red R SGR
Red 7B
Royal Blue 3RL SGR
Blue RL
Dark Blue GL
Green BL

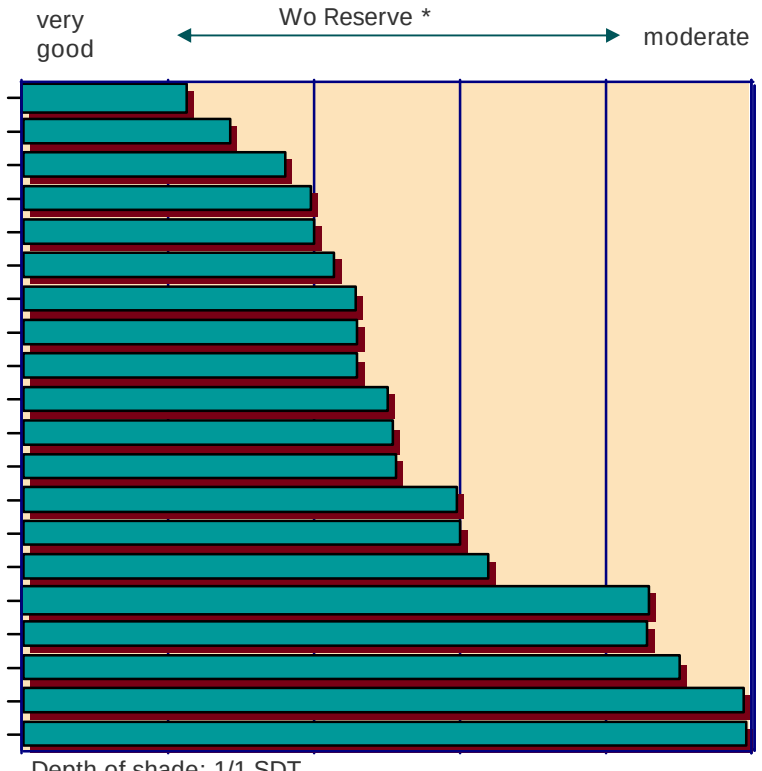
Wo/CEL: dye selection for Optisal, Indosol SF dyes

Dyeing Conditions:

Dyestuff	x %
Nylofixan P/PM	2 %
Sodium Sulphate	10 g/l
NaAc/HAC	pH 5
Liquor Ratio:	15:1
1 h at 100°C	

Dyed on separate material in the same dye liquor

Indosol Grey SF BL 200
Indosol Yellow SF-GL 160
Indosol Rubinole SF-RGN SGR
Indosol Brown SF-BR SGR
Indosol Navy SF-GLE (N)
Indosol Blue SF-2G400 SGR
Optisal Royal Blue 3RL SGR
Indosol Black SF-BLN SGR (BK)
Indosol Black SF-RL (BK)
Indosol Navy SF-BL 240 SGR (N)
Optisal Dark Blue GL
Optisal Red 7B
Optisal Red RSGR
Indosol Blue SF-GL 370
Optisal Orange GL
Optisal Yellow 2RL SGR
Optisal Blue RL
Optisal Yellow GL SGR
Optisal Scarlet BL
Indosol Violet B 220

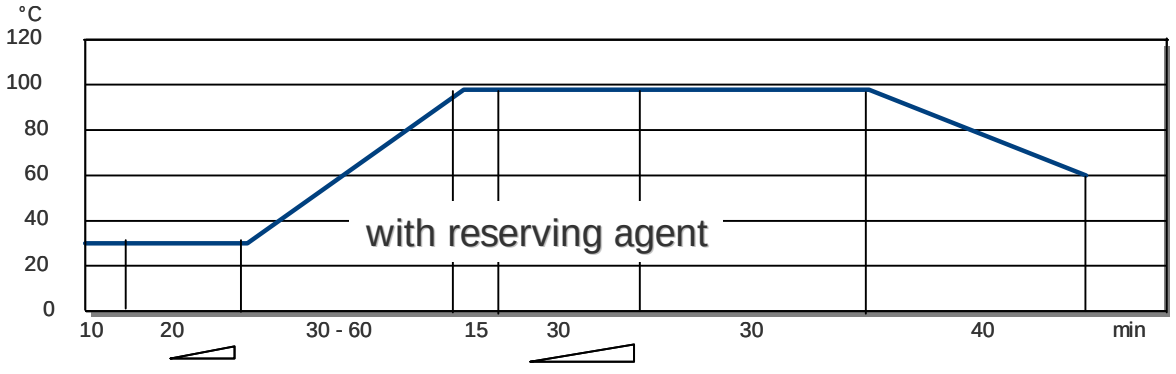


Depth of shade: 1/1 SDT
N = as Navy, BK= as Black

* The Wo reserve also depends on: WO quality, max. dyeing temperature

Wo/CEL: dyeing process

Sandolan E, MF, Lanasan, Lanasyn / Optisal, Indosol SF-dyes



B1)
Glauber salt calc.

Sandolan-, Lanasan-, Lanasyn-dyes		
Indosol SFor Optisal dyes		
Nylofixan PM liquid	2.0	%
Lyocol OU liquid	0.5 - 1.0	g/l
Sandozin AM paste	0.3 - 0.5	gl/l
Sodium acetat	2.0	g/l
Acetic acid	x	ml/l
pH-value	4.5 - 6.0	
Glauber salt calc.	0 - 5	g/l
Glauber salt calc.	5 - 15	g/l

B1)

Fastness Improvement

Bath additions are 25 - 30 °C with:
Glauber salt calc. or
Common salt 0 - 5 g/l
Optifix F liquid 0.5 - 2 %
pH (with Ammonia) 8-8.5

heat up within 10 min. to 40°C*
and treat for 20 min.

*Fixation for Viskose at 50°C

Wo/CEL

One-bath dyeing with:
Direct- /acid or metal complex dyes:

Indosol SF / Optisal
Sandolan E, - MF, Lanasan, Lanasyn

Fixation treatment: Optifix F

Two-bath dyeing with:
Reactive- /acid- or metal complex dyes:

Drimarene K / HF / CL
Sandolan, Lanasan, Lanasyn

Wo/CEL: Drimarene K / Sandolan-, Lanasyn dyes

Two-bath process

Ideal dyeing process for:

- medium to dark shades
- knitting yarns
- women‘s outerwear
- leisurewear and sportswear
- fully fashioned articles.

Arguments for this group:

- high wetfastness
- brilliant shades.

Wo/CEL: dye selection

Drimarene K / Sandolan-, Lanasyn dyes

1st Phase
CEL- component

2nd phase
Wo-component

Ternary combination

pale shades | medium to dark shades | pale shades | medium to dark shades

Drimarene
Orange K-GL
Rubinole K-5BL
Blue K-2R

Drimarene
Orange K-GL
Brilliant Red K-4BL
Navy K-BNN

Sandolan
Yellow MF-RL
Red MF-2BL
Red MF-GRLN
Blue MF-GL

Lanasan
Yellow CFA
Yellow CFB
Red CFA
Grey CFA

Brilliant shades for high wetfastness
pale- dark

Drimarene K range

Dye selection according to the shade

Drimalan F- range

Sandolan N-, milling N dyes

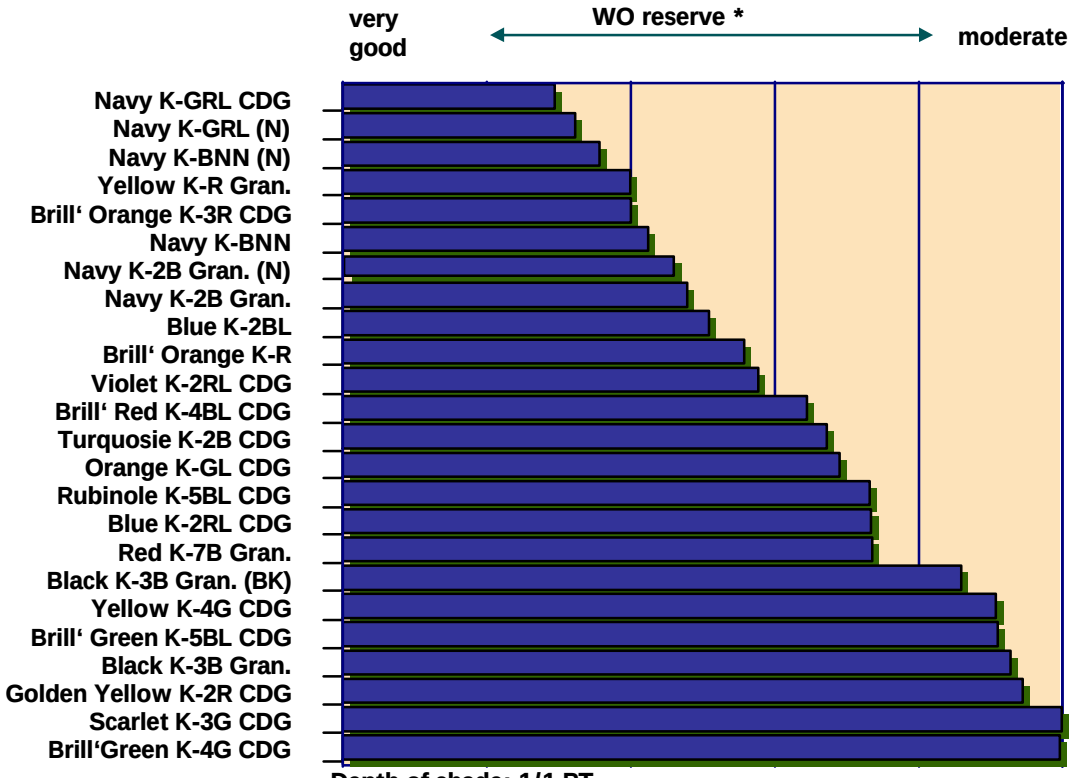
Dye selection according to the shade

Wo/CEL: dye selection for Drimarene K dyes

WO reserve

Ternary combination elements:
light shades
Drimarene Orange K-GL CDG
Drimarene Rubinole K-5BL CDG
Drimarene Blue K-2RL CDG

dark shades
Drimarene Orange K-GL CDG
Drimarene Brilliant Red K-4BL CDG
Drimarene Navy K-BNN



Depth of shade: 1/1 RT
BL = as 1/1 SD Blue, N = as Navy, BK= as Black

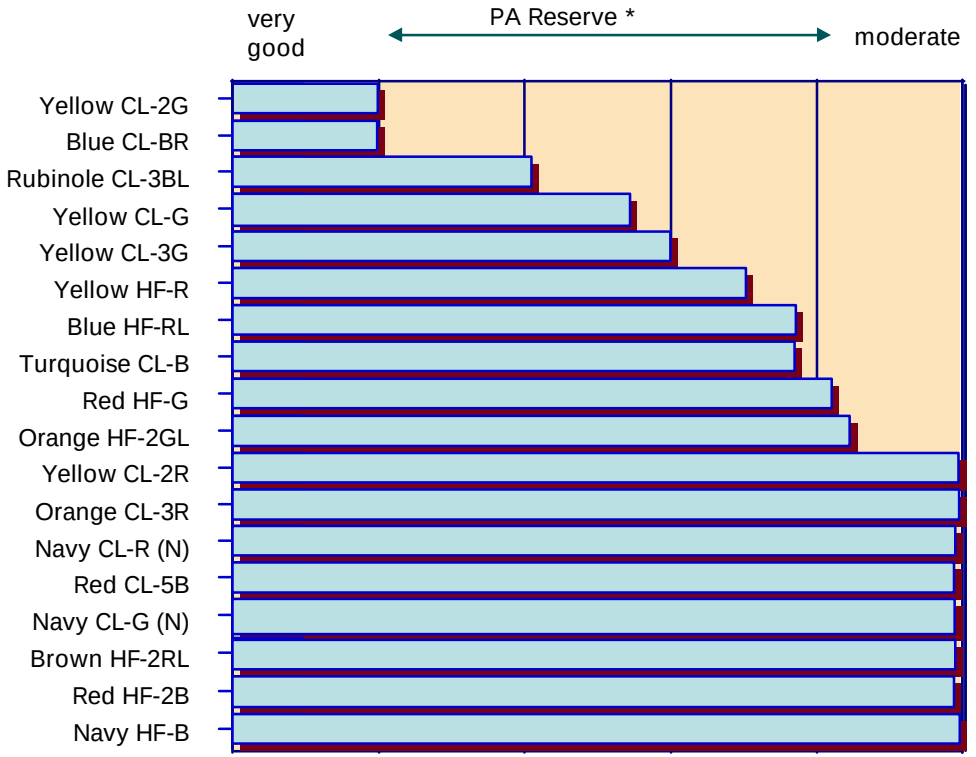
Dyeing Co with Reactive dyes under usual conditons followed by 2 x rinse 10 min at 50°C, than blind overdyed

Wo / CEL: dye selection for Drimarene CL / HF dyes

Wo Reserve

Ternary combination elements:
Drimarene CL
Drimarene Yellow CL-2G
Drimarene Rubinole Cl-3BL
Drimarene Blue CL-BR

Ternary combination elements:
Drimarene HF
Drimarene Yellow HF-R
Drimarene Red HF-G
Drimarene Blue HF-RL



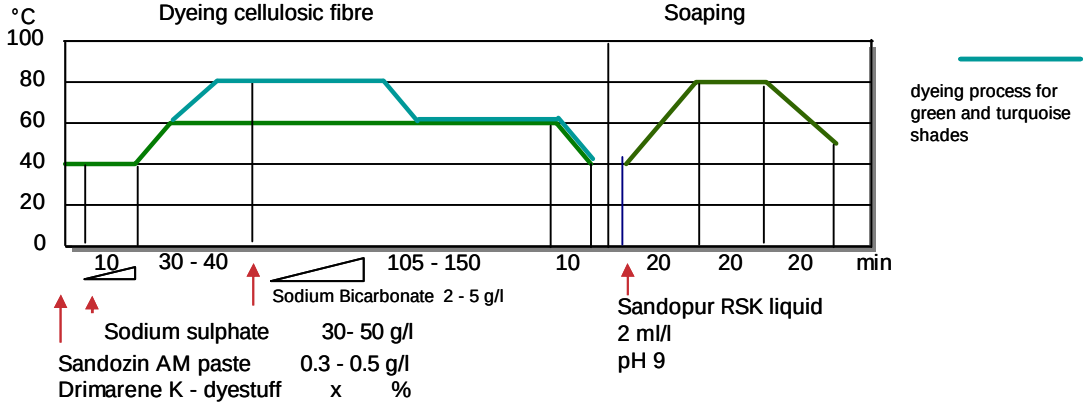
Depth of shade: 1/1 SD
N = as Navy

Dyeing Co with Reactive dyes under usual conditons
followed by 2 x rinse 10 min at 50°C, than blind overdyed

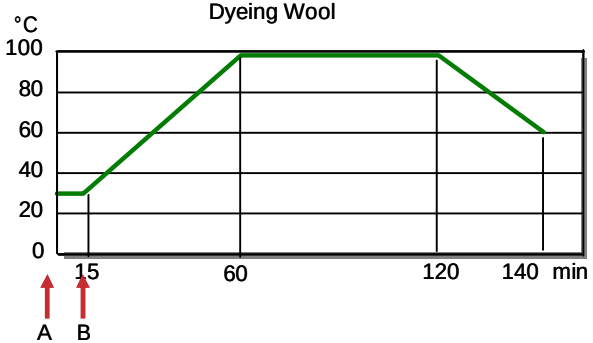
Wo/CEL: dyeing process for Drimarene K-/ Sandolan-, Lanasyn dyes

Two-bath process

1st phase



2nd phase



A	Sodium acetate	2 g/l
	Lyogen MF liquid or	1 %
	Lyogen FN liquid	1 %
	Sandolan- or Lanasyn- dyestuff	x %
B	Acetic acid pH 4.5 - 6.0	