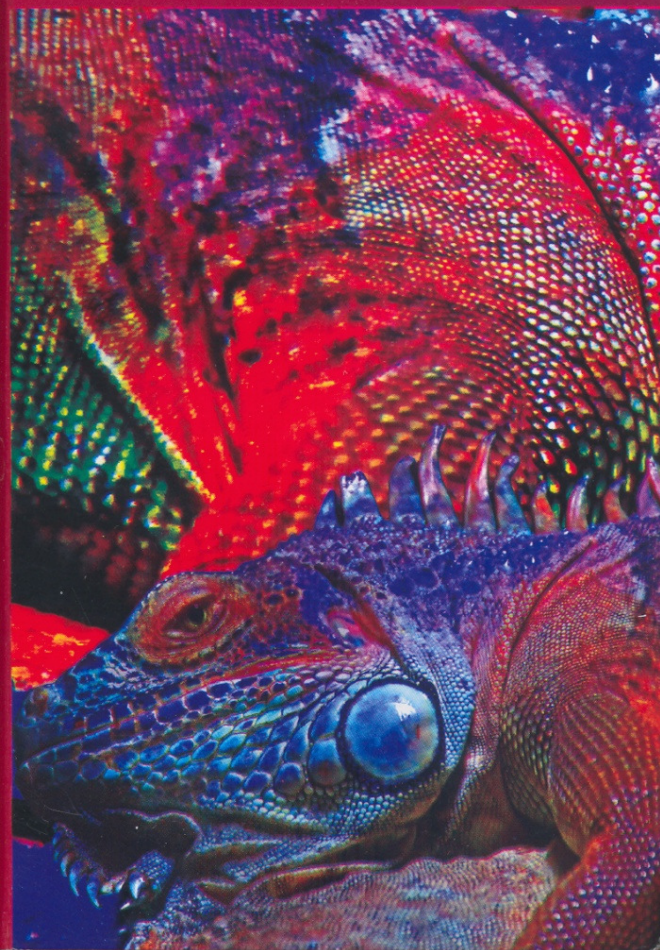




**Remazol® / RGB / Ultra RGB / RR**  
Reactive dyes for all requirements and processes



# Remazol®

## Dyeings on bleached, mercerized cotton

Golden Yellow RGB	Golden Yellow RGB conc	Ultra Yellow RGBN	Orange RGB	Ultra Orange RGBN	Scarlet RGB	Ultra Carmine RGB	Ultra Crimson RGB	Ultra Red RGB

Physical form		Powder	100%	100%	100%	100%	100%	100%	100%	100%	100%
		Liquid									
1/1 S.D. g/kg dyestuff (CPB process, bleached,merc. CO)	g/kg		18	18,5	15	16	11,7	24,4	8,6	9,2	14,6
1/1 S.D. % dyestuff (LR 10:1, exhaust process, bleached CO)	%		2,2	2,3	2,0	1,7	1,1	1,9	1,4	1,5	1,9
Neutral solubility (without salt)	g/l		100	100	100	100	100	100	100	100	100
Suitability for processes	Exhaust		X	X	X	X	X	X	X	X	X
	Exhaust (migration new)		-	-	X	-	X	-	X	-	-
	CPB		X	X	X	X	(X)	X	X	X	X
	CPB (tropic new)		X	X	X	X	X	-	X	-	X
	PDPS		X	X	X	X	(X)	X	X	X	X
	PDS		X	X	X	X	-	X	X	X	X
	PS		X	X	X	X	-	X	X	X	X
	Econtrol®		X	X	X	X	(X)	X	X	X	X
	Pad-dry-thermofix		X	X	X	X	-	X	X	X	X
Light Fastness (Xenotest) ISO 105-B02	1/12 S.D.	S	4-5	4-5	4-5	4	3	3	4-5	3-4	3-4
	1/1 S.D.	S	5-6	5-6	5	5	4-5	3-4	4-5	4-5	4
Light Fastness AATCC 16E (in 1/1 S.D.)	20 h	S	5	5	4	5	4	3-4	4	4	4
	40 h	S	4-5	4-5	3-4	4-5	4	3	3-4	3-4	3-4
Fastness to perspiration (alkaline) / ISO 105-E04		S	5	5	5	5	5	5	4-5	5	5
		CO	4-5	4-5	5	5	5	5	4-5	5	4
		WO	5	5	5	5	5	5	4-5	5	4-5
Fastness to washing 60°C / ISO 105-C06-C25 Multifibre		S	5	5	5	5	5	5	4-5	4-5	5
		CO	5	5	5	4	5	4-5	4-5	4	4-5
		PA	5	5	5	5	5	5	4-5	5	5
AATCC 2A wash fastness		S	5	5	5	5	5	5	4-5	4-5	4-5
		CO	5	5	5	5	5	4	5	4	5
	WO	5	5	5	5	4	4-5	5	4-5	5	
Simulation of multiple wash with bleach activator at 60°C / ISO 105-C09	S		5	5	4-5	3-4	4-5	5B	4-5	4-5	4-5
Fastness to chlorinated water / ISO 105-E03, 20 ppm active chlorine	S		3	3	4-5	4-5	3-4D	5	4-5	4-5	4-5
Fastness to nitrogen oxides ISO 105-G01	1 cycle	S	3	3	5	5	4-5	5	4-5	4	4-5
	3 cycles	S	2	2	5	5	4D	5	4-5	4B	4-5
Dischargeability (White discharge 1, potash)			+++	+++	+++	-	+++	-	+++	-	-



Deep Red RGB	Red RGB	Ultra Rubine RGB	Blue RGB	Navy RGB	Ultra Navy Blue RGB	Carbon RGB	Deep Black RGB	Midnight Black RGB	Onyx RGB	Yellow RR	Orange RR	Red RR	Blue RR	Luminous Yellow FL	Brilliant Yellow 4GL	Brilliant Yellow 3GL	Brilliant Yellow GL	Yellow GR	Yellow R	Golden Yellow RNL	Yellow 3RS	Orange BN	Brilliant Orange 3R spec	Brilliant Red BB	Red RB	Brilliant Red 3BS	
100%	100%	100%	100%	150%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	150%	133%	100%	150% 50%	150%	100%	100%	150%	133%	150%	
21,0 2,1	29,0 3,2	9,0 1,5	22,0 2,4	16,0 1,6	38,0 3,7	60,0* 6,0*	60,0* 6,0*	35,0* 4,0*	35,0* 4,0*	18,0 2,5	23,0 2,3	24,0 2,6	22,0 2,4	74,0 9,7	36,0 3,6	24,0 2,4	18,0 1,8	15,0 2,0	22,0 3,3	15,0 2,0	21,6 2,7	17,0 2,1	20,0 3,2	25,0 2,9	25,0 2,8	21,0 2,6	
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	(X)	X	X	X	X	X	X	X	X	X	X
-	-	-	X	X	-	-	X	-	-	-	-	X	X	-	-	X	-	-	-	-	-	-	-	-	-	-	-
X	X	X	X	X	X	(X)	X	X	X	(X)	X	X	X	*	(X)	-	X	X	X	X	X	X	X	X	X	X	X
X	X	-	X	X	-	-	X	-	-	-	-	-	(X)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	(X)	-	X	X	X	X	X	X	(X)	X	X	X	X
X	X	X	-	X	-	X	X	X	X	-	-	-	-	-	(X)	-	(X)	(X)	(X)	(X)	X	X	-	(X)	X	X	X
X	X	X	X	X	X	X	X	X	X	(X)	X	X	X	X	(X)	-	X	X	(X)	(X)	X	X	(X)	X	X	X	X
X	-	X	X	X	X	-	X	X	X	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	X	X	
-	4	3-4	3-4	-	-	-	-	-	-	3-4	3-4	4	3-4	2-3R	5	5	5	4-5	4-5	4	4-5	3-4	4	4	3-4	3	
5	5	4-5	5	4**	4-5**	4-5***	5***	4***	4***	4	4-5	4-5	5	4R	6	5	6-7	5-6	6	5	5-6	4	4-5	5	4-5	4	
4-5	4-5	4	4-5	4	4	5	5	4-5	4-5	4-5	4-5	4-5	4-5	3-4R	5	5	5	5	5	4-5	3-4	4-5	4-5	4-5	4-5	4	
4	4	3-4	4	3-4	3-4	5	5	4	4	4	4	4	4	3-4R	5	5	5	4-5	5	4	3	4	4	4	4	3	
5	5	5	5	5	5	5	4-5	5	5	4-5	5	5	5	5	5	5	5	5	4-5	5	5	5	5	5	5	5	
4-5	4-5	5	5	5	5	4-5	4-5	5	5	5	4-5	5	5	4-5	5	5	5	5	5	5	5	5	5	5	5	5	
4-5	4-5	5	5	5	5	5	4-5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
5	5	5	5	5	5	5	4-5	4-5	4-5	5	5	5	5	5	5	5	5	5	4-5	5	5	5	5	5	5	5	
5	5	4-5	5	4-5	4-5	4-5	4	5	5	5	4-5	5	5	5	5	5	5	5	5	5	5	5	5	4-5	5	5	
5	5	4-5	5	5	4-5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	4-5	5	5	5	5	5	
5	5	5	5	5	4-5	5	4-5	4-5	4-5	5	5	5	5	5	5	5	5	5	4-5	5	5	5	4-5	5	5	5	
5	5	4-5	5	5	5	5	4-5	5	5	5	4-5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
5	5	5	5	5	5	5	4-5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
3-4	4	4-5	4	4	3-4G	4-5	4	3R	3R	5	5	3-4	4	4-5	4-5	4-5R	4-5	4-5	4-5	4-5	4-5R	4-5	2-3	1-2	3	4B	
3-4B	4B	4-5	4	3-4	4-5	4-5B	4	3	3R	2GD	4-5	3	4	4-5	4-5	4R	4-5	2-3	2	3-4	4-5	2	3-4	2-3B	3-4	4-5	
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5	4-5	4	4-5	4-5	4-5	4-5	4	4-5	4-5	3-4D	5	5	4-5	5	5	5	5	4-5	4-5	2D	4-5	4-5	4-5	4-5	5	5	
-	-	-	++	+++	+++	-	+++	+++	+++	+++	-	-	++	-	+++ <sup>(2)</sup>	+++	++	+++	+++	+++	-	+++	+++ <sup>(1)</sup>	+++	-	-	



Brilliant Red F3B	Red FLM	Red 3B	Brilliant Violet 5R	Brilliant Blue RN	Brilliant Blue R spec	Brilliant Blue BB	Turquoise Blue G	Turquoise GN	Green 6BT	Navy Blue GG	Dark Blue SLT	Black B	Black RL	Deep Black N 150	Deep Black GWF
100% 25%	100%	100%	100%	150%	100%	133%	133%	266%	133%	133%	100%	133% 50%	100% 33%	150% 75%	100%
29,0 3,4	25,0 -	18,0** 2,3**	30,0 4,2	43,0 4,3	43,0 4,3	36,0 3,6	54,0 6,5	27,0 3,3	55,0 7,9	18,0 1,8	30,0 3,6	18,0 1,5	25,0 2,8	59,0* 5,9*	60,0* 6,1*
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
X	-	(X)	X	X	X	X	X	X	X	X	X	X	X	X	X
-	-	-	-	-	-	-	X	X	X	-	-	-	-	-	X
X	X	X	X	X	(X)	X	X	X	X	X	X	X	X	X	X
-	-	-	-	-	-	(X)	(X)	(X)	(X)	-	-	-	-	-	X
(X)	(X)	X	X	X	(X)	X	X	X	X	X	X	X	X	(X)	X
-	-	-	-	X	-	X	(X)	(X)	(X)	X	-	X	-	-	X
X	(X)	(X)	X	X	-	X	X	X	X	X	X	X	X	X	X
-	-	-	-	-	-	-	X	X	X	(X)	-	X	-	-	X
3	6	5-6	4	6	6	5-6	4-5	4-5	6	3	5-6	-	4	-	-
4-5	6-7	7	6-7	7	7	7	6	6	7-8	4-5**	6-7	4	6	5***	5-6***
4	5	5	5	5	5	5	4-5	4-5	5	4	5	4	5	5	5-6
3-4	5	5	5	5	5	5	4	4	4-5	3-4	5	3-4	4-5	5	5
5	5	3B	4B	5	5	4D	4G	4G	5	5	5	5	5	5	5
4-5	5	5	5	5	5	4-5	4-5	4-5	4-5	4-5	5	4-5	4-5	5	4-5
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4-5	5	5	5	5	5	5	2-3	2-3	2-3	4-5	4-5	4-5	4-5	4-5	5
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	3-4	3-4	3-4	5	5	5	5	5	5
5	5	5	5	5	5	5	4-5	4-5	4-5	5	5	5	5	5	5
4-5	4B	4-5B	4-5	4R	4R	4-5	4	4	4-5	4-5	3	2-3	3-4R	4-5R	4-5R
4-5	5	5	5	4-5	4-5	4-5	3-4Y	3-4Y	4	3-4	3-4	4	2-3	4	4-5B
5	4-5	5	5	3-4D	3-4D	5	4-5	4-5	5	5	4-5	5	5	5	5
5	4-5	5	5	2B	2D	4-5	4-5	4-5	4-5	4-5	4	5	5	5	5
+++	+++	-	+	-	-	+ <sup>1)</sup>	-	-	-	+++ <sup>1)</sup>	-	+++ <sup>1)</sup>	+	+++ <sup>1)</sup>	+++

## General Information

### Key

- X Suitable without limitation
- (X) Suitable with limitation
- \* Special process
- Not recommended

### Notes to fastness data

All fastness data were evaluated in 1/1 standard depth on bleached, mercerized woven cotton.

Additionally light fastness (ISO 105-B02) was evaluated in 1/12 standard depth on bleached and mercerized woven cotton.

- S = change in shade
- CO = staining on cotton
- WO = staining on wool
- PA = staining on polyamide
- \*\* = tested in standard depth navy
- \*\*\* = tested in standard depth black
- = not recommended

Y=Yellower R=Redder B=Bluer G=Greener D=Duller

### Dyestuff concentration for standard depth

- \* = concentration for standard depth, Black'
- \*\* = concentration for 1/3 standard depth

### Dischargeability

- +++ = dischargeable at 1/1 S.D.
- ++ = dischargeable at 1/2 S.D.
- + = dischargeable at 1/3 S.D.
- = not dischargeable
- 1) may yellow under extreme conditions
- 2) pronounced yellowing



## Remazol<sup>®</sup> Product Profile

### Remazol<sup>®</sup> RGB / Ultra RGB

- High tinctorial strength combined with very good build-up behavior
- High fixation values with excellent wash-off properties
- Excellent lab to bulk and bulk to bulk reproducibility
- Very economical dyeing processes for deep shades
- Suitable for exhaust, cold pad batch and continuous processes

### Remazol<sup>®</sup> RR

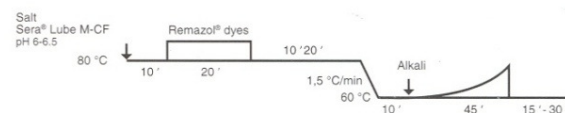
- Maximum reproducibility in critical pale to medium trichromatic shades
- Very reliable application in exhaust dyeing
- Good leveling properties
- Easy to wash off
- Meets the requirements of major ecology standards

### Remazol<sup>®</sup>

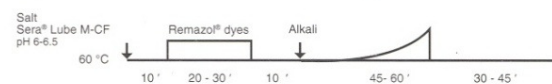
- Wide range of economical dyes for exhaust, cold pad batch and continuous processes
- Wide range of dyes for black and navy shades
- Selection of liquid dyes
- Selection of dyes for dischargeable dyeings, special fastness and shade requirements
- Flexible alkali systems in cold pad batch for different climatic requirements
- Meets the requirements of major ecology standards

## Exhaust dyeing on bleached cotton

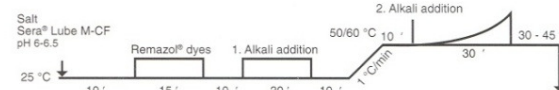
New migration process for selected Remazol<sup>®</sup> RGB and Ultra RGB dyes



Standard isothermal process for Remazol<sup>®</sup>, Remazol<sup>®</sup> RR and Remazol<sup>®</sup> RGB



Standard temperature rise process for Remazol<sup>®</sup>, Remazol<sup>®</sup> RR and Remazol<sup>®</sup> RGB



## Salt and Alkali recommendation, LR 10:1

Option 1, soda ash only

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	20	20-25	25-40	40-50	50-60	60-80	80-100
Soda ash [g/l]	5	5	5-10	10-13	13-15	15-20	20

Option 2, mix alkali (soda ash/caustic soda)

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	20	20-25	25-40	40-50	50-60	60-80	80-100
Soda ash [g/l]	5	5	5	5	5	5	5
NaOH 50% [ml/l]	-	0.6-0.75	0.75-0.9	0.9-1.2	1.2-1.5	1.5-2.0	2.0

Option 3, formulated liquid alkali (Sera<sup>®</sup> Fix C-SF)

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	20	20-25	25-40	40-50	50-60	60-80	80-100
Sera <sup>®</sup> Fix C-SF [ml/l]	1.3	1.3-1.9	1.9-2.3	2.3-3.3	3.3-4.3	4.3-6.1	6.1-9.0

## Salt and Alkali recommendation, LR 5:1

Option 1, soda ash only

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	5	20-25	25-40	40-50	50-60	60-80	60-80
Soda ash [g/l]	6	6	6-12	12-16	16-18	15-24	25

Option 2, mix alkali (soda ash/caustic soda)

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	5	5-20	20-25	25-35	35-45	45-60	60-80
Soda ash [g/l]	6	6	6	6	6	6	6
NaOH 50% [ml/l]	-	0.7-0.9	0.9-1.1	1.1-1.4	1.4-1.7	1.7-2.5	3.0

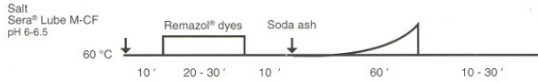
Option 3, formulated liquid alkali (Sera<sup>®</sup> Fix C-SF)

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	5	5-20	20-25	25-35	35-45	45-60	60-80
Sera <sup>®</sup> Fix C-SF [ml/l]	1.6	1.6-2.3	2.3-2.8	2.8-4.0	4.0-5.2	5.2-7.3	7.3-11.0





## Exhaust dyeing on mercerised cotton and Viscose \*



### Salt and Alkali recommendation, LR 10:1

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	20	20-25	25-30	30-40	40-50	50-60	60
Soda ash [g/l]	3	3-4	4-5	5-7	7-9	9-13	15

### Salt and Alkali recommendation, LR 5:1

Dye concentration [%]	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5.0
Salt [g/l]	15	15-20	20-25	25-30	30-40	40-50	50
Soda ash [g/l]	4	4-5	5-6	6-9	9-11	11-16	18

## Wash off process in exhaust application

Bath	Remazol®, Remazol® RR, Remazol® RGB and Ultra RGB
1 <sup>st</sup>	Overflow rinse cold or warm (30 - 50 °C) for 10 min
2 <sup>nd</sup>	Neutralize for 10 min at 50 - 80 °C with acetic acid
3 <sup>rd</sup>	Overflow rins Rinse for 10 min at 80 °C (Not required when dyeing pale shades)
4 <sup>th</sup>	Soap for 10 min at 98 °C + 1 g/l Sera® Fast C-RD
5 <sup>th</sup>	Rinse for 10 min at 80 °C
6 <sup>th</sup>	Rinse cold for 10 min.

When washing off deep shades or at short liquor ratios repeated soaping at the boil (bath 4) may be necessary. If the last rinse bath is alkaline, acetic acid should be added to bring the pH of the substrate to pH 5-6.

\* further details can be found in ColorXPT® program (www.ColorXPT.com)

## Padding application\*

### 1) Fixation methods in Cold Pad Batch

#### a) Silicate-free methods:

- Remazol® soda ash/caustic soda method
- Sera® Fix C-SF method
- Remazol® tropical soda/ash/caustic soda method for
- Remazol® RGB and for selected Remazol® Black dyes

#### b) Silicate containing methods

- Silicate 50 method
- Silicate 95 method
- Sodium silicate/tropical variant

### Main alkali methods for 20-25°C

Dye pad liquor is valid for all alkali methods!

X g/l Remazol® dyestuff

2-4 g/l Sera® Wet C-UD

1-2 g/l Sera® Quest M-USP

100g/l Urea (if necessary to improve solubility)

Note: the dye pad liquor is mixed in ratio 4:1 with alkali liquor.

A mixing pump is required for all mentioned methods!

### Soda ash/caustic soda alkali liquor:

Dye concentration [g/l]	<20	<40	<60	<80	<100	>100
Soda ash [g/l]	20	20	20	20	20	20
NaOH 50% [ml/l]	3.5	6.0	8.0	10.0	12.0	14.0

### Sera® Fix C-SF alkali liquor:

Dye concentration [g/l]	<20	<40	<60	<80	80-100	>100
Sera® Fix C-SF [ml/l]	20-29	29-37	37-45	45-53	53-62	70

### Silicate 50 alkali liquor

Sodium silicate				Dyestuff [g/l]					
Concentration		amount		<20	30	40	50	60	70-100
°Be	Na <sub>2</sub> O·SiO <sub>2</sub>	g/l	ml/l	Caustic soda 50% [ml/l]					
37-40	1:3,3	65	50	11	14	14	14	17	20
40-42	1:3,3	55	40	11	14	14	14	17	20
48-50	1:2,6	50	35	9	12	12	12	15	18
58-60	1:2,1	45	30	6	9	9	9	12	15

### 2) Pad-dry-pad-steam process

#### Dye pad

X g/l Remazol® dyestuff

2-4 g/l Sera® Wet C-UD

5-10 g/l Sera® Con M-LU liq.

5-10 g/l Sera® Gal M-IP

## Chemical pad

Dye concentration [g/l]	<20	20-40	>40
Salt [g/l]	250	250	250
Soda ash [g/l]	20	20	20
NaOH 50% [ml/l]	3.0	4.0	6.0

For Remazol® Turquoise Blue G, Green 6BT; Brill.Yellow GL; Brill.Yellow 4GL amount of caustic has to be increased by 3 ml/l

### 3) Econtrol® process

#### Dye pad

X g/l Remazol® dyestuff

2-4 g/l Sera® Wet C-UD

5-10 g/l Sera® Con M-LU liq.

5-10 g/l Sera® Gal M-IP

#### Alkali table

Dye concentration [g/l]	<20	<40	<60	<80	<100	>100
Soda ash [g/l]	20	20	20	20	20	20
NaOH 50% [ml/l]	3.5	6.0	8.0	10.0	12.0	14.0

a mixing pump is required

#### 4) Pad-dry-steam process\*

#### 5) Pad-steam process\*

#### 6) Pad-dry-thermofix process\*

## Wash off process in continuous application (example for an open width washer with 7 baths)

Bath	Remazol®, Remazol® RR, Remazol® RGB and Ultra RGB
	Silicate method      Silicate free method
1 <sup>st</sup>	50 - 60 °C      50 - 60 °C
2 <sup>nd</sup>	50 - 60 °C      50 - 60 °C; set pH 5-6 with acetic acid
3 <sup>rd</sup>	80 °C      80 - 95 °C
4 <sup>th</sup>	95 °C; add Sera® Fast C-RD      95 °C; add Sera® Fast C-RD
5 <sup>th</sup>	95 °C; add Sera® Fast C-RD      95 °C; add Sera® Fast C-RD
6 <sup>th</sup>	80 °C      80 °C
7 <sup>th</sup>	40 - 70 °C      40 - 70 °C

Continuous washing units based on counter flow technology are particularly economical as they save water and energy. In the last rinsebath the goods should be set at around pH 6. If the last rinse bath is alkaline, acetic acid should be added to bring the pH of the substrate to pH 5-6.

## \* Auxiliaries Sera®

#### • Con M-LU (Oxidation)

Mild oxidation agent

#### • Fast C-RD (Soaping)

For removal of unfixed reactive dye stuff from cellulose or blends with synthetic fibres after dyeing or printing

#### • Gal M-IP (Antimigrant)

Reduces dye migration in pad-dry-pad-steam process during intermediate drying

#### • Lube M-CF (Lubricant)

Reduce running marks in piece good dyeing

#### • Quest M-USP (Sequestering)

Sequestering of alkali earth and heavy metals

#### • Wet C-UD (Wetting)

Improves wetting and deaerating of the fabric

\* further details can be found in ColorXPT® program (www.ColorXPT.com)

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