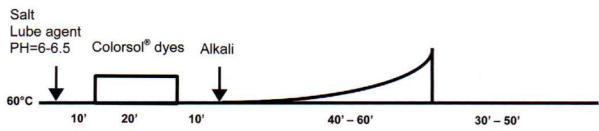
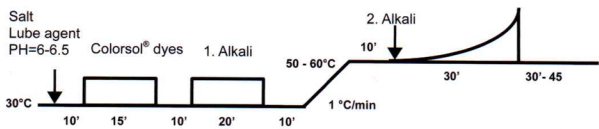


Exhaust dyeing on bleached cotton

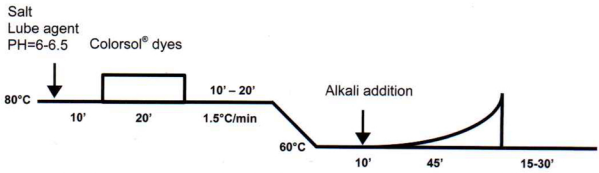
Standard isothermal process for Colorsol® dyes



Standard temperature rise process for Colorsol® dyes



Migration process for colorsoi® dyes



For pale and critical shades , we recommend adding salt after the dyes addition , linear dispensed over 10-20 min

Exhaust dyeing on mercerized cotton and Viscose

We recommend migration or isothermal process, for CV and CO merc., and adding salt after the dyes addition with isothermal procedure.

Salt and Alkali recommendation, LR ≤ 6 : 1

Option 1, soda ash only

Dye concentration %	< 0.5	0.5	1	2	3	4	≥5
Salt (g/l)	20	30	40	50	60	70	80
Soda ash (g/l)	14	16	18	20	20	20	20

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

Dye concentration %	< 0.5	0.5	1	2	3	4	≥5
Salt (g/l)	20	30	40	50	60	70	80
Soda ash (g/l)	10	10	5	5	5	5	5
Caustic soda	0.5	1.0	2.0	2.5	3.0	3.5	4.0

Salt and Alkali recommendation, LR < 8 : 1

Option 1, soda ash only

Dye concentration %	< 0.5	0.5	1	2	3	4	≥5
Salt (g/l)	20	30	40	50	60	70	80
Soda ash (g/l)	10	12	14	16	18	20	20

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

Dye concentration %	< 0.5	0.5	1	2	3	4	≥5
Salt (g/l)	20	30	40	50	60	70	80
Soda ash (g/l)	10	5	5	5	5	5	5
Caustic soda	-	0.75	1.25	1.5	2.0	2.25	3.0

For LR 5 : 1, the amount of caustic soda can be increased by 20 %

For LR 4 : 1, the amount of caustic soda can be increased by 30 %

Amount of chemicals on cotton merc. and Viscose

The recommend dyeing procedure is the 80 °C /60 °C migration method for CV ar CO merc., the amount of salt can be reduced by 20%

Alkali addition recommendations

Soda ash

- Portion, add 0.5 – 1 g/l soda ash , progressively dispensed over 20 – 30 min .
- Portion, add remaining quantity, progressively dispensed over 20 – 30 min.

Mixed soda ash / caustic soda

- Portion, add 0.5 – 1 g/l soda ash , progressively dispensed over 20 – 30 min .
- Portion, add remaining quantity of soda ash and caustic soda , progressively dispensed over 20 – 30 min

Sodium bicarbonate/soda ash (for Viscose and CO merc. only)

- Portion, add 1 g/l sodium bicarbonate , linear dispensed over 10 – 15 min
 - Portion, add 1-2 g/l soda ash ,linear or progressively dispensed over 20 -30 min
 - Portion, add remaining soda ash ,progressively dispensed over 20 -30 min.
- This method shows the best leveling performance on viscose and co merc. fabrics.

Wash off process in exhaust application

Bath	Colorsol® OS HLP MF DS Deep DS Ultra DS
1 st	Overflow or rinse cold or warm (30 – 50 °C) for 10 min
2 nd	Neutralize for 10 min at 50°C/122°F with 0.2 – 0.5 ml/l CHRO Acid PC
3 rd	Rinse for 10 min at 80°C (not required when dyeing pale shade)
4 th	Soap for 10 min at 95°C /203°F with 1-2g/l CHRO Wash MPB
5 th	Rinse for 10 min at 50°C/122°F
6 th	Rinse cold for 10 min

When washing off deep shades or at short liquor ratios repeated soaping at biol (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

Notes on washing – off for Colorsol® SP , SP-EC

No PH adjustment is necessary , PH around 10 is to be expected after the first rinse . All wet fastness properties is met , even though the last rinsing bath remains colored , depend on fabric quality , machinery equipment and liquor ratio , a further reduction of rinsing baths is possible.

Bath	Low temperature washing off process for SP and SP-EC						
washing off pale and medium shade		LR ≤ 6 : 1					
1 st	Rinse for 10 min at 60°C /140°F						
2 nd	Rinse for 10 min at 60°C /140°F	1-2 g/l CHRO Wash LTD					
3 rd	Rinse for 10 min at 60°C /140°F	Neutralization at PH = 6 - 7					
4 th	Soften as usual or aftertreatment						

Washing off dark /deep shades		LR 6 : 1 and below					
1 st	Rinse for 10 min at 60°C /140°F						
2 nd	Rinse for 10 min at 60°C /140°F						
3 rd	Rinse for 10 min at 60°C /140°F	1-2 g/l CHRO Wash LTD					
4 th	Rinse for 10 min at 60°C /140°F	Neutralization at PH = 6 - 7					
5 th	Soften as usual or aftertreatment						

Required amount of alkali

Sodium silicate method

Dye	g/l	< 10	20	30	40	50	≥60
Caustic soda 36°Be'	ml/l	12	14	16	18	20	22
Sodium silicate 38°Be'	ml/l	50					

Silicate - free method

Dye	g/l	< 10	20	30	40	50	≥60
Caustic soda 36°Be'	ml/l	4	5	7	9	11	13
Soda ash	g/l	20					

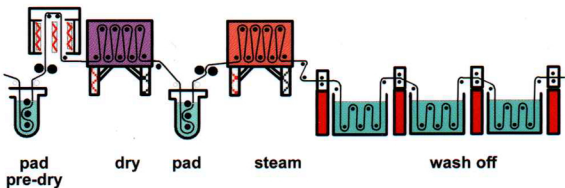
Notes :

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

A mixing pump is required for all mentioned methods !

When dyeing terry towelling or corduroy fabric by Silicate – free method , the amount of caustic soda should be increased by 50% .

Pad-Dry -Pad -Steam process



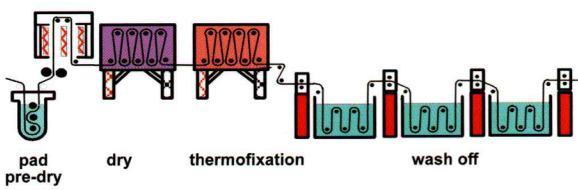
Padding the dyes	x	g/l	Colorsol® dye
	1 - 2	g/l	CHRO Penetration NF
	1 - 3	g/l	CHRO Anti-Reduction F Liq.
	5 - 10	g/l	CHRO Migration Inhibitor MI

Padding temperature	20 - 30°C		
Liquor Pick up	60 - 80 %		
IR pre- drying	to a residual moisture content of 30 - 50 %		
Drying	at 120°C - 140 °C, cool the fabric		

Padding the chemicals	15	ml/l	Caustic soda 36o Be/66o TW
	20	g/l	Soda ash
	200 - 250	g/l	Common salt

Padding temperature	20 - 30°C		
Liquor Pick up	70 - 80 %		
Steaming	30-60 seconds with saturated steam (100 - 102 °C)		

Pad-Thermofix process



Padding	x	g/l	Colorsol® dye
	1 - 2	g/l	CHRO Penetration NF
	1 - 3	g/l	CHRO Anit-Reduction F Liq.
	5 - 10	g/l	CHRO Migration Inhibitor MI
	20 - 100	g/l	Urea
	10 - 20	g/l	Soda ash

Padding temperature 20 - 30°C

Liquor Pick up 60 - 80 %

Required amount of Urea and Soda ash						
Dye	g/l	<5	10	20	30-40	>50
Urea	g/l	20	50	75	100	100
Soda ash	g/l	10	10	10	10	20

IR pre- drying to a residual moisture content of 30 - 50 %

Drying at 120°C - 140 °C

Fixation			
Temperature	°C	140	160
Time	s	60 - 90	45 - 60
			30 - 45

Continuous washing - off procedure

Bath	Colorsol® OS HLP MF DS Deep DS Ultra DS
Box1	Rinse at 50 - 60°C
Box2	Rinse at 50 - 60°C , set PH = 5 - 6 with acid
Box3	Rinse at 80 - 95°C
Box4	Rinse at 95°C + 2 g/l CHRO Wash MPB
Box5	Rinse at 95°C + 2 g/l CHRO Wash MPB
Box6	Rinse at 80°C
Box7	Rinse at 40 - 70°C

Bath	Low temperature washing off procedure for Colorsol® SP SP-EC						
Box1	Rinse at 60°C						
Box2	Rinse at 60°C						
Box3	Rinse at 60°C						
Box4	Rinse at 60°C + 2 g/l CHRO Wash LTD						
Box5	Rinse at 60°C						
Box6	Rinse at 50 - 60°C Neutralize to PH = 6 - 7						

Colorsol®

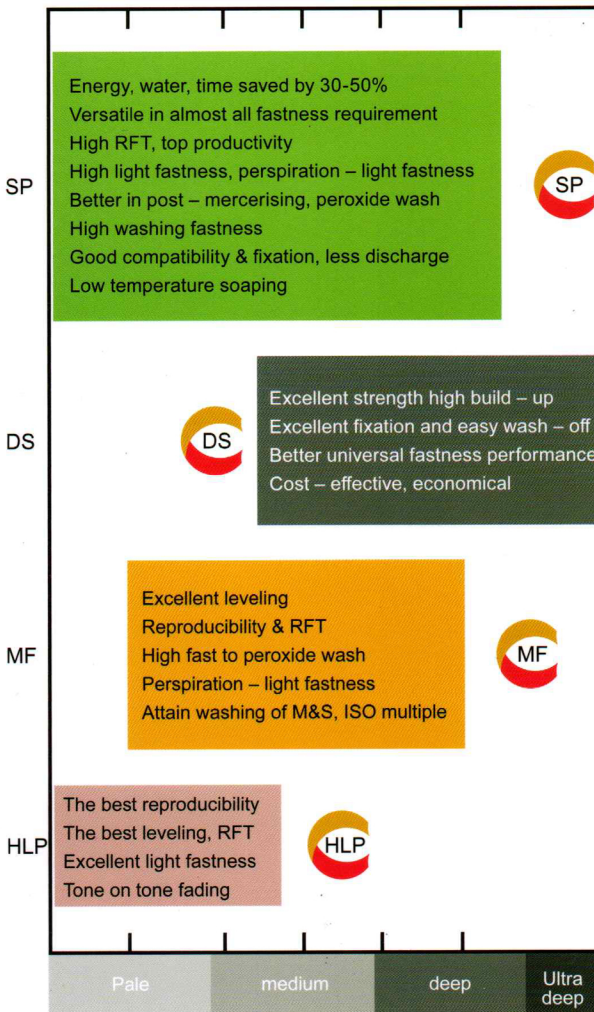
Product Profile

High RFT , Excellent compatibility and reproducibility

Solution of Gas fading , chlorine , Oxidative damage .

No photochromism

Comprehensive satisfied fastness to meet



Chroma Reactive dyes

Chroma produces a range of reactive dyes for cellulose fibers and blends with excellent dyeing and fastness properties. Chroma reactive dyes are manufactured under strict quality control procedures. Particular attention is paid to uniform particle size with excellent reaction properties. The products can be satisfactorily applied to 100% cellulose fibers and Blend by various dyeing process Chroma have a large range of reactive dyes covering a wide color gamut which fulfill the different requirements of the various dyeing procedures. We advise therefore correct selection of appropriate dyes for each end-use application.

Chroma also produces a full range of eco-friendly products that satisfy global textile regulations such as Zero Discharge Hazardous Chemicals (ZDHC), bluesign® and Global Organic Textile Standard (GOTS).

Colorsol® Reactive Dyes For Cellulose Dyeing



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Disclaimer: The testing data in this pattern card is obtained from our company lab. We will not overtake any risk caused by this. Every factory has difference in index data because of different process, dyeing material, water, chemicals etc. as such factors. Our data is just for your reference. Your lab experiment is highly. Suggested before you initiate mass production.
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