

COLOR
SOLUTIONS

Environmentally
Ecological
Smart way



CHROMATOL

ACTION FOR THE EARTH

COLORSOL[®] EC

***Economical and flexibility
in application tri-chromatic
reactive dyes***

Substantially increases productivity
Excellent Levelling property
Reproducibility & Compatibility

Product Introduction

Colorsol EC is an economical and application friendly tri-chromatic combination, suitable for pale, medium to dark shades, with remarkable compatibility and wider applications, solving the stability and levelling problems of critical ternary shades in the market.

Core advantages

Substantially increase productivity.

Right-first-time can be increased by 20% , the redyeing can be reduced by 20-30%, which translates to significant cost savings by 50%.

Flexibility in application. Economically superior.

The tri-chromatic combination has a cost advantage compared with classical traditional dyes.

Wide color dimension possibilities.

Based on good levelling ,high build up and strength that cover pale to dark shades.

Product Features

- **Good overall colour fastness performance**

Qualified overall colorfastness in the modern market.

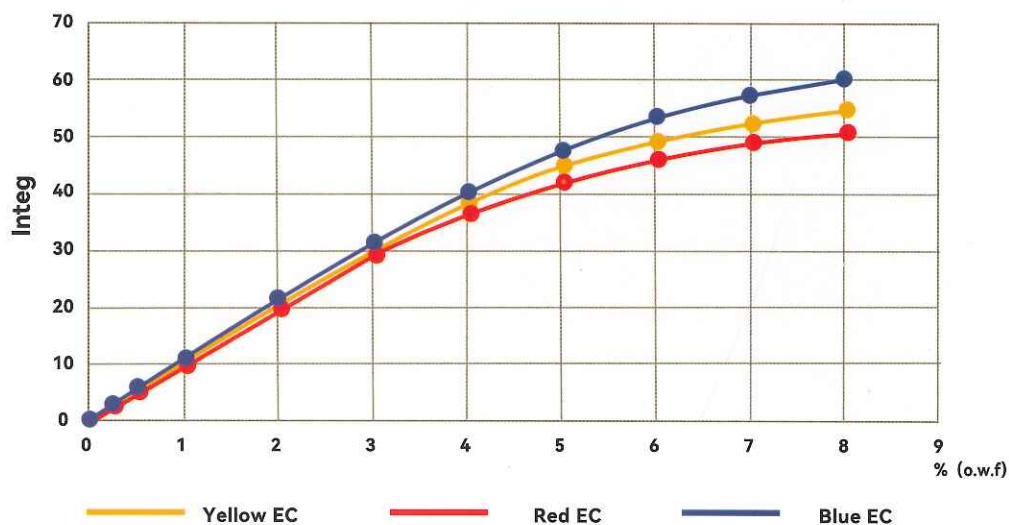
1/1SD \ Colorsol			Yellow EC	Red EC	Blue EC
Bleached 100% cotton (1/1SD)					
1/1 SD% (LR 10:1 exhaust)			2.00	2.50	1.90
1/1 SD g/L dyestuff (PDPS bleached cotton)			17.5	22.6	16.0
Suitability	Exhaust		■	■	■
	PDPS		■	■	■
	CPB		■	■	■
Light fastness ISO 105 B02 (1/1SD)			4	4	4
Perspiration Light fastness ISO 105 B07 1/1 SD	acid		4	4	3-4
	alkali		4	3	3
Washing fastness ISO 105 C06 C2S (60°C)		CH/CO	4-5/4	4-5/4-5	4-5/4-5
Washign fastness ISO 105 C06 E2S (95°C)		CH/CO	4-5/4	4-5/3-4	4-5/3-4
Perspiration ISO 105 E04	acid	CH/CO	4-5/4-5	4-5/4-5	4-5/4-5
	alkali	CH/CO	4-5/4-5	4-5/4-5	4-5/4-5
Oxidative Bleach Damage M&S C10A		CH	4-5	3-4	4
Simulation of multiple wash with bleach activator at 60°C ISO 105 C09		CH	4-5	3-4	4
Chlorinated water ISO 105 E03 20ppm		CH	4	3-4	3-4
Nitrogen of Oxides Fastness ISO 105 G01		CH	4-5	4-5	4-5
Dischargeability			++	-	++

Colorsol EC Color Triangle of Medium Shade



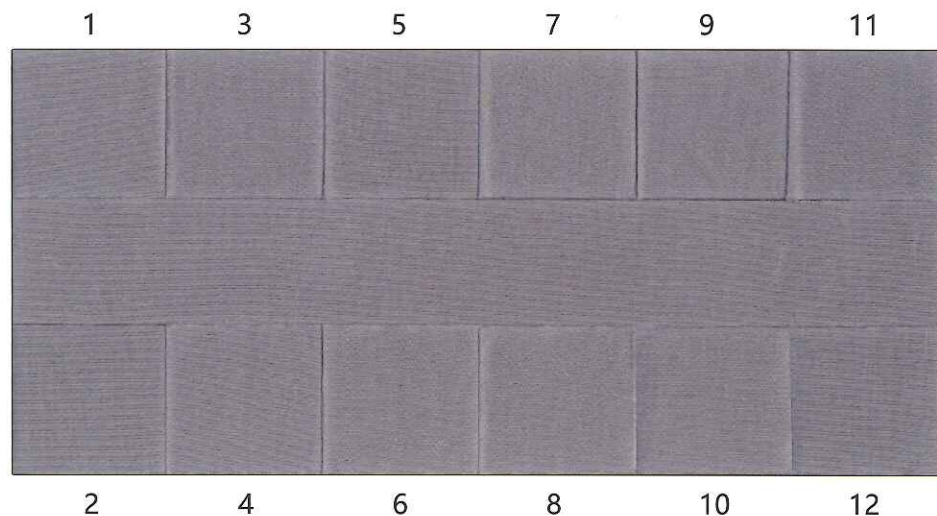
- Excellent build up and strength

High build up and strength , cover wide color dimension.



- Excellent stability

Stability to variation in dyeing parameter , chemicals , liquor ratio and temperature etc . Colorsol EC ternary displays minimum sensitivity to process variables, show high robustness .



1,2 - fixation temperature $\pm 5^{\circ}\text{C}$

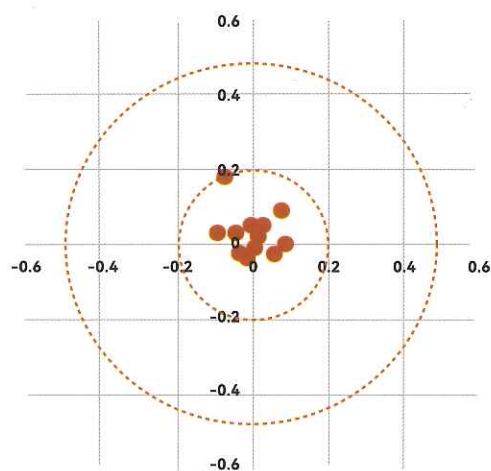
3,4 - the amount of salt $\pm 10\%$

5,6 - the amount of Soda ash $\pm 10\%$

7,8 - LR $\pm 20\%$

9,10 - fixation time ± 15 minutes

11,12 - LR $\pm 10\%$, same salt and soda ash



0.066% Colorsol Yellow EC

0.056% Colorsol Red EC

0.110% Colorsol Blue EC

Glauber's salt 50g/l

Soda ash 12g/l

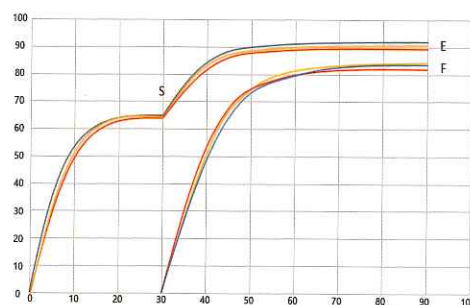
Liquor Ratio 10:1

- Excellent Levelling property , reproducibility & compatibility

Colorsol EC show homogeneous exhaustion/fixation rate that ensure stability in critical colors.

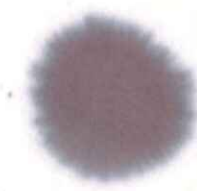
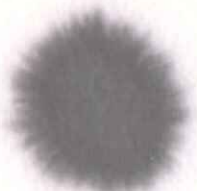
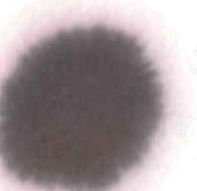
Step	①	②	③	④	⑤	⑥	⑦	⑧
	30°C*10min	30°C*10min	40°C	50°C	60°C	60°C*25min	60°C*35min	60°C*65min
Exhaust								
Fixation								

0.280% Colorsol Yellow EC Glauber's salt 50g/l
 0.300% Colorsol Red EC Soda ash 12g/l
 0.660% Colorsol Blue EC Liquor Ratio 10:1

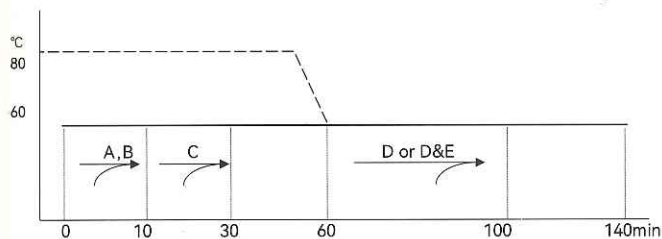


- Flexible use for Exhausting, Continuous and Cold Pad Batch processes

Colorsol EC show homogeneous substantivity diffusion and reactivity, better compatibility than offers from competition. Minimal risk of tailing and listing in continuous and CPB. Flexible use for various kind of dyeing process that shade achievability with no metamerism.

Recipe	0.82g/l Yellow 176 1.02g/l Red 239 0.81g/l Blue 250 2.65g/l	0.66g/l Yellow EC 0.56g/l Red EC 1.10g/l Blue EC 2.32g/l	3.30g/l Yellow 176 5.00g/l Red 239 4.50g/l Blue 250 12.8g/l	2.80g/l Yellow EC 3.00g/l Red EC 6.60g/l Blue EC 12.4g/l
Neutral				
3g/l NaOH +20g/l soda ash				

Exhaustion Process



Liquor ratio 6:1 and below

Dyes	%	<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

Dyes	%	< 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
NaOH36°Bé	ml/L	0.5	1.0	2.0	2.5	3.0	3.5	4.0

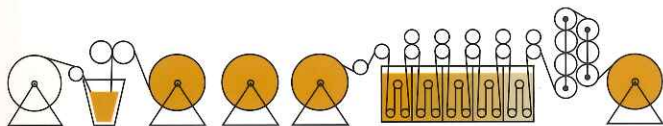
Washing off

Rinse 50°C *10min → Neutralize 50°C *10min with 0.2-0.5ml/L CHRO Acid PC, pH 5.5-6.0 → ¹⁾Soaping 95°C *10min with 1-2g/L CHRO Wash MPB

→ Rinse 50°C *10min → Rinse cold 10min → Soften as usual or aftertreatment

¹⁾An additional soaping is recommended for very deep shades.

Cold-Pad-Batch Process



Padding → Batching 20~30°C, 12-24hrs → Washing off

Dye liquor

Dyes	g/L	X
CHRO Penetrating agent NF	g/L	1-2

Liquor ratio below 8:1

Dyes	%	<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

Dyes	%	<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
NaOH36°Bé	ml/L	/	0.75	1.25	1.5	2.0	2.25	3.0

Liquor ratio 8:1 and above

Dyes	%	<0.5	0.5	1	2	3	4	>5
Salt	g/L	30	40	50	60	80	90	100
Soda ash	g/L	8	10	12	14	16	18	18

Dyes	%	<0.5	0.5	1	2	3	4	>5
Salt	g/L	30	40	50	60	80	90	100
Soda ash	g/L	8	5	5	5	5	5	5
NaOH36°Bé	ml/L	/	0.5	1.0	1.25	1.5	2.0	2.5

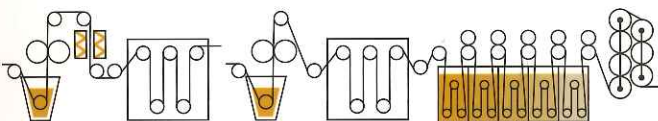
Alkali table Silicate Method

Dyes	g/L	<10	20	30	40	50	>60
Na-silicate 38°Bé	ml/L	50					
NaOH 36°Bé	ml/L	12	14	16	18	20	22

Silicate-Free Method

Dyes	g/L	<10	20	30	40	50	>60
Soda ash	ml/L	20					
NaOH 36°Bé	ml/L	4	5	7	9	11	13

Pad-Dry-Pad-Steam Process



Padding Dye Liquor → IR Pre-drying → Hot air 100-130°C

→ Padding Chemicals → Saturated steam 60-90sec. → washing off

Dye liquor, pick up 60~80%

Dyes	g/L	x
CHRO Penetration NF	g/L	1-2
CHRO Anti-migration MI	g/L	5-10
CHRO Anti-reduction F Liq.	g/L	1-3

Chemicals, pick up 70~80%

Common salt	g/L	200-250
Soda ash	g/L	20
NaOH 36°Bé	g/L	15

CHROMATOL Shanghai Tech Co., Ltd.

Founded in 2018 and located in Shanghai Songjiang High-tech Park, relying on the advantages of Hubei Color Root Technology production base and industrial supply chain support, it aims to build a high-end brand in the global dye market.

The company focuses on the R&D and production of Eco-friendly, energy-saving, green and healthy dyes, and provides innovative and high-quality dyeing solutions for the textile industry.

Colorsol series dyes have been widely recognized and highly praised by customers in the market, and are exported to Europe, South America and Southeast Asia, helping the sustainable development of the world's textile industry and supporting customers to gain a favourable position in the global market.

Sales Network

- **30+** countries and regions , **1000+** customers worldwide
- **6** in-country offices
Zhejiang, Shandong, Jiangsu, Fujian, Guangdong, Hong Kong
- **6** overseas cooperative resident institutions
Bangladesh, Pakistan, Thailand, Indonesia, Turkey, Dubai





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COLOR ROOT or its products are evaluated and certified by the following organisations



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