



COLORSOL[®] BLACK

The Functional Reactive Dyestuff

CHROMA (Shanghai) Chem-Tech Co.Ltd

Product Properties & Benefits

COLORSOL Blacks series can fully meet the demand of reactive black in the market

COLORSOL Black FCG / FCR

1. Economical dyeing, good build-up, easy washing off
2. Excellent fastness to normal washing and daylight, the supremacy of repeat hot washing fastness
3. Suitable for black requirement of retailers, trouble free in metamerism
4. Flexibility in application, easier handling

COLORSOL Super Black SQ / SG / SR

1. Top build-up and fixation rate, economical dyeing and easy washing off, an ideal choice for Ultra deep black
2. An alternative to sulfur black, the cost for waste water reduced tremendously
3. Better performance in both rubbing and repeated laundering
4. Excellent wet fastness
5. Flexibility in application, less equipment staining
6. Suitable for cotton / polyamide blend dyeing with good PA reservation

COLORSOL Black SP

BLACK 5 FREE

1. Better build up and fixation, less salt, washing-off remarkably shortened
2. Novel chemistry possesses the advantages of non black 5, energy and waste water saved by more than 50%
3. Outstanding overall color fastness
4. PCA (p-chloroaniline) free (5ppm restricted limit)
5. Excellent fastness to perspiration-light

	Strength	Washing ISO105-C06 C1S60°C30min / E2S95°C30min			Rubbing ISO105-X12		Light ISOB02 R5GS4	Perspiration ISO105E04 acidic / alkaline				Chlorinated water 20ppm	Oxidative bleach M&S C10A
		Ch	CO	PA	Dry	Wet		Ch	CO	PA	WO	Ch	Ch
Black FCG	100	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4
Black FCR	100	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4
Super Black SG	135	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4
Super Black SR	135	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4
Super Black SQ	135	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4
Black SP	100	4-5/4-5	4-5/4-5	4-5/4-5	4-5	3	4-5	5/5	4-5/4-5	4-5/4-5	4-5/4-5	4-5	4

Rating Deep black at 6% and Super Black at 4.5%

CHROMATOL Has Setup Three Standards Of Reactive Black On The Market

SUPER BLACK SQ/SG/SR:

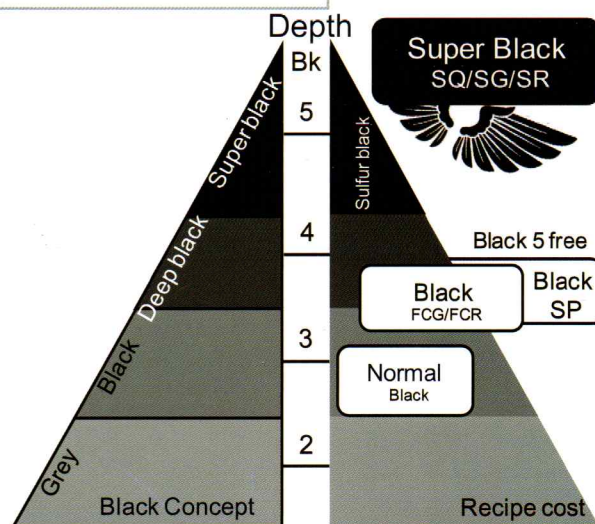
Approx double strength of normal black, the only reactive alternative of sulfur black, the best build up and much wider spectrum

BLACK SP:

New concept for environment sustainable black dyeing, extremely high fixation, easier & shortened washing off, less salt, energy and waste water reduced by more than 50%.

BLACK FCG/FCR:

Modified black, upgraded performance on build up, washing off and overall colorfastness

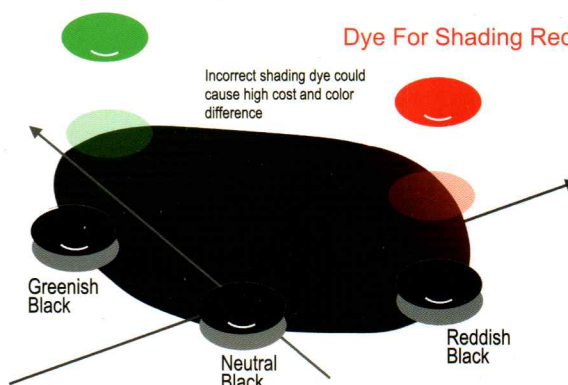


The Advantages Of COLORSOL Super Black SQ/SG/SR Concept

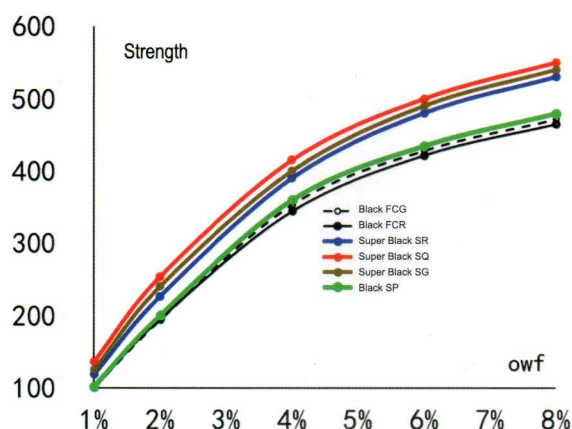
- ① Good compatibility in a larger color space
- ② No blocking problem and cost saving
- ③ Easy color control, Good Right First Time
- ④ Supplemental dyes available for trouble shooting

Dye For Shading Green

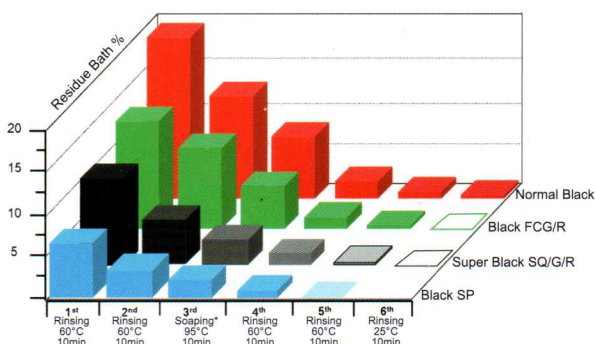
Dye For Shading Red



COLORSOL Blacks' Build Up Properties

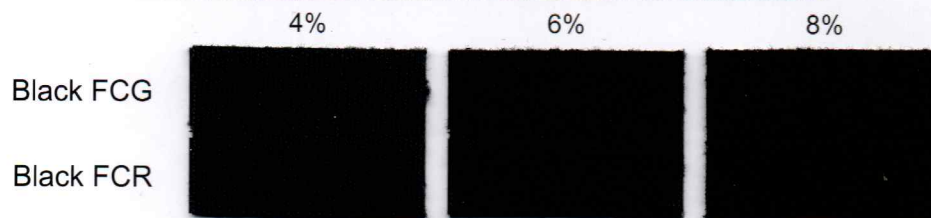


COLORSOL Blacks' Efficiency Of Washing Off

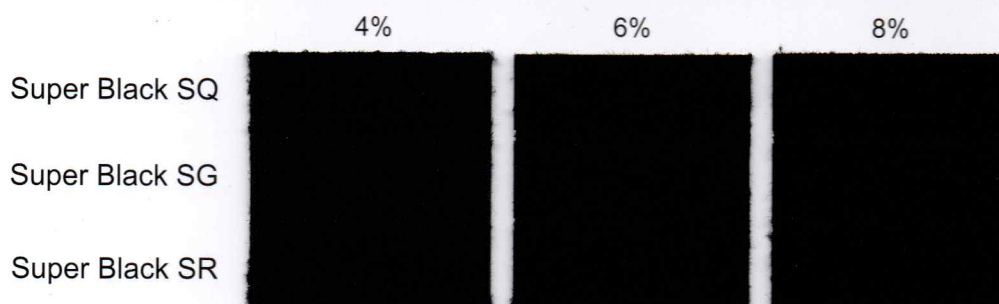


*COLORSOL Black SP soaping at 60°C
Washing off depends on dyeing, pretreatment, water, rinsing, detergent and aftertreatment etc. graph above just show the difference

COLORSOL Reactive Black Range



Washing fastness ISO105-C06, C1S 60°C30min				Washing fastness ISO105-C06, E2S 95°C30min With Perborate			
6%Black FCG				6%Black FCR			
CO	PA	PE	WO	CO	PA	PE	WO
4-5	4-5	5	5	4-5	4-5	5	5

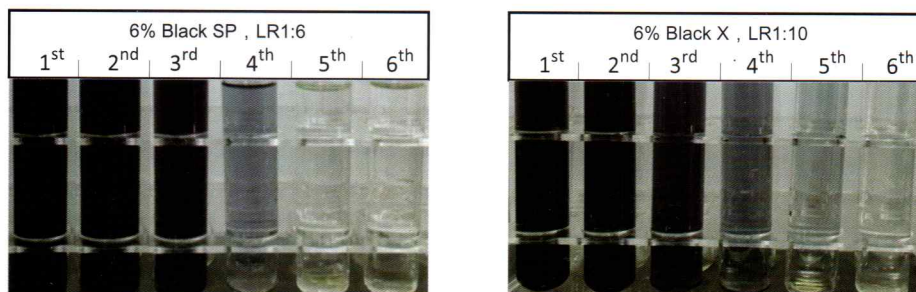


Washing fastness ISO105-C06, C1S 60°C30min				Washing fastness ISO105-C06, E2S 95°C30min With Perborate			
4.5% Super Black SQ				4.5% Super Black SG			
CO	PA	PE	WO	CO	PA	PE	WO
4-5	4-5	5	5	4-5	4-5	5	5



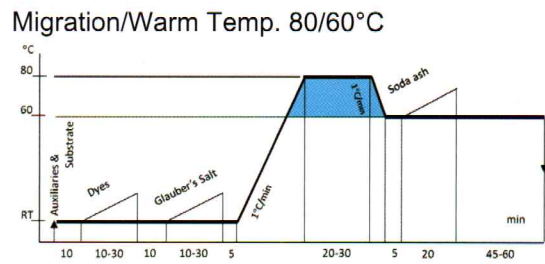
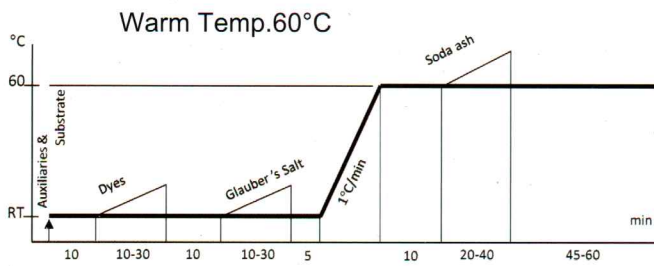
Washing fastness ISO105-C06, C1S 60°C30min				Washing fastness ISO105-C06, E2S 95°C30min With Perborate			
6% Black SP				6% Market Top Black			
CO	PA	PE	WO	CO	PA	PE	WO
4-5	4-5	5	5	4-5	4-5	5	5

Residue Washing Bath



NOTE : As a large amount of blacks on the market with various qualities,only a top representative competitor black to be compared

Exhaustion Dyeing Process



WASHING OFF

Black / Super Black

50°C 10min Rinsing
50°C 10min Neutralizing, pH 5.5-6
95°C 10min Soaping, optional for soaping twice
50°C 10min Rinsing
Cold Rinsing 10min

Black SP

60°C 10min Rinsing
60°C 10min Rinsing
60°C 10min Soaping
60°C 10min Neutralizing, pH 6-7

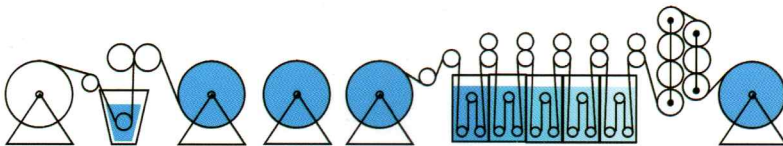
CHEMICAL DOSAGE (non-mercerized cotton)

SODA ASH METHOD		4% Black or Super Black			4% Black SP			>5% Black or Super Black			>5% Black SP		
LR		≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1
Glauber's salt	g/l	70	70	80	40	50	60	80	80	90	50	60	70
Soda ash	g/l	20	20	18	20	20	18	20	20	18	20	20	18

MIXED ALKALI METHOD		4% Black or Super Black			4% Black SP			>5% Black or Super Black			>5% Black SP		
LR		≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1	≤6:1	7:1	≥8:1
Glauber's salt	g/l	70	70	80	50	60	70	80	80	90	60	70	80
Soda ash	g/l	5	5	5	5	5	5	5	5	5	5	5	5
36° Be'NaOH	ml/l	3.5	2.25	2.0	3.5	2.25	2.0	4.0	3.0	2.5	4.0	3.0	2.5

Cold-Pad-Batch Process

Padding → Batching at 25°C for 12-24 hrs. → Washing Off



Dye liquor, Temp 20-25°C

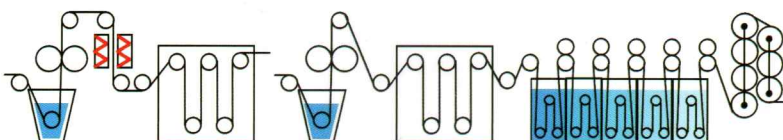
X	g/l	COLORSOL Reactive dye
2-4	g/l	Wetting agent

Alkali dosage, Temp 20-25°C

Dyestuff	g/l	20	40	60	80	100
Soda ash	g/l			20		
36° Be'Caustic soda	g/l	6	11	16	16	16

Pad-Dry-Pad-Steam Process

Padding dye liquor → IR PreDrying → Hot air 100-130°C
→ Padding Chemicals → Saturated steam 45~90 sec. → Washing Off



Dye liquor, PU 50-70%

X	g/l	COLORSOL Reactive dye
2-4	g/l	Wetting agent
5-10	g/l	Anti-migration agent
5-10	g/l	Resist salt

Chemicals, PU 70-80%

Dyestuff	g/l	<20	20-30	>30
Common salt	g/l		200-250	
Soda ash	g/l		20	
36° Be'Caustic soda	g/l	10	12	15



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