

Reactive Dyes on Cotton



Responsible Care®



bluesign



SYSTEM PARTNER



ETAD Member



ZDHC
CONTRIBUTOR

Reactive dyes on Cotton from Colourtex

This pattern card illustrates full range of Reactive dyes on cellulosic. They are grouped below on the basis of their functional / chemical nature.

1.0 Coralite FL

- High Light fast dyes based on fluoro chemistry
- Recommended for use in pale to medium shade gamut
- Warm dyeing (60°C) in exhaust and all continuous applications
- Excellent compatibility

2.0 Corazol

- Vinyl sulphone base
- Good solubility, stability and dischargeability
- Suitable for exhaust, cold pad batch & for two phase printing

3.0 Corazol RFT

- Dyes for medium to dark shades
- Economical
- Warm dyeing
- Reproducible
- Suitable for exhaust and continuous application

4.0 Corazol X-RFT

- High reproducibility
- Suitable for exhaust & continuous application
- Good allround fastness
- High build-up and low effluent load

5.0 Corazol RD

- Robust trichromy for exhaust dyeing
- Good forlight to medium shades
- On tone exhaustion and fixation
- On tone fading

6.0 Corafix ME

- Bi-functional
- Warm dyeing dyes
- Suitable for exhaust and continuous application

7.0 Corafix XB

- Brilliant Hues
- Rapid fixation efficiency

8.0 Corafix XD (Colourtex Petent)

- High build-up for deep to very deep shades
- High fixation

9.0 Corafix GD / Ultra GD

- High build-up for deep to very deep shades
- High fixation

10.0 CoraCARE[®] EF

- Dyes for suitable colouration of cellulosic as per Detox 2020 (ZDHC) requirements.

11.0 Coracion HE

- High exhaust & high temperature dyeing
- Suitable for yarn and fabric dyeing
- Bright hues and better migration

12.0 Coracion HEXL

- Bis-monochloro triazine base
- High exhaust & high temperature dyeing
- Good post mercerisation fast properties
- Especially recommended for yarn dyeing by exhaust

13.0 Coractive P

- Monochloro triazine type
- Dyes for printing on cellulose
- Good print paste stability
- Good wash-off & least staining on un-printed portion

14.0 Benzoyl Peroxide (Fast Dyes)

- Range of dyestuff suitable for terry towel application

15.0 Preparation of Goods

- Goods for dyeing/printing should be thoroughly desized, scoured

and preferably mercerized/causticised prior to dye application. Traces of residual chlorine and Peroxide should be removed by treating the goods.

Ready for dyeing / printing fabric parameters

1. Absorbancy (2-3 seconds and circular spreading)
2. Good desizing (Tegewa rating of 6-7)
3. Whiteness Index (70 ± 2 as per CIE Index)
4. pH of core of fabric (6 to 6.5)
5. Residual peroxide (Nil check with Merck paper)

16.0 Process Water Quality

Following are the required parameters for process water suitability

Total hardness	50 ppm (3°German)
Copper	0.05 mg/l
Iron	0.05 mg/l
pH	7.0 ± 0.5

17.0 Solubility of the dyes

The pattern card illustrates dye solubility in gm/lit at 30C (Room temperature). Addition of urea improves dye solubility while electrolyte concentration in dyebath impairs it by 5-10%

18.0 Application

18.1 Exhaust dyeing : Isothermal dyeing method

Warm dyeing method suitable for Coralite, Corazol RFT, Corazol RD, Corafix GD, Corazol and Corafix Dyes

Substrate

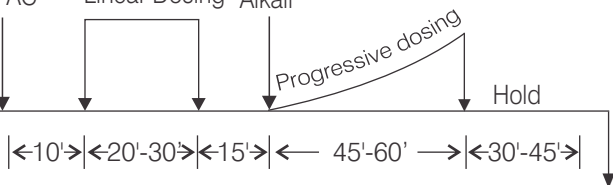
Salt +

0.5 to 1.0 g/l Levocol 2010 Dyes

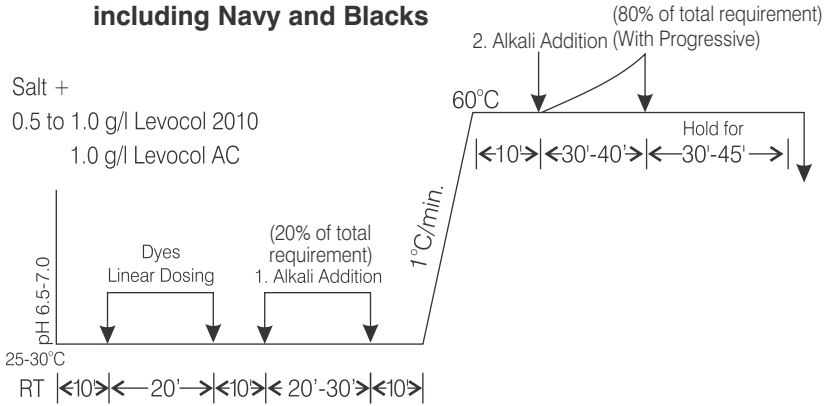
1.0 g/l Levocol AC Linear Dosing Alkali

pH 6.5-7.0

60°C

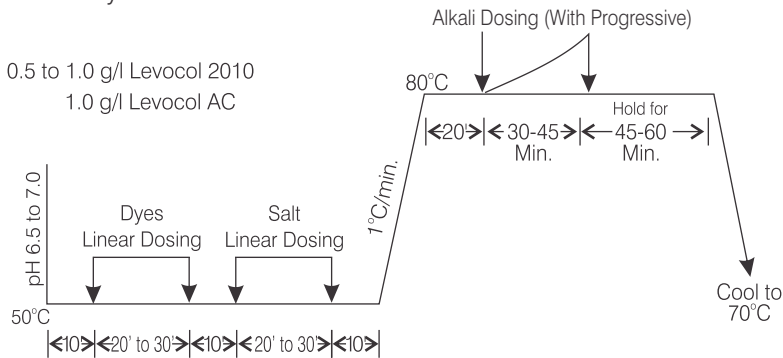


18.2 Exhaust dyeing: Temperature rise method for warm dyeing including Navy and Blacks

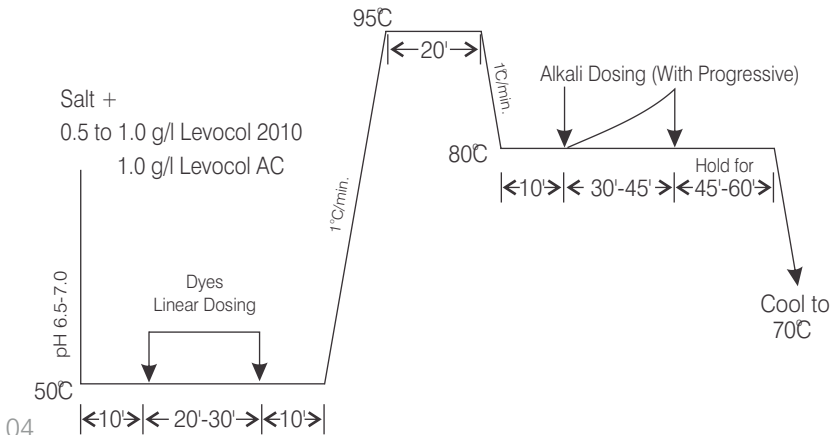


18.3 Exhaust dyeing: Temperature rise method for Hot dyeing

Method suggested for dyeing of Coracion HE and Coracion HEXL dyes.



18.4 Exhaust dyeing: Migration method for dyeing dyestuff



- All Turquoise blue recipes should be dyed by method 18.3 or 18.4.
- Glauber salt is recommended for dyeing of Corazol Turquoise Blue G (Different strength variations) & Corazol Brill Blue RN / RN 150% in recipe.
- Glauber salt should not exceed than 50 g/l in dyeing of Corazol Brill Blue RN / RN 150%.
- Levocol AC is lubricating agent suggested to use for fabric dyeing. In yarn dyeing, it should be omitted.
- Levcol 2010 is Low foaming, washing off agent for reactive dyes with special sequestering and protective colloidal properties.

18.5 Salt and Alkali recommendations for reactive dyeing (Bleached unmercerised cotton)

MLR 1:10

Dyes %	All Corazol, Corafix range of dyes (Dyg at 60°C)				All Coracion HE and HEXL range of dyes (Dyg at 80°C)			
	Mixed Alkali				Mixed Alkali			
	G. Salt gpl	Soda Ash gpl	Soda Ash gpl	Caustic (50%) ml/lit	G. Salt gpl	Soda Ash gpl	Soda Ash gpl	Caustic (50%) ml/lit
Up to 0.5%	20	10	-	-	20	10	-	-
0.5 to 1.0%	40	10	5	0.75 to 1.0	40	15	-	-
1.0 to 2.0%	50	15	5	1.0 to 1.5	50	15	5	0.5 to 0.75
2.0 to 4.0%	60	20	5	1.5 to 2.0	60	20	5	0.75 to 1.00
4.0 to 5.0%	70	-	5	2.0 to 2.25	70	20	5	1.25
5.0 & above	80	-	5	2.25 to 3.0	80	20	5	1.5

Salt Alkali recommendations for Coralite FL MLR 1:10							
Product	Conc.	<0.1%	0.1-1%	1%-2%	2%-3%	3%-5%	>5%
Dyeing at 60°C	G. Salt (gpl)	10	10-30	30-40	40-50	50-60	60-80
	Soda Ash (gpl)	2	2-6	6-8	8-9	9-10	12

**18.5.1 Salt and Alkali recommendations for reactive dyeing
(Bleached unmercerised cotton)**

MLR 1:5

Dyes %	All Corazol, Corafix range of dyes (Dyg at 60°C)				All Coracion HE and HEXL range of dyes (Dyg at 80°C)			
	Mixed Alkali				Mixed Alkali			
	G. Salt gpl	Soda Ash gpl	Soda Ash gpl	Caustic (50%) ml/lit	G. Salt gpl	Soda Ash gpl	Soda Ash gpl	Caustic (50%) ml/lit
Up to 0.5%	20	10	-	-	20	10	-	-
0.5 to 1.0%	35	12	6	0.9 to 1.1	35	15	6	-
1.0 to 2.0%	45	15	6	1.1 to 1.5	45	15	6	0.6 to 0.9
2.0 to 4.0%	60	20	6	1.5 to 2.0	60	20	6	0.9 to 1.2
4.0 to 5.0%	70	20	6	2.0 to 2.5	70	20	6	1.2 to 1.5
5.0 & above	80	20	6	3.0	80	20	6	1.5

Salt Alkali recommendations for Coralite FL MLR 1:5

Product	Conc.	<0.1%	0.1-1%	1%-2%	2%-3%	3%-5%	>5%
Dyeing at 60°C	G. Salt (gpl)	6	8-20	20-30	30-40	40-50	50-60
	Soda Ash (gpl)	3	4-7	7-10	9-10	10-12	14

**18.5.2 Salt and Alkali recommendation (Corafix XB dyes):
(Mercerized cotton and Regenerated cellulose)**

MLR 1:10

	Dyestuff concentration (%)							
	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5%	
Corafix XB 60°C								
G. Salt	gpl	5	5-10	10-15	15-20	20-25	25-35	40
Soda Ash	gpl	3	3	3-5	5-7	7-8	8-10	10

**18.5.3 Salt and Alkali recommendation (Corafix XB dyes):
(Bleach unmercerised cotton)**

MLR 1:10

	Dyestuff concentration (%)							
	<0.1	0.1-0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	>5%	
Corafix XB 60°C								
G. Salt	gpl	10	10-15	15-20	20-30	30-40	40-50	60
Soda Ash	gpl	3	3-4	4-6	6-8	8-9	9-10	10-12

18.5.4 Salt and Alkali recommendations for reactive dyeing MLR 1:10 (Mercerised cotton and regenerated cellulose)

Dyes %	All Corazol, Corafix, Coralite range of dyes (Dyg at 60°C)		All Coracion HE and HEXL range of dyes (Dyg at 80°C)	
	G. Salt gpl	Soda Ash gpl	G. Salt gpl	Soda Ash gpl
Up to 0.5%	20	5	20	5
0.5 to 1.0%	30	6	30	6
1.0 to 2.0%	40	8	40	8
2.0 to 4.0%	50	10	50	10
4.0 to 5.0%	50	12	50	12
5.0% above	60	15	60	15

18.5.5 Salt and Alkali recommendations for reactive dyeing MLR 1:5 (Mercerised cotton and regenerated cellulose)

Dyes %	All Corazol, Corafix, Coralite range of dyes (Dyg at 60°C)		All Coracion HE and HEXL range of dyes (Dyg at 80°C)	
	G. Salt gpl	Soda Ash gpl	G. Salt gpl	Soda Ash gpl
Up to 0.5%	15	6	15	6
0.5 to 1.0%	25	8	25	8
1.0 to 2.0%	35	10	35	10
2.0 to 4.0%	45	12	45	12
4.0 to 5.0%	50	15	50	15
5.0% above	50	20	50	20

18.5.6 Wash-off process in exhaust application

1. Overflow rinse cold.
2. Neutralisation with acetic acid at 50°C for 10 minutes.
3. Hot wash at 80°C for 10 minutes.
4. Soaping at 98°C with 1g/l Levocol 2010 (anionic detergent) for 10 minutes
(for deep shade above 5% depth additional soaping at 98°C for 10 min. is required)
5. Again hot wash at 80°C for 10 minutes.
6. Rinse cold & adjust pH (6.0) of fabric.

18.6 Cold pad batch

18.6.1 Cold pad batch dyeing using Sodium Silicate and Caustic Soda

Dyes	X	gpl
Levocol NF (Wetting Agent)	1-2	gpl
Urea (If Required)	50-200	gpl
Sodium Silicate (58-60°C Be / 133°Fw)	85	gpl
(Na ₂ O:SiO ₂ = 1:2.1)	(Sodium Silicate in the stock tank- should be approx 45 to 50°Fw)	
Caustic Soda (72°Fw)	4-12	ml/lit. (For shades above 30 gpl)
Dosing		
Dye : Alkali	4:1	(Mixing pump required)
Expression	55-65	%
Batching Time	16	hrs.
Liquor Temperature	25°C ± 2°	
Fixation Temperature	25°C ± 2°	

18.6.2 Cold Pad Batch Dyeing using Soda-Caustic Soda

Alkali System

Dye	gpl	<20	20-40	40-60	60-80	80-100
Soda Ash	gpl	20	20	20	20	20
Caustic soda (50%)	ml/lit.	3	5	7	9	11

For Coralite FL - Cold pad batch process dyeing using only soda ash

Dye	gpl	1	5	10	20	30
Soda Ash	gpl	15	15	20	20	20

Mixing pump required (Dosing - Dye : Alkali = 4:1)

Padding / Batching Temperature 25°C ± 2°C

Note: For Coralite FL range, omit to use Caustic Soda (50%). It is advisable to use only Soda Ash for better continuity.

18.6.3 Pad-Dry-Pad-Steam method

Dye Padding	
Dyes	X gpl
Levocol NF (Wetting agent)	2 gpl
Levocol AMK (Anti migrating agent)	5-10 gpl
Levocol RESIST (Mild oxidant)	5 gpl
Padding temp.	25°C
% Expression	55-65%

Drying (with IR- pre-drying) at 120-140°C- Cool the fabric

Chemical Pad with

Dye conc. (gpl)	<20	20-40	40-60	>60
Salt (gpl)	250	250	250	250
Soda Ash	20	20	20	20
Caustic soda (50%)	3	4	6	8

Steaming at 102°C in saturated steam for 60-90 seconds followed by Washing off process

18.6.4 Pad-Air-Humidifix process (E-Control process)

Dyes	X gpl
Levocol NF (Wetting agent)	2-4 gpl
Levocol RESIST (Mild Oxidising agent)	5 gpl
Levocol AMK (Anti-migrating agent)	5-10 gpl
Pad - Air - Humidify with 25-30% relative humidity and surrounding temp. of 120-130°C for 2 Mins. 30 Sec. (or 3 min.)	

Alkali Table

Dye gpl	<10	<20	<40	<60	<80	<100	>100
Soda Ash gpl	20	20	20	20	20	20	20
NaOH 50% ml/lit	-	3.0	6.0	8.0	10.0	12.0	14.0

Mixing pump is required (Dosing - dye : Alkali:4:1)

Note : For Coralite FL range, omit to use Caustic Soda (50%). It is advisable to use only Soda Ash for better continuity.

18.6.5 Pad-Dry-Thermofix method

Dyes	X gpl
Levocol NF (Wetting agent)	2 gpl
Levocol AMK (Anti migrating agent)	5-10 gpl
Levocol RESIST (Mild oxidant)	5 gpl
Urea	50-100 gpl
Soda Ash	as per table below
Padding temperature	25°C
% Expression	55-65%

Dyestuff (gpl)	Soda Ash (gpl)	Urea (gpl)
<20	10	50
20-50	15	75
>50	20	100

Drying (with IR-pre-drying) at 120^o-140^oC - Cool the fabric

Fixation

Time (Second)	75-90	60-75	45-60
Temperature (°C)	140	160	180

18.6.6 Pad-Steam Process

Dyes	X gpl
Levocol NF (Wetting agent)	2-4 gpl
Levocol RESIST (Mild oxidizing agent)	5 gpl
Soda Ash	10-20 gpl (as per table)
Glauber Salt	0-20 gpl (as per table)
Pad (Dye+Alkali at 20-25°C, then streaming at 102°C/90 Seconds)	

Salt & alkali Table

Dye Conc. gpl	<10	10-20	20-30	Above >30
G. Salt gpl	-	-	-	20
Soda Ash gpl	10	20	20	20
Caustic Soda (50%) ml/lit	-	-	2.0 ml/lit	4.0 ml/lit

Mixing pump is required (Dosing - dye : Alkali:4:1)

Note : For Coralite FL range, omit to use Caustic Soda (50%). It is advisable to use only Soda Ash for better continuity.

18.6.7 Wash-off Process in continuous application

Bath	Silicate Method	Silicate Free Method
1st	50-60°C	50-60°C
2nd	50-60°C	50-60°C Set pH 5-6 with Acetic Acid
3rd	80°C	80-95°C
4th	95°C add Levocol 2010 (Anionic detergent)	95°C add Levocol 2010 (Anionic detergent)
5th	95°C add Levocol 2010 (Anionic detergent)	95°C add Levocol 2010 (Anionic detergent)
6th	80°C	80°C
7th	40°C / Set pH = 6.0	40°C / Set pH = 6.0

Continuous washing units based on counter flow technology are particularly economical as they save water and energy. In the last rinse bath the goods should be set at around pH = 6.0. If the last rinse bath is alkaline, acetic acid should be added to bring the pH of the substrate to pH 6

(Above example for an open width washer with 7 baths)

19.0 Printing

Most important ingredient is the thickener.

Sodium alginate is the ideal thickener for the purpose, which does not react with the dyestuff and can be very easily washed off after printing

19.1 Print recipe (1-Phase Printing method)

19.1.1 Stock thickener

Sodium alginate (Printex CT-SA) thickener / Printex C-RP*	40Parts
Urea	100-200 Parts
Levocol RESIST (Resist salt)	10Parts
Levocol CKBI (anionic, anti foaming & penetrating print paste additive)	5Parts
Sodium bicarbonate	35-40Parts
Water	XParts

	1000Parts

on regenerated cellulose like Viscose, Rayon etc., use of synthetic thickener like Printex C-RP is most suitable.

*(Synthetic Natural Mix)

19.1.2 Print paste preparation

Stock thickener	X	Parts
Coractive P dyes	Y	Parts
	-----	-----
	1000	Parts

19.1.3 Dyestuff fixation

Goods are printed and dried. Dyestuff fixation can be done by any one of the following methods:

1. Steaming at 102°C (Saturated steam) for 10 minutes
2. Thermofixation at 150-200°C for 7-5 minutes (In case of thermofixation, addition of urea should be 200 parts) (not suitable for viscose fiber)

19.1.4 After Treatment

Suggested after treatment

Bath 1 Over flow / cold rinse for 10 min.

Bath 2 Neutralise with Acetic acid and rinse for 10 min. At 50-60°C.

Bath 3 Rinse at 80°C for 10 min.

Bath 4 Soaping with 1 gpl Levocol 2010 (washing off agent) at 95°C for 10 min. Repeat soaping for deep shades.

Bath 5 Rinse at 80°C. for 10 min.

Bath 6 Rinse cold for 10 min. Neutralise with Acetic acid by keeping final bath pH 5-6.

20.0 Print - Dry - Silicate method (Two phase printing method)

Recipe

Dyes	X	Parts
Urea	50-100	Parts
Printex CT-SA (Sodium Alginate) (5%)	600	Parts
Water	Rest	Parts
	-----	-----
Total	1000	Parts

Process details

Print → Dry at 90°C and cool → Pad with [Sod. silicate (65fw) and Caustic (50%) 2-5 ml/lit at Expression - 60±2%] → Batching (16 hrs) → Cold wash → Overflow rinse → Hot wash → Soap → Hot wash → Cold wash → Neutralise → Dry

20.1 Dischargeability at 1/1 S/D

Goods for discharge printing should be pretreated with mild oxidising agent prior to padding of ground shade.

Print recipe

Rongalite (Sodium suphoxylate formaldehyde)	15 Parts
Titanium di-oxide	5 Parts
Thickener (5%)	40 Parts
Sodium Carbonate	3-5 Parts
Water	Rest Parts

Total	100 Parts

Process details

Print → Dry at 90°C → Steam at 102°C (Saturated Steam) for 10 min. → Cold wash → Overflow rinse → Neutralise → Hot wash → Soap → Hot wash → Cold wash → Neutralise → Dry

21.0 Cora CARE[®] EF A special P-CA free reactive range developed by Colourtex:

Colourtex as a “Responsible care” company manufacturing & marketing textile dyestuff and chemicals, believe the responsibility to contribute in providing solution to our customers. CoraCARE[®] EF -New reactive dyes product range designed and developed by Colourtex is fully in compliance of ZDHC MRSL and thus providing sustainable solution to the textile processing house. This range is specially designed for Detox 2020 Green Peace Campaign.

Features and Benefits of CoraCARE® EF range:

Features of Product range

Benefits to customers

Reactive dyestuff range free from all 11 priority hazardous chemicals mentioned by ZDHC-MRSL

- Ecologically viable to promote/ work for special brands Following Detox 2020 & ZDHC
- Brand value can be increased for dyer
- p-CA free reactive dyestuff

Fast fixation dyestuff

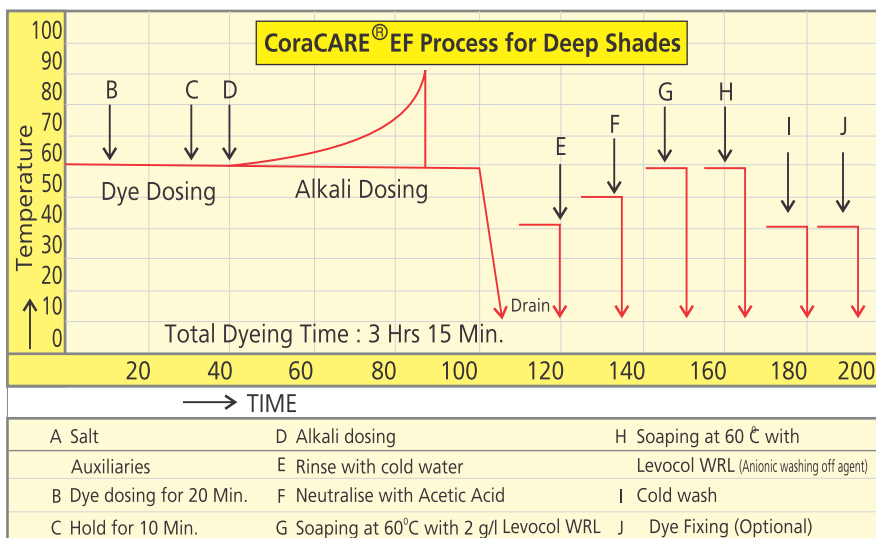
- Dyer can short process cycle and compensate cost by production efficiency
- Saving of energy due to short cycle
- Dyer can use it in exhaust and continuous application

Less substantivity of hydrolysed dye

- Easy washing off at low temperature resulting shortening of washing cycle.
- Saving of Energy & water
- Better Fastness

Other features useful for application

- Dischargeable
- Low salt dyeable resulting in lowload on effluent



Advantages with CoraCARE[®] EF range over conventional dyeing process :

- 30-40% saving in water
- 20-23% saving in dyeing cycle
- 10-15% saving in energy
- No possibility of any banned amine and other 10 priority chemicals restricted by ZDHC on the dyed fabric as well as form waste water

Fastness Tests

21.0 Washing fastness ISO 105 C10 : C3 60°C

Soap (Non- Ionic detergent)	5 g/l
Sodium Carbonate	2 g/l
M:L Ratio	1 : 50
Time	30 min
Temperature	60°C

22.0 Perspiration fastness (ISO 105 E04)

	Alkaline	Acidic
L-Histidine mono hydrochloride, monohydrate	0.5 gpl	0.5 gpl
Sodium chloride	5.0 gpl	5.0 gpl
Disodium hydrogen orthophosphate Dihydrate	2.5 gpl	--
Sodium dihydrogen orthophosphate Dihydrate	--	2.2 gpl
Sodium hydroxide (0.1 mol/lit)	pH 8	pH 5.5
M:L Ratio	1 : 50	

Dip the fabric in above recipe for 30 minutes at room temp. then dwell for 4 hour at $37 \pm 2^{\circ}\text{C}$. under 4.5 Kg. weight(12.5 Kpa)

23.0 Fastness to chlorinated water (ISO 105 E03)

Sodium hypochlorite containing 20 mg/l available chlorine under neutral pH for

1 hour at $27 \pm 2^{\circ}\text{C}$.

M:L Ratio 1 : 100

24.0 Abbreviation

D - Dischargeable	SD - Standard Depth
ND - Not Dischargeable	G. Salt - Glauber's Salt
PD - Partial Dischargeable	C. Salt - Common Salt
CS - Change in Shade	
SC - Staining on Cotton	

This information is provided in good faith, as per our current knowledge of the product without any liability.









* The shades illustrated in this shade card are dyed at 1/1 SD on bleached mercerised cotton









* All Blacks illustrated are at 6% concentration.









* Fastness ratings (except light fastness) are given at 1/1 standard depth. For Blacks, 2/1 standard depth ("As Black") considered.







* Light fastness ratings are given at respective standard depth mentioned in the shade card.







Patterns

Dyeing on Mercerised Cotton	Coralite High light fast	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties											Dischargeability	
						Light						ISO 105 E04			Chlorine Fastness 1/1SD ISO 105 E03 (20 ppm)			
						AATCC 16E 20 AFU			ISO 105 B02 (Up to grade -6)			Washing fastness ISO 105 C10 : C3 60°C	Perspiration Alkaline	Perspiration Acidic				
						1/1 SD	1/12 SD	1/24 SD	1/1 SD	1/12 SD	1/24 SD					CS		CS
	TO72487213 Yellow FL-G Gran	1.5%	150	150	150	4-5	4-5	4-5	6	5-6	5-6	5	4-5	4-5 4-5	4-5 4-5	3-4	PD	
	TO72488313 Golden Yellow FL-NP Gran	2.4%	150	150	150	5	4-5	4	6	4	4	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO72486213 Yellow FL-2R Gran	1.8%	140	100	100	4-5	4-5	4-5	6	5	4-5	4	4-5	4-5 4-5	4-5 4-5	4-5	PD	
	TO74488123 Brill Red FL-G Gran	4.0%	100	100	100	3.5	4	3.5	4	4	3-4	4	4-5	4-5 4	4-5 4	4-5	ND	
	TO74487120 Red FL-3G	1.14%	165	100	40	3.5	3	2.5	4	3	3	4	4-5	4-5 4-5	4-5 4-5	4-5	ND	
	TO74486213 Red FL-2B Gran	4.0%	85	35	35	4-5	4-5	4-5	6+	3-4	3	4	4-5	4-5 4-5	4-5 4-5	4	PD	
	TO76446313 Blue FL-R Gran	3.8%	100	70	70	5	4-5	4	6	4	4	4	4	3-4	4-5 3-4	4-5 4	4	ND
	TO76700120 Blue G	2.7%	100	100	100	4-5	4	4	5-6	4-5	4-5	4	4	4-5 3-4	4-5 4	2-3	ND	





Dyeing on Mercerised Cotton	Corazol Pad and print application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU		ISO 105 B02 (Up to grade - 6)				Perspiration Alkaline	Perspiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	T072740120 Brill Yellow GL	3.2%	100	30	30	5	5	6+	6	4-5	4-5	4-5 4-5	4-5 4-5	4-5	upto 1.5%	
	T072520118 Yellow FG	4.0%	150	70	70	4.5	3.5	6	4-5	4	4-5	4-5 4-5	4-5 4-5	2-3	D	
	T072550116 Yellow GR	3.3%	100	80	80	4.5	4	6+	5	3-4	4-5	4-5 4-5	4-5 4-5	2	D	
	T072720117 Golden Yellow RNL H/C	1.8%	150	90	90	4.5	4	5-6	5	5	4-5	2-3 4-5	4-5 4-5	2-3	D	
	T073510123 Orange 3R Gran	2.2%	60	30	30	4.5	3.5	5-6	5-6	4	4-5	4-5 4-5	4-5 4-5	3	D	
	T074650116 Red 5B H/C	4.0%	60	40	40	4	3.5	3-4	3-4	4	4-5	4-5 4-5	4-5 4-5	4	D	
	T074540120 Red BB	1.63%	100	80	80	4	3.5	3-4	3	4-5	4-5	4-5 4-5	4-5 4-5	4	D	
	T074610116 Brill Red 3B	2.5%	100	60	60	4.5	4	5-6	5-6	4	4-5 4-5	4-5 4-5	4-5	4-5	D	








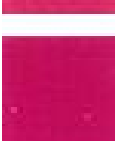
Dyeing on Mercerised Cotton	Corazol Pad and print application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD AATCC 16E 20 AFU	1/6 SD ISO 105 B02 (Up to grade - 6)	1/1 SD	1/6 SD	CS	CS	SC	CS			
						CS	CS	SC	SC	CS	CS	CS	CS			
	TO74670116 Red RB 133%	3.8%	100	50	30	4.5	3.5	5-6	5-6	3-4	4-5 4-5	4-5 4-5	4-5 4-5	3	ND	
	TO74530118 Red RBL H/C	2.6%	100	80	80	4	4	4	4	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO75500116 Violet 5R H/C	2.7%	100	60	60	4.5	4.5	6	6	4	4-5	2-3 4-5	4-5 4-5	4-5	D	
	TO76660116 Turq Blue G 133%	4.9%	100	70	70	4.5	4.5	6	6	4	3-4	4-5 4	4-5 4-5	3-4	ND	
	TO76665116 Turq Blue G 266%	3.25%	100	70	70	4.5	4.5	6	6	4	3-4	4-5 4	4-5 4-5	3-4	ND	
	TO76500116 Turq Blue G	3.9%	100	70	70	4.5	4.5	6	6	4	3-4	4-5 4	4-5 4-5	3-4	ND	
	TO76620120 Brill Blue RN	4.9%	100	70	70	4.5	4.5	6+	6+	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO76620117 Brill Blue RN 150%	3.2%	100	70	70	4.5	4.5	6+	6+	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	









Dyeing on Mercerised Cotton	Corazol Pad and print application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E	20 AFU	ISO 105 B02	(Up to grade - 6)	ISO 105 C10 : C3 60C	Perspiration Alkaline	Perspiration Acidic				
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	SC	SC	CS		
	TO76590116 Blue BB 133%	4.6%	100	60	60	4.5	4	6+	6+	4	4-5	4-5 4-5	4-5 4-5	3-4	upto 1%	
	TO76570116 Navy Blue GG 133%	2.2%	150	60	60	4.5	3	4	4	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO79750119 Black B 133%	2/1 6.0%	150	100	100	2/1 4.5	1/1 4	2/1 5	1/1 4-5	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	
	TO79750116 Black B 150%	2/1 6.0%	150	100	100	2/1 4.5	1/1 4	2/1 5	1/1 4-5	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	
	TO79870116 Black RL	2/1 6.0%	100	50	50	2/1 4.5	1/1 4.5	2/1 5	1/1 5-6	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 3	ND	
	TO79650116 Black GSA	2/1 6.0%	150	100	100	2/1 4	1/1 4	2/1 3-4	1/1 3-4	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	


Dyeing on Mercerised Cotton	Corazol RFT High Reproducibility	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness		ISO 105 E04		Chlorine Fastness		
						AATCC 16E	20 AFU	ISO 105 B02	(Up to grade - 6)	ISO 105 C10 : C3 60°C	Perspiration Alkaline	Perspiration Acidic	Chlorine Fastness	ISO 105 E03 (20 ppm)		
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	TO72690113 Yellow RFT Gran	1.6%	150	90	90	4-5	3-4	5	4	4	4-5	4-5 4-5	4-5 4-5	3-4	D (up to 1%)	
	TO74630113 Red RFT Gran	1.6%	150	70	70	4	2-3	3-4	2	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO74660116 Deep Red RFT	1.7%	100	80	80	4	3-4	5	3-4	4	4-5	5 5	5 5	3	ND	
	TO76630113 Blue RFT Gran	3.34%	100	80	80	4	2.5	4	2	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO79661120 Grey RFT	3.3%	100	90	90	5	3-4	5	3	4-5	3-4	4 4-5	4-5 4	4	ND	
	TO76680113 Navy RFT Gran	1.6%	125	90	90	3	2	3-4	3	4	4-5	4-5 4-5	4-5 4-5	3-4	D	








Dyeing on Mercerised Cotton	Corazol X-RFT Good Fastness High Reproducibility	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU		ISO 105 B02 (Up to grade - 6)				Perspiration Alkaline	Perspiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS	CS	
	TO72691123 Yellow X-RFT Gran	2.0%	150	70	70	4-5	3-4	5	4	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74631123 Red X-RFT Gran	1.7%	150	60	60	4-5	2-3	4-5	2-3	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO74633120 Cherry X-RFT	1.5%	140	100	100	4	3.5	5	4	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO74632123 Carmine X-RFT Gran	1.2%	150	70	70	4-5	3-4	4	3	4	4-5	4-5 4-5	4-5 4-5	4	D	
	TO76683120 Space X-RFT	1.5%	140	100	100	3.5	2.5	3-4	3-4	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO76681120 Navy X-RFT	2.9%	100	70	70	3-5	2.5	3	2	4	4-5	4-5 3-4	4-5 4-5	3-4	ND	









Dyeing on Mercerised Cotton	Corazol RD Robust trichromy	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD AATCC 16E 20 AFU	1/6 SD ISO 105 B02 (Up to grade - 6)	1/1 SD	1/6 SD	CS	CS	SC	CS			
						CS	CS	SC	SC	CS	CS	CS	CS			
	TO72700113 Yellow RD Gran	2.4%	150	70	70	4-5	4-5	4	5	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO73600113 Orange RD Gran	2.7%	100	60	60	4	3	4	3	4	4-5 4-5	4-5 4-5	4	ND		
	TO74640113 Red RD Gran	2.1%	150	70	70	4.5	3.5	3	3	4	4-5 4-5	4-5 4-5	3-4	ND		
	TO76640113 Blue RD Gran	3.34%	100	80	80	4	3	3	3	4	4-5 4-5	4-5 4-5	3-4	ND		









Dyeing on Mercerised Cotton	Corafix ME Warm exhaust application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU		ISO 105 B02 (Up to grade - 6)				Perspiration Alkaline	Perspiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS	CS	
	TO72320126 Yellow ME4G 150%	3.8%	80	50	50	4	4	5.6	5	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO72340116 Golden Yellow MER 150%	3.5%	130	60	60	4-5	4-5	6	5-6	4	4-5	4-5 4-5	4-5 4-5	3-4	PD	
	TO73310118 Orange ME2R 150%	1.8%	40	30	30	3.5	2	4	2-3	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74376120 Scarlet ME2G	1.86%	100	100	100	4	3	5-6	4-5	4	4-5	4-5 4-5 (lyocell) (lyocell)	4-5	ND		
	TO74460216 Red MEGF	1.43%	100	60	60	4	3	5-6	3-4	3-4	4-5	4-5 4-5	4-5 4-5	2-3	ND	
	TO74377117 Red ME2G 150%	5.0%	100	60	60	4	4	4	4	4	4.5	4-5 4	4-5 4-5	4-5	D	
	TO74400116 Red ME3B	1.9%	100	30	10	4-5	3.5	4	3	4-5	3-4	4-5 4-5	4-5 4-5	3-4	ND	
	TO74310116 Red ME4B 150%	2.7%	150	80	80	4.5	3	4	2-3	4	4-5	4-5 4-5	4-5 4-5	4	ND	









Dyeing on Mercerised Cotton	Corafix ME Warm exhaust application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E	20 AFU	ISO 105 B02	(Up to grade - 6)	CS	CS	Persepiration Alkaline	Persepiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	SC	SC	CS		
	T076420113 Royal Blue 2R Gran	2.6%	100	80	80	4.5	4-5	6+	6	4	4-5	4-5 4	4-5 4-5	3-4	ND	
	T076420150 Brill Sky Blue N	1.55%	150	80	80	4.5	4-5	6+	6	4	4-5	4-5 4	4-5 4-5	3-4	ND	
	T076430120 Brill Sky Blue G	2.4%	100	60	60	4.5	4-5	6	5-6	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	T076420116 Brill Sky Blue GN	2.3%	100	80	80	4.5	4	6+	6	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	T076331120 Blue FG	3.4%	100	90	90	4.5	4-5	4	4	4	3-4	4-5 3	4-5 3	2-3	ND	
	T076370117 Blue MERS* 150%	4.7%	100	50	<10	4.5	3	6+	4	4	4-5	4-5 3-4	4-5 4-5	3-4	ND	
	T076380120 Dark Blue SLT	3.0%	100	70	70	4.5	4	5-6	5	4	4-5	4-5 3-4	4-5 4-5	3-4	ND	
	T076400118 Navy Blue SFB	2.9%	100	70	70	3-5	2.5	3	2	4	4-5	4-5 3-4	4-5 4-5	3-4	ND	






Dyeing on Mercerised Cotton	Corafix ME Warm exhaust application	Fastness Properties													
		1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Light				Washing fastness		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)	Dischargeability
						AATCC 16E	ISO 105 B02 (Up to grade - 6)		ISO 105 C10 : C3 60C		Perspiration Alkaline	Perspiration Acidic			
						20 AFU	1/1 SD	1/6 SD	CS	CS	CS	CS			
	T079374120 Black CT-WFL	2/1 6.0%	150	150	150	2/1 4	1/1 3.5	2/1 4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D









Dyeing on Mercerised Cotton	Corafix XB Brilliant hues	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD AATCC 16E 20 AFU	1/1 SD ISO 105 B02 (Up to grade - 6)	1/6 SD	1/6 SD	CS	CS	CS	CS			
						CS	CS	SC	SC	CS	CS	CS	CS			
	TO72362116 Luminous Yellow XXB	10%	80	50	50	3	3	3	3	4	4-5	3-4 4-5	3-4 4-5	4-5	ND	
	TO72320119 Yellow XB-3GE	3.8%	80	50	50	4	4	5-6	5	4	4-5	4-5 4-5	4-5 4-5	4	D	
	TO73381113 Orange XB-3G Gran	1.48%	100	<10	<10	3	1-2	4	2	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74380113 Scarlet XB-2G Gran	1.66%	80	<10	<10	4	2-3	4	2-3	4	4-5	4-5 4-5	4-5 4-5	2-3	ND	
	TO74381113 Red XB-4B Gran	2.3%	80	40	40	3	2	4	2	4	4	4-5 4-5	4-5 4-5	4-5	D	
	TO74382113 Red XB-6B Gran	2.26%	100	40	40	3	1-2	3-4	2	4	4	4-5 4-5	4-5 4-5	4-5	D	
	TO76320113 Blue XXB Gran	3.0%	100	40	40	4.5	4	5	3-4	4	4	4-5 4-5	4-5 4-5	2-3	ND	







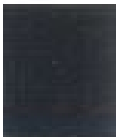

Dyeing on Mercerised Cotton	CorafixGD/ Ultra GD High build up High fixation	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU		ISO 105 B02 (Up to grade - 6)				Perspiration Alkaline	Perspiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	SC	SC	CS	CS	
	T072347116 Yellow GDR	1.7%	150	70	70	4.5	-	6	-	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	T072349116 Yellow GD3R	1.58%	150	70	70	4.5	4-5	6	5-6	4	4-5	4-5 4-5	4-5 4-5	3	ND	
	T072349216 Ultra Yellow GD	1.5%	150	150	150	4	--	5-6	--	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	T073380116 Orange GD3R	1.5%	120	50	50	4.5	4	5-6	3-4	4	4-5	4-5 4-5	4-5 4-5	4	D	
	T073380216 Ultra Orange GD	0.9%	120	50	50	4.5	--	5-6	--	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	T074318116 Scarlet GDR	1.0%	140	80	80	4	3.5	3-4	2	4	4-5	4-5 4-5	4-5 4-5	3	ND	
	T074430117 Coral GD3G	1.46%	100	90	90	3.5	3	3-4	3	4	4	4-5 4-5	4-5 4-5	4	ND	
	T074320120 Cherry Red GD3G	0.92%	100	100	100	4	3.5	5-6	4-5	4	4-5	4-5 4-5	4-5 4-5	4	D	









Dyeing on Mercerised Cotton	CorafixGD/ Ultra GD High build up High fixation	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD AATCC 16E 20 AFU	1/6 SD	1/1 SD ISO 105 B02 (Up to grade - 6)	1/6 SD	CS	CS	CS	CS			
	TO74319116 Red GDIN	2.4%	150	70	70	4.5	3.5	5	2-3	4	4-5	4-5 4-5	4-5 4-5	4-5	ND	
	TO74317116 Red GDB	1.3%	150	70	70	3.5	2	3	2	4	4-5	4-5 4	4-5 4	3	ND	
	TO74360116 Red GD2B	2.4%	100	50	50	4.5	3.5	5-6	3-4	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74337216 Ultra Red GD	1.9%	70	50	50	4.5	--	5-6	--	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74370116 Rubine GDB	1.0%	100	80	80	4.5	4	5-6	3	4	4	4-5 4-5	4-5 4-5	4	ND	
	TO74319216 Red GDN	2.6%	100	70	70	4	3.5	3-4	2-3	4	4-5	4-5 4-5	4-5 4-5	4-5	ND	
	TO74370117 Rubine GDN	1.0%	125	100	100	4.5	3.5	5	2-3	4	4	4-5 4-5	4-5 4-5	4	D	
	TO74370216 Ultra Wine GD	1.1%	125	100	100	4.5	--	6	--	4	4	4-5 4-5	4-5 4-5	4	D	


Dyeing on Mercerised Cotton	CorafixGD/ Ultra GD High build up High fixation	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU	ISO 105 B02 (Up to grade - 6)	CS	CS	Perspiration Alkaline CS	Perspiration Acidic CS					
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	T075300116 Violet GDB	2.07%	50	30	30	3.5	2.5	3	2	4	4	4-5 4-5	4-5 4-5	3	ND	
	T076339116 Navy GDG	1.5%	100	90	90	4	3	3	2-3	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	T076338116 Navy GDB	1.5%	125	100	100	4	3	4	2-3	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	T076338216 Ultra Navy GDSR	1.0%	150	150	150	3.5	--	4	--	4	4-5	4-5 4-5	4-5 4-5	2-3	D	
	T079300120 Black GDN	6.0%	2/1 150	100	100	4	2/1 3.5	1/1 3-4	2/1 3	1/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5	2/1 D	
	T079300130 Black GDNX	2/1 6.0%	150	100	100	2/1 3.5	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5	D	
	T079360116 Black GDNN	2/1 6.0%	150	100	100	2/1 3.5	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5	D	
	T079360119 Black GDNNX	2/1 6.0%	150	100	100	2/1 4	1/1 4	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5	D	









Dyeing on Mercerised Cotton	CorafixGD/ Ultra GD High build up High fixation	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness		ISO 105 E04		Chlorine Fastness		
						AATCC 16E	20 AFU	ISO 105 B02	(Up to grade - 6)	ISO 105 C10 : C3 60°C	Perspiration Alkaline	Perspiration Acidic	Chlorine Fastness	ISO 105 E03 (20 ppm)		
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	TO79360450 Black GDE	2/1 6.0%	140	120	120	2/1 3.5	1/1 3.0	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4	2/1 4-5 4	2/1 4	D	
	TO79320116 Jet Black GDG 110%	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	
	TO79320126 Jet Black GDGN 110%	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	
	TO79330118 Jet Black GDR	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	
	TO79360416 Black GDRE	2/1 6.0%	140	120	120	2/1 3.5	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D	




Dyeing on Mercerised Cotton	Corafix XD High build up High fixation	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	SC	SC	CS	CS	
						AATCC 16E	20AFU	ISO 105 B02	(Up to grade - 6)	Perspiration Alkaline	Perspiration Acidic					
	TO72352120 Yellow XD	2.0%	150	150	150	4-5	4.5	5	-	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO72351120 Yellow XDR	2.27%	150	70	70	4.5	4.5	3-4	3-4	4	4	4-5 4-5	4-5 4-5	4	D	
	TO73380217 Naranja XD	0.9%	120	50	50	4.5	-	5-6	-	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO73362120 Orange XDWF	1.3%	120	50	50	3.5	-	3-4	-	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO74390120 Chili Red XD	2.1%	150	100	100	4	3	3-4	3-4	4	4-5	4-5 4	4-5 4	4	ND	
	TO74351120 Red XD2B	2.0%	150	100	100	4.5	3	4	-	4	4-5	4-5 4-5	4-5 4-5	4-5	ND	
	TO74300120 Red XDWF	1.2%	100	70	70	4	3	3-4	2-3	4	4-5	4-5 4-5	4-5 4-5	4	D	
	TO74350120 Carmine XD	1.9%	100	70	70	4	-	3-4	-	4	4-5	4-5 4-5	4-5 4-5	4	D	





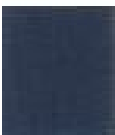
Dyeing on Mercerised Cotton	Corafix XD High build up High fixation	Fastness Properties													Dischargeability
		1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)	
						AATCC 16E		ISO 105 B02 (Up to grade - 6)		CS	CS	CS	CS		
						1/6 SD	20 AFU	1/1 SD	1/6 SD						
	TO78320120 Brown XD	1.5%	80	50	50	3-4	-	4	-	4	4	4-5 4-5	4-5 4-5	3	D
	TO77310120 Dark Grey XD2G	2.2%	150	150	150	3	-	3-4	-	4	4-5	4-5 4-5	4-5 4-5	4	D
	TO76310120 Blue XD	3.3%	100	90	90	5	-	4	-	4	4	4-5 4-5	4-5 4-5	3-4	ND
	TO76350120 Navy XD	1.6%	140	80	80	4	-	4	-	4	4-5	4-5 4-5	4-5 4-5	3-4	D
	TO76339120 Navy XDG	1.5%	100	90	90	4	3	3	-	4	4-5	4-5 4-5	4-5 4-5	3-4	D
	TO79373123 Black XDWF Gran	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 3-4	1/1 3	2/1 4-5	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4-5	D
	TO79380120 Black XDG	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D
	TO79380220 Black XDR	2/1 6.0%	150	100	100	2/1 4	1/1 3.5	2/1 3-4	1/1 3	2/1 4	2/1 4-5	2/1 4-5 4-5	2/1 4-5 4-5	2/1 4	D

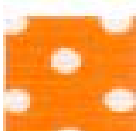
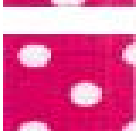

Dyeing on Mercerised Cotton	Cora CARE® EF P-CA free dyes	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU	ISO 105 B02 (Up to grade - 6)	CS	CS	Perspiration Alkaline	Perspiration Acidic					
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	T072322120 Lemon EF	2.9%	80	50	50	4.5	3.5	5-6	5	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	T074380120 Orange EF	1.1%	100	85	85	2.5	2.5	2-3	2-3	2-3	4	4-5 4-5	4-5 4-5	3-4	D	
	T074481120 Scarlet EF	1.9%	150	140	140	4	4	4	3-4	4	4-5	4-5 4-5	4-5 4-5	4-5	D	
	T074610216 Red EF	2.5%	100	60	60	4.5	4	5-6	5-6	4	4	4-5 4-5	4-5 4-5	4-5	D	
	T074480120 Carmine EF	1.5%	125	100	100	4	3.5	3-4	3	4	4	4-5 4-5	4-5 4-5	4	D	
	T076390120 Blue EF	2.2%	150	140	140	3	3	5	3-4 (Grade-4)	4	4-5	4-5 4	4-5 4	4-5	D	
	T077480120 Green EF	3.0%	150	125	125	3.5	3.5	4	3-4 (Grade-4)	4	4-5	4-5 4-5	4-5 4-5	4-5	D	
	T076480120 Navy EF	1.8%	125	100	100	3.5	3	3	3	4	4-5	4-5 4-5	4-5 4-5	3-4	D	


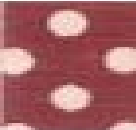
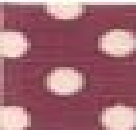
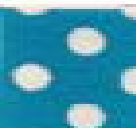




Dyeing on Mercerised Cotton	CoraCARE® EF P-CA free dyes	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness		ISO 105 E04		Chlorine Fastness		
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	ISO 105 B02 (Up to grade - 6)	ISO 105 C10 : C3 60°C	Perspiration Alkaline	Perspiration Acidic	ISO 105 E03 (20 ppm)		
						AATCC 16E	20 AFU	20 AFU	20 AFU	20 AFU	CS	CS	CS	CS	CS	
	T079480120 Black EF	2/1 6.0%	150	100	100	2/1 4	1/1 4	2/1 3-4 (Grade-4)	1/1 3-4	2/1 4	1/1 4-5	2/1 4-5 4	1/1 4-5 4	2/1 4	D	

Dyeing on Mercerised Cotton	Coracion HE High exhaust application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						AATCC 16E 20 AFU		ISO 105 B02 (Up to grade - 6)				Perspiration Alkaline	Perspiration Acidic			
						1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	CS	CS	CS	CS		
	TO72230118 Yellow HE6G	3.5%	80	50	10	4	3.5	6	5	4	4-5	4-5 4-5	4-5 4-5	4	D	
	TO72110116 Yellow HE4G	4.8%	25	20	20	4-5	4	6	4-5	4	4-5	4-5 4-5	4-5 4-5	3-4	D	
	TO72210116 Golden Yellow HE4R	2.5%	80	50	50	4	3.5	4	3-4	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO73100118 Orange HER	1.6%	80	25	25	3.5	2	2-3	1	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74100116 Red HE3B	2.9%	80	60	60	4	3	4-5	2-3	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO74110116 Red HE7B	1.6%	100	80	80	4	2.5	3	2	4	4-5	4-5 4-5	4-5 4-5	4	ND	
	TO76050116 Turq Blue HA	4.9%	90	10	<10	4	3.5	5-6	3	4	3-4	4-5 2-3	4-5 4	3-4	ND	
	TO76230116 Blue HEGN 125%	4.0%	60	50	50	4	4	5	4-5	4	4	4-5 3-4	4-5 3-4	2	ND	

Dyeing on Mercerised Cotton	Coracion HE High exhaust application	1/1 SD	Solubility g/l at Room Temp.	Solubility g/l at 60 °C (60g/l G. Salt)	Solubility g/l at 60 °C (60g/l C. Salt)	Fastness Properties										Dischargeability
						Light				Washing fastness ISO 105 C10 : C3 60°C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
						1/1 SD AATCC 16E 20 AFU	1/6 SD ISO 105 B02 (Up to grade - 6)	1/6 SD	CS	CS	SC	CS				
						CS	CS	SC	CS	CS	CS					
	TO76180116 Blue HERD	4.0%	100	60	60	3-5	3.5	3-4	3-4	4	2-3	4-5 4	4-5 4-5	3	ND	
	TO76210118 Navy Blue HER H/C	1.6%	100	60	60	3	2.5	2-3	1-2	4	4-5	4-5 4-5	4-5 4-5	3-4	ND	
	TO77100116 Green HE4B	1.2%	80	10	10	2.5	1.5	2	1	3	4-5	4-5 4-5	4-5 4-5	2	ND	

Dyeing on Mercerised Cotton	Coracion HEXL High build up PMF suitable	1/1 SD	Solubility g/l at Room Temp.:Neutral	Solubility g/l at 50°C (with G. salt)	Solubility g/l at 50°C (with G. salt)	Fastness Properties												Dischargeability
						Light						1/1 SD			Chlorinated Water (20 ppm) ISO 105 E03	1/1 SD		
						AATCC 16E 20 AFU	ISO 105 B02 (upto grade - 6)	Washing fastness ISO 105 C10:C3:60°C	ISO 105 E04		Post Mercerised							
									Perspiration Alkaline	Perspiration Acidic		CS	SC					
1/1 SD	1/6 SD	1/1 SD	1/6 SD	CS	SC	CS	CS	CS	CS	SC	CS							
	TO72290118 Golden Yellow HEXL	2.8%	125	60	60	4	4.5	5-6	5-6	4-5	4-5	4-5 4-5	4-5 4-5	4 R	4-5	4	ND	
	TO74220116 Crimson HEXL	2.2%	100	50	50	4-5	3.5	3-4	2	4-5	4-5	3-4 4	4 4	4	4-5	4	ND	
	TO74200117 Carmine HEXL	3.4%	100	50	50	4-5	4	3-4	2	4-5	4-5	5 4	5 4	4 Y	4-5	4	ND	
	TO76110120 Turq Blue HEXL	3.5%	80	10	<10	4-5	4-5	5-6	3-4	3-4	3	4-5 4-5	4-5 4-5	4	4	3-4	ND	
	TO76170118 Navy HEXL	2.8%	100	60	60	4	3.5	3-4	2	4-5	4-5	3-4 4-5	3-4 4-5	4	4-5	3-4	ND	

Printing on Mercerised Cotton	Coractive P/H Exclusive print application	Gram / Kg.	Solubility g/l at Room Temp.	Fastness Properties										
				Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)		
				AATCC 16 E		ISO 105 B02 (upto grade - 6)				Perspiration Alkaline	Perspiration Acidic			
				2.5%	0.83%	2.5%	0.83%	CS	SC	CS	SC		CS	
	TO72070116 Yellow P6GS	25 g/kg	100	4-5	4	6	5	4-5	4-5			4-5	4-5	3
	TO72000116 Yellow H4G	25 g/kg	100	4-5	4	6	5	4	4-5			4-5	4-5	3
	TO72010117 Golden Yellow P2RN	25 g/kg	100	5	5	6+	6	4-5	4-5			5	5	4
	TO73000119 Orange P2R	25 g/kg	150	4-5	3-4	4	3-4	5	5			4-5	4-5	4
	TO74030117 Red PBN	25 g/kg	130	4	3	3-4	3-4	5	5			4	4	4-5
	TO74020117 Red P4B	25 g/kg	150	3-4	2-3	4	3	5	5			4-5	4-5	4
	TO74020227 Red P4BN	25 g/kg	100	4	2-3	4	3	5	4-5			4-5	4-5	4
	TO74020226 Red PL2B	25 g/kg	100	4	4	3-4	3	5	4-5			4-5	4-5	4-5

Printing on Mercerised Cotton	Coractive P/H Exclusive print application	Gram / Kg.	Solubility g/l at Room Temp.	Fastness Properties									
				Light				Washing fastness ISO 105 C10 : C3 60C		ISO 105 E04		Chlorine Fastness ISO 105 E03 (20 ppm)	
				AATCC 16 E 20 AFU		ISO 105 B02 (upto grade - 6)				Perspiration Alkaline	Perspiration Acidic		
				2.5%	0.83%	2.5%	0.83%	CS	SC	CS	SC	CS	CS
	TO74001120 Red H8BN	25 g/kg	80	3	2-3	3-4	3	4	3-4	4-5 4	4-5 4	4	
	TO78020120 Red Brown P6R	25 g/kg	150	4-5	4+	5	4	4	4-5	4-5 3	4-5 3	4	
	TO74000116 Red Brown H4R H/C	25 g/kg	80	4	2-3	4	3	4-5	4-5	4-5 3-4	4-5 3-4	4	
	TO76060119 Turq Blue PGR 150%	25 g/kg	80	4-5	3-4	4	3	4	3-4	4-5 3-4	4-5 3	3-4	
	TO74000116 Turq Blue H5G	25 g/kg	50	4-5	4	6	3-4	4	3-4	4-5 2-3	4-5 3	3-4	
	TO76010117 Blue P3R	25 g/kg	130	5	4	6	4	4-5	4-5	4-5 4-5	4-5 4-5	3-4	
	TO76040116 Blue P5R	25 g/kg	120	4	3	4	3	4	4-5	4-5 4	4-5 4	3	
	TO76076118 Navy P2G	25 g/kg	100	4	2-3	4	2-3	4-5	4-5	4-5 3-4	4-5 3-4	4	

Benzoyl Peroxide Fast Reactive Dyes on Cotton

Beauticians at parlours often use facial creams / gel containing benzoyl peroxide (a safe skin bleacher) for skin care. When they wipe their hands on coloured terry towel, the cream tends to decolourise portion of the towel where it is stuck, leaving the towel non usable.

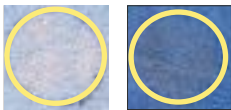
Few personal care cosmetics and acne treatment lotions meant for domestic use also contain benzoyl peroxide. Terry towels and home textiles contaminated with such personal care products are rendered useless due to bleaching effect of benzoyl peroxide contained in them.

Many reactive dyes commonly used in colouration of terry towel and home textiles are sensitive to such mild oxidising agents. Here in this technical brochure we bring to you a select range of reactive dyes from Colourtex stable to benzoyl peroxide.

Method used to evaluate Benzoyl Peroxide fastness based on : AATCC TM 135-2000. Acceptable change is 4.0 or above on Gray Scale.

(1-least, 5-highest)

Illustration of shade change of Reactive dye not resistant to Benzoyl Peroxide test







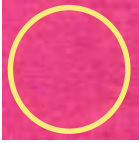


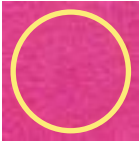







Corazol Blue RN

Test Concentration	After 24 hrs application & clean wash	Immediate wash after application
0.10%	1	2
1.00%	2	3.5

AATCC fastness rating to 10% Benzoyl Peroxide

Change after 24 hours			Products Name	Test	After 24 hrs	Immediate wash
0.1%	1.0%	3.0%		Concentration Exhaust Dyeing	application & clean wash	after application
			Corafix G. Yellow MER 150%	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Corafix Yellow GD-3R	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Coralite Yellow FL-2R	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Coralite Yellow FL-G	0.30%	4	4
				0.60%	4	4
				1.80%	4	4
			Corafix Red ME4B 150%	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Corafix Red GD-2B	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Corafix Red XD-2B	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
			Corazol Brill. Red 3B	0.10%	4	4
				1.00%	4	4
				3.00%	4	4

AATCC fastness rating to 10% Benzoyl Peroxide

Change after 24 hours			Products Name	Test	After 24 hrs	Immediate wash after application
0.1%	1.0%	3.0%		Concentration Exhaust Dyeing	application & clean wash	
			Corafix Rubine GD-B	0.10%	4	4
				1.00%	4	4
				3.00%	4	4
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			Corafix Red XB-4B	0.30%	4	4
				0.60%	4	4
				1.80%	4	4
<hr/>						
			Corafix Red XB-6B	0.30%	4	4
				0.60%	4	4
				1.80%	4	4
<hr/>						
			Corafix Dark Grey XD-2G	0.50%	4	4
				1.00%	4	4
				3.00%	4	4
<hr/>						
			Corafix Navy Blue SFB	0.33%	4.5	5
				1.10%	4.5	5
				2.20%	4.5	5

(This Information is provided in good faith, to the best of our knowledge and without liabilities)

Range of Reactive Dyes from Colourtex help customers worldwide for matching a wide gamut of shades on all selected substrates

Coralite FL	High light fastness dyes based on fluoro chemistry
Corazol	Vinyl sulphone based
Corazol RFT	Dyes for medium to dark shades with good reproducibility
Corazol X-RFT reproducibility	Dyes for dark to extra dark shades with good reproducibility
Corazol RD	Robust trichromy for exhaust dyeing for light shades
Corafix ME	Suitable for exhaust and padding applications
Corafix XB	Brilliant shades
Corafix GD / XD / Ultra GD	Dyes with high build up and high fixation for deep to very deep shades
CoraCARE® EF Detox	Dyes for sustainable colouration of cellulosics as per 2020 (ZDHC) requirements.
Coracion HE / HEXL	Dyes suitable for hot dyeing temperature and good post mercerisation fast properties.
Coractive P	Mono chloro triazine based dye for printing applications

The information provided are in good faith to the best of our knowledge and based on laboratory working conditions hence without liabilities.