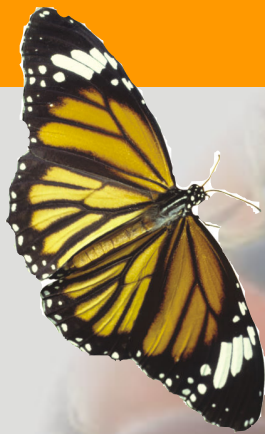


Corafix GD Technology



- Excellent build up
- High exhaustion and fixation
- Lower effluent load

Significant less dye is needed to achieve the required shade with Corafix GD dyes

Concept of Corafix GD Technology

To-day the market drivers focus on reduced lead times to support speed to the market, higher productivity and elimination of non conformance for cost effectiveness.

The reactive dyes technology is flexible for application by exhaust, padding.

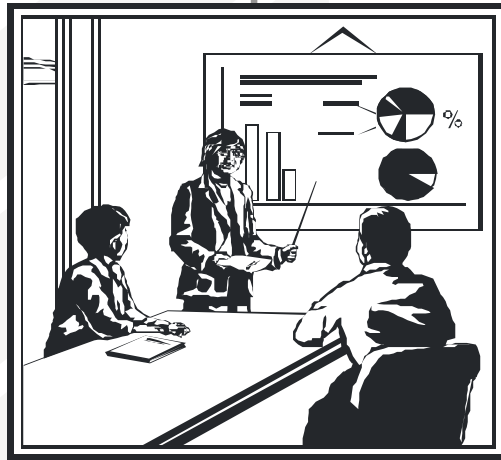
The new Corafix GD dyes designed for deep saturated shades, having outstanding build-up with near perfect compatibility in ternary combinations leading to the development of shorter dyeing processes.

It gives

- a. very good lab to bulk & bulk to bulk repeatability for all dyeing processes
- b. Minimal photochromism
- c. Avoid colour inconsistency between different light sources – the important criteria for brands.

Marketing concept of Corafix GD

TO-DAY THE MARKET DRIVERS FOCUS

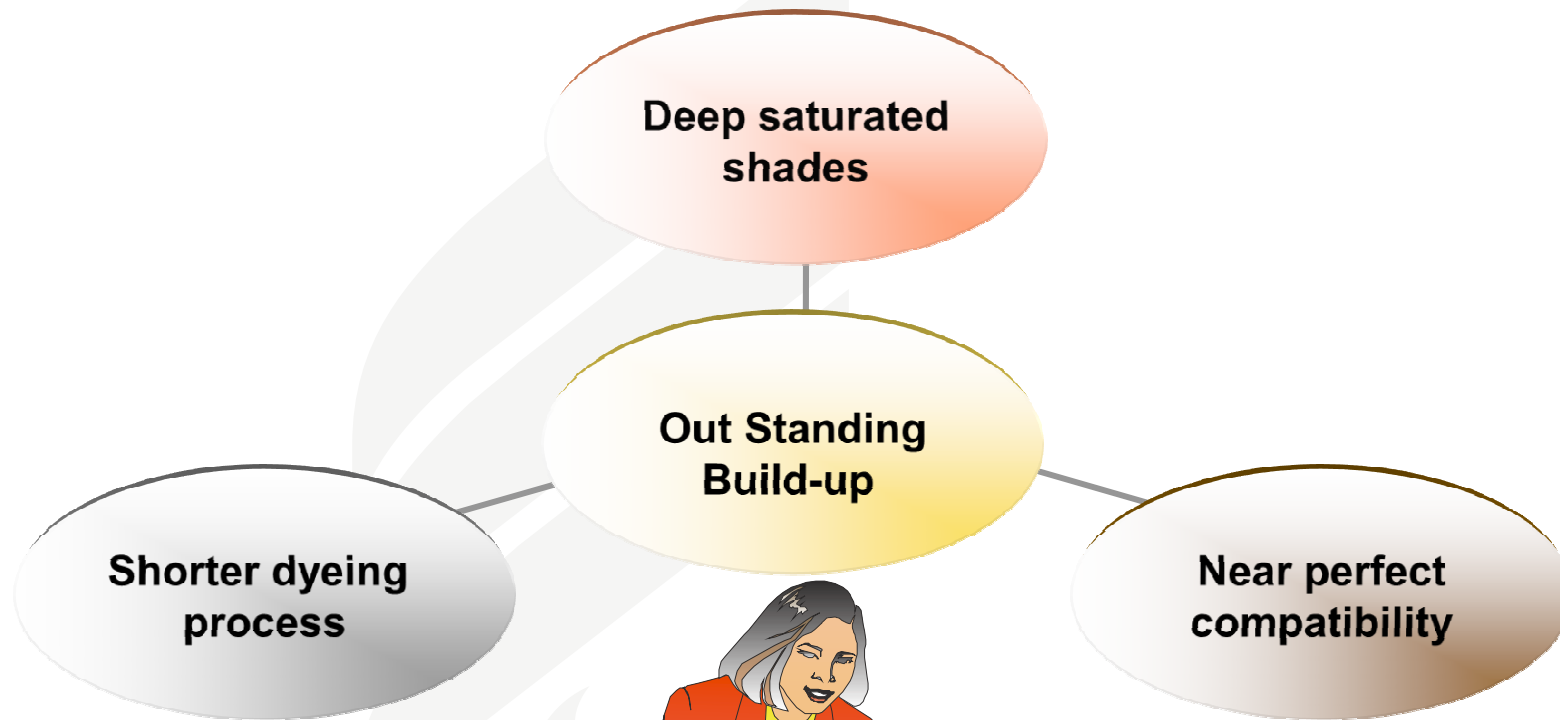


Reduced lead times to support speed

Higher productivity

Cost effectiveness

DESIGN OF CORAFIX GD DYES



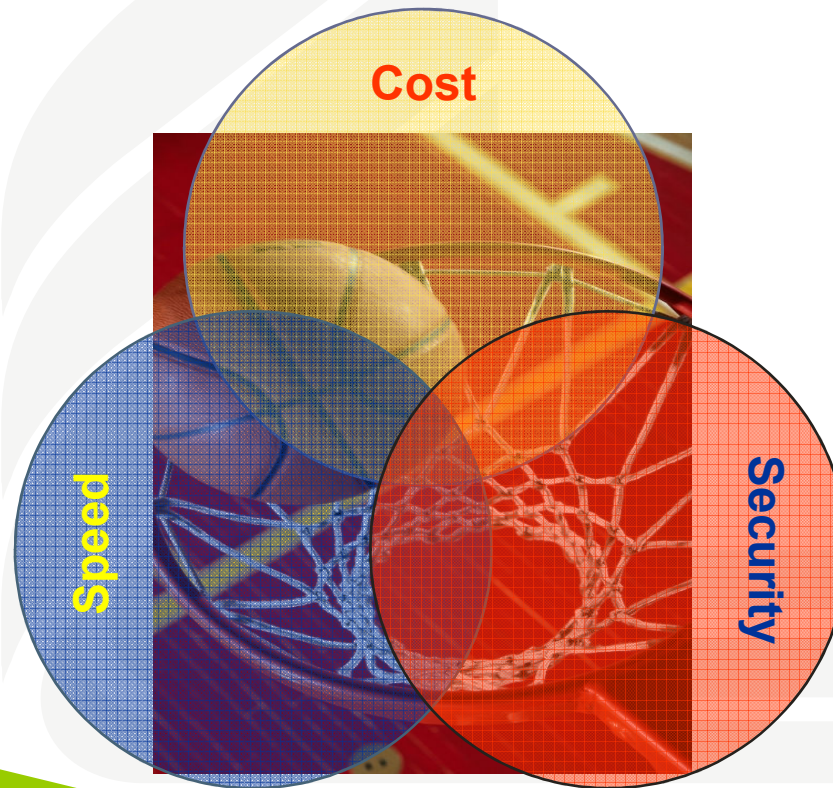
MAIN MARKET DRIVERS

Maintaining the regular contact with the leading global retailers and brands, machinery manufacturers and customers, Colourtex reviews the research targets and priorities for research effort

SLOGAN

MAIN MARKET DRIVERS

- The main market drivers identified are cost , speed , and security.



THE MAIN DRIVERS ARE IDENTIFIED BY

COST

Reduced Cost

Less Dyestuff

Less Chemical

Less Energy

Less Water

Main market drivers

The main cost element in a deep shade is associated with the ability of the reactive dye to build up to very deep shades. In addition the actual strength of the dye governs the percentage applied to achieve a given depth of shade, which in turn determines the quantity of the electrolyte used - important for cost, handling & ecological constraints



Trichromy Comparison						
Cost/Kg		Paprika		Cost/Kg	Advantage	
Reactive Yellow 145	2.00%	` 13.24/=		Corafix Yellow GD-3R	0.155%	` 7.38/= 40%
Reactive Orange 122	1.00%			Corafix Red GD-B	0.73%	
Reactive Red 195	3.00%			Corafix Scarlet GD-R	2.00%	
Cost/Kg		Regal		Cost/Kg	Advantage	
Reactive Yellow 145	1.50%	` 12.71/=		Corafix Yellow GD-3R	0.80%	` 8.78/= 21%
Reactive Red 195	2.50%			Corafix Red GD-B	1.40%	
Reactive Black 5	3.00%			Corafix Navy GD-B	2.00%	
Cost/Kg		Bottle Green		Cost/Kg	Advantage	
Reactive Yellow 145	2.00%	` 13.58/=		Corafix Yellow GD-3R	1.95%	` 9.31/= 15%
Reactive Orange 122	1.00%			Corafix Red GD-B	0.37%	
Reactive Black 5	4.00%			Corafix Navy GD-B	2.70%	

MAIN MARKET DRIVERS

Cost :

The main cost element in a deep shade is associated with the ability of the reactive dye to build up to very deep shades. In addition the actual strength of the dye governs the percentage applied to achieve a given depth of shade , which in turn determines the quantity of the electrolyte used - important for cost , handling & ecological constraints.

Trichromy Comparison

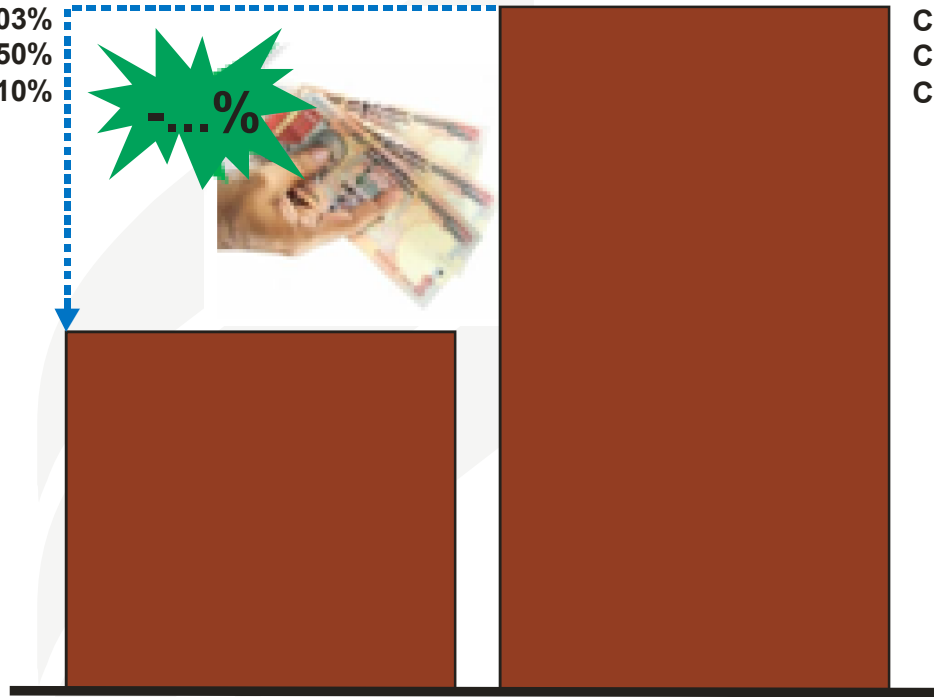
Cost/Kg		Regal	Cost/Kg Advantage		
Corafix Yellow GD-3R	0.80%		C. I. R. Orange 16	3.00%	13.69/= 24.0%
Corafix Red GD-B	1.40%		C. I. R. Red 198	0.40%	
Corafix Navy GD-B	2.00%		C. I. R. Black 5	2.50%	
` 8.78/=					
Cost/Kg		Bottle Green	Cost/Kg Advantage		
Corafix Yellow GD-3R	1.85%		C. I. R. Orange 17	5.00%	19.9/= 29.5%
Corafix Red GD-B	0.37%		C. I. R. Orange 16	1.00%	
Corafix Navy GD-B	2.70%		C. I. R. Black 5	2.80%	
` 9.12/=					

CORAFIX GD FOR REACTIVE DYEING OF CELLULOSE FIBRES

Red Brown shade

Corafix Yellow GD-3R
Corafix Red GD-B
Corafix Navy GD-B

1.03%
1.50%
1.10%



C.I. Reactive Brown 18 5.50%
C.I. Reactive Red 198 0.10%
C.I. Reactive Black 5 3.60%

Corafix GD

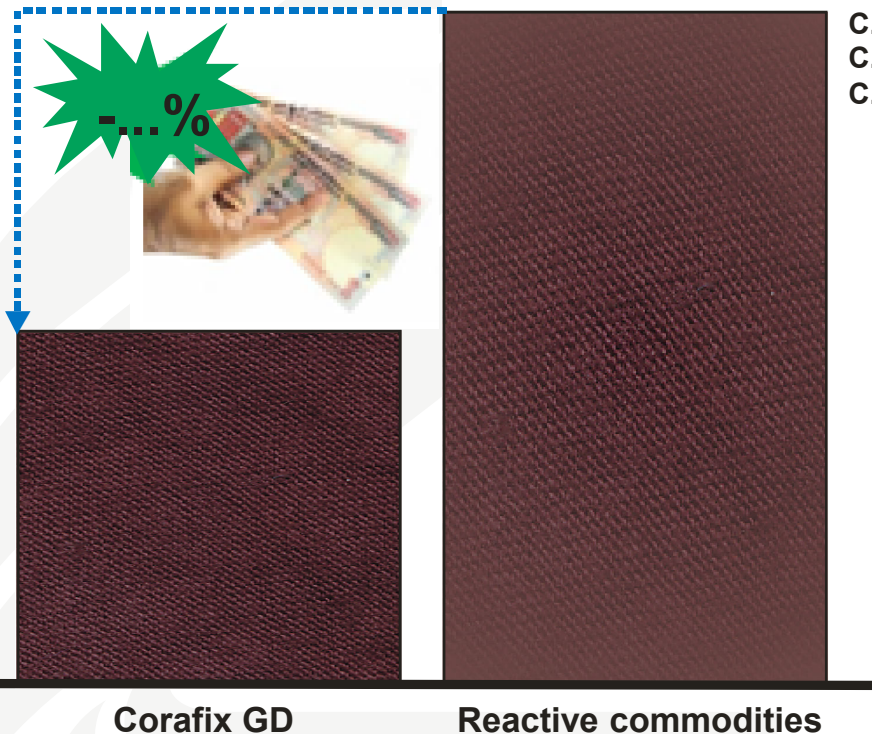
Reactive commodities

Significant less dye is needed to achieve the required shade with Corafix GD dyes

CORAFIX GD FOR REACTIVE DYEING OF CELLULOSE FIBRES

Dark Brown shade

Corafix Yellow GD-3R 1.00%
Corafix Red GD-B 1.50%
Corafix Navy GD-B 1.10%



C.I. Reactive Yellow 145 2.20%
C.I. Reactive Red 195 2.60%
C.I. Reactive Black 5 1.60%

% Dye required for Dark Brown shade exhaust application

Significant less dye is needed to achieve the required shade with Corafix GD dyes

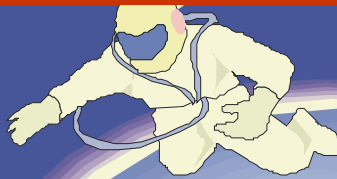
THE MAIN DRIVERS ARE IDENTIFIED BY

Speed

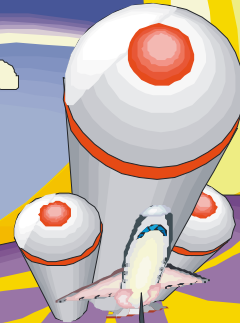


Higher Productivity

Shorter time cycle



First Time Performance



Robustness

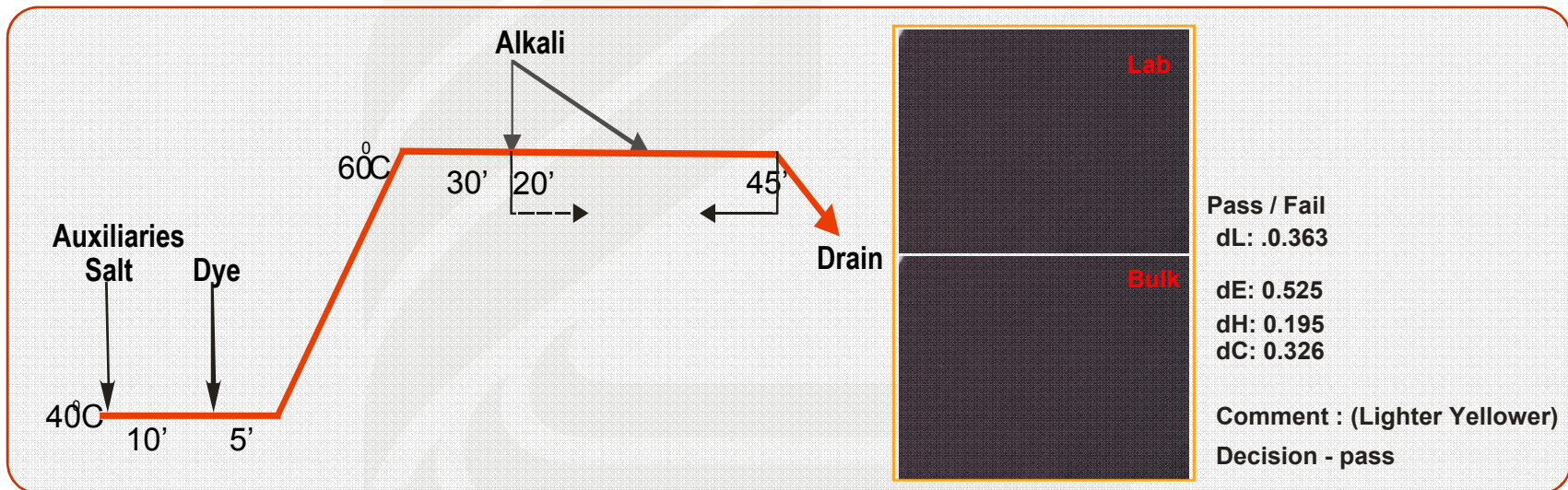
“Excellent lab to bulk reproducibility”

Speed :

The meaning of the word speed in dyeing should include not only time of the dyeing process, but most important, the ability of the dye formulation to deliver excellent lab to bulk, and inter bulk reproducibility.

Recipe:

Corafix Yellow GD-3R	1.00%
Corafix Red GD-B	1.00%
Corafix Navy GD-B	2.00%
Glauber Salt	70.0 g/l
Soda Ash	20.0 g/l
Substrate	100% CO
mercerized	
Liquor ratio	10:1 (L)
Temperature	60°C



REQUIREMENTS IN PAD APPLICATIONS

The innovative Corafix GD dyes are suitable for any pad application. Today dye houses have to face even more fierce competition compared to the past. In addition to the cost reduction the most important parameter for the economics of the plants is reproducibility combined with highest possible productivity. The excellent robustness against possible dye house variables is shown.

Na-silicate(70°TW) -70ml/lit. NaOH (66 °TW) 20ml/lit Dye: alkali – 4:1 Fixation time = 16hrs. Expression =70%

Maroon



**Pass / fail Da =-0.26 Db =0.33 DC =0.29 dl= 0.4 Remark =
Pass**

Corafix Orange GD-3R
Corafix Rubine GD-B
Corafix Navy GD-B

10 gpl
28 gpl
2 gpl

Reactive Orange 122
Reactive Red 195
Reactive Blue 222

54gpl
72gpl
5 gpl

Bottle Green



Pass / fail Da =-0.26 Db =0.33 DC =0.29 dl= 0.4 Pass

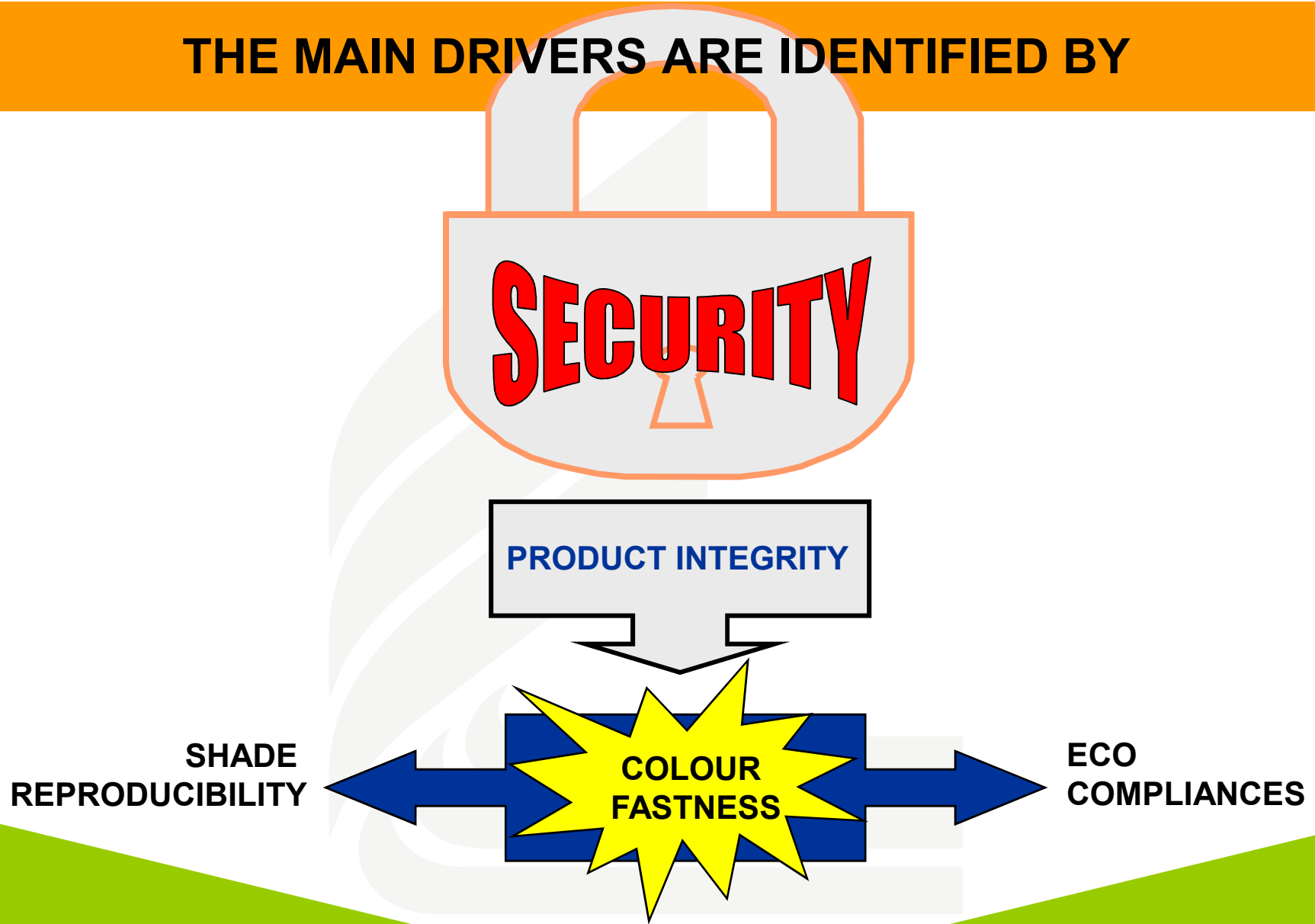
Corafix Yellow GD-R
Corafix Red GD-B
Corafix Navy GD-B

10.95 gpl
3.7 gpl
27 gpl

Reactive Yellow 145
Reactive Orange 122
Reactive Black 5

20 gpl
10 gpl
40 gpl

THE MAIN DRIVERS ARE IDENTIFIED BY

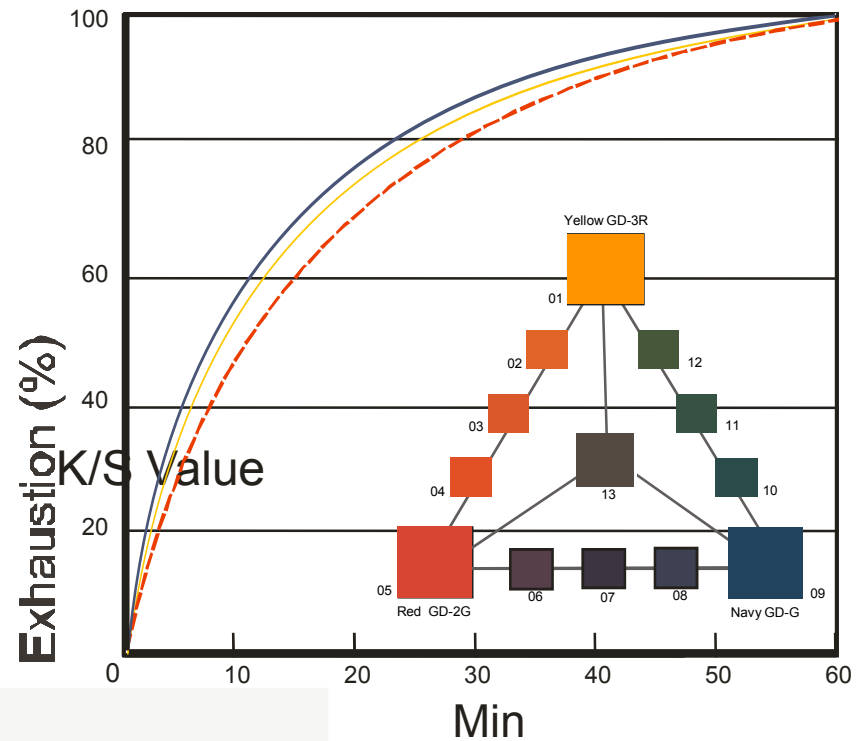


MAIN MARKET DRIVERS

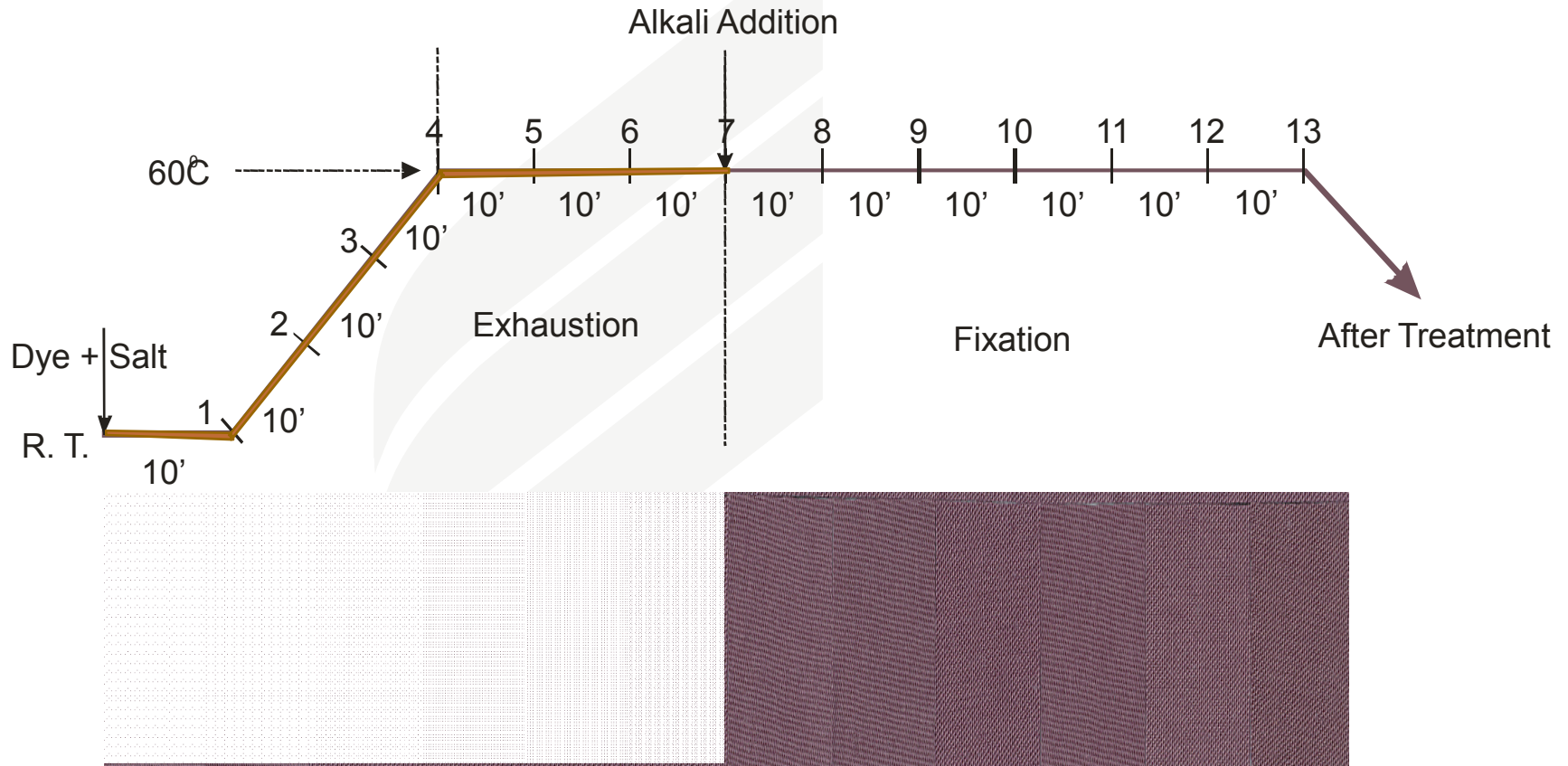
The GD dyes have near perfect compatibility which is illustrated in the build-up evaluation.

The near identical substantivity values of each of the Corafix GD dyes in the electrolyte migration phase of the dyeing process means that it is possible to reduce the time to reach equilibrium before the alkali addition stage. This is more important for low liquor ratio machine.

Compatibility (at 60°C)



ON-TONE BUILD-UP



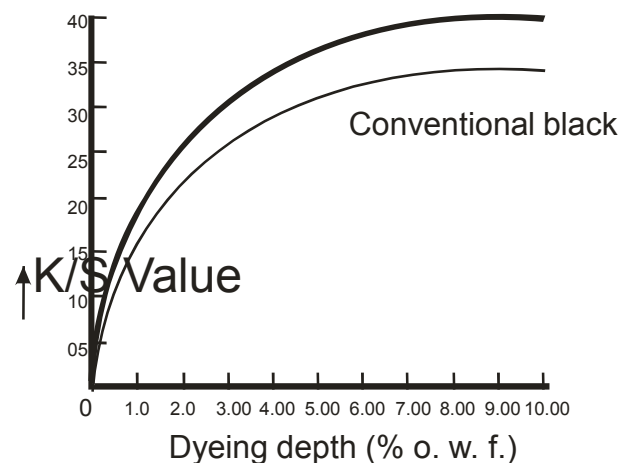
Corafix Black GD-NN



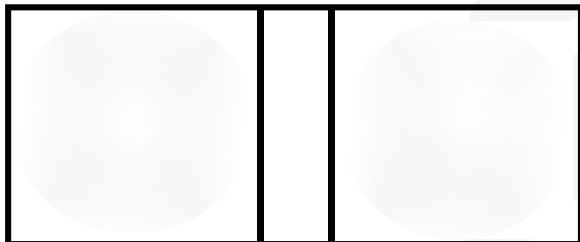
Shade- 6.00%

Build up property

- Corafix Black GD-NN is very strong dye
- It enables dyers to dye much deeper blacks with good wet rub fastness



Fastness to Rubbing : (Stain on cotton)



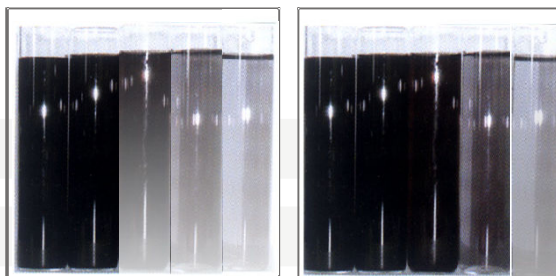
Wet

Dry

Wash-off Property

Benefits

- Reduces washing cycles which is important where the supply of clean water is limited
- Reduces effluent treatment costs
- Reduces the risk of poor wet rub fastness



Black GD-NN

Conventional black

Test Method

1. Dyeing residue
2. 80°C 10min. hot water
3. 95°C 10min. soaping (2g/l)
4. 80°C 10min. hot water
5. 30°C 10min. cold water

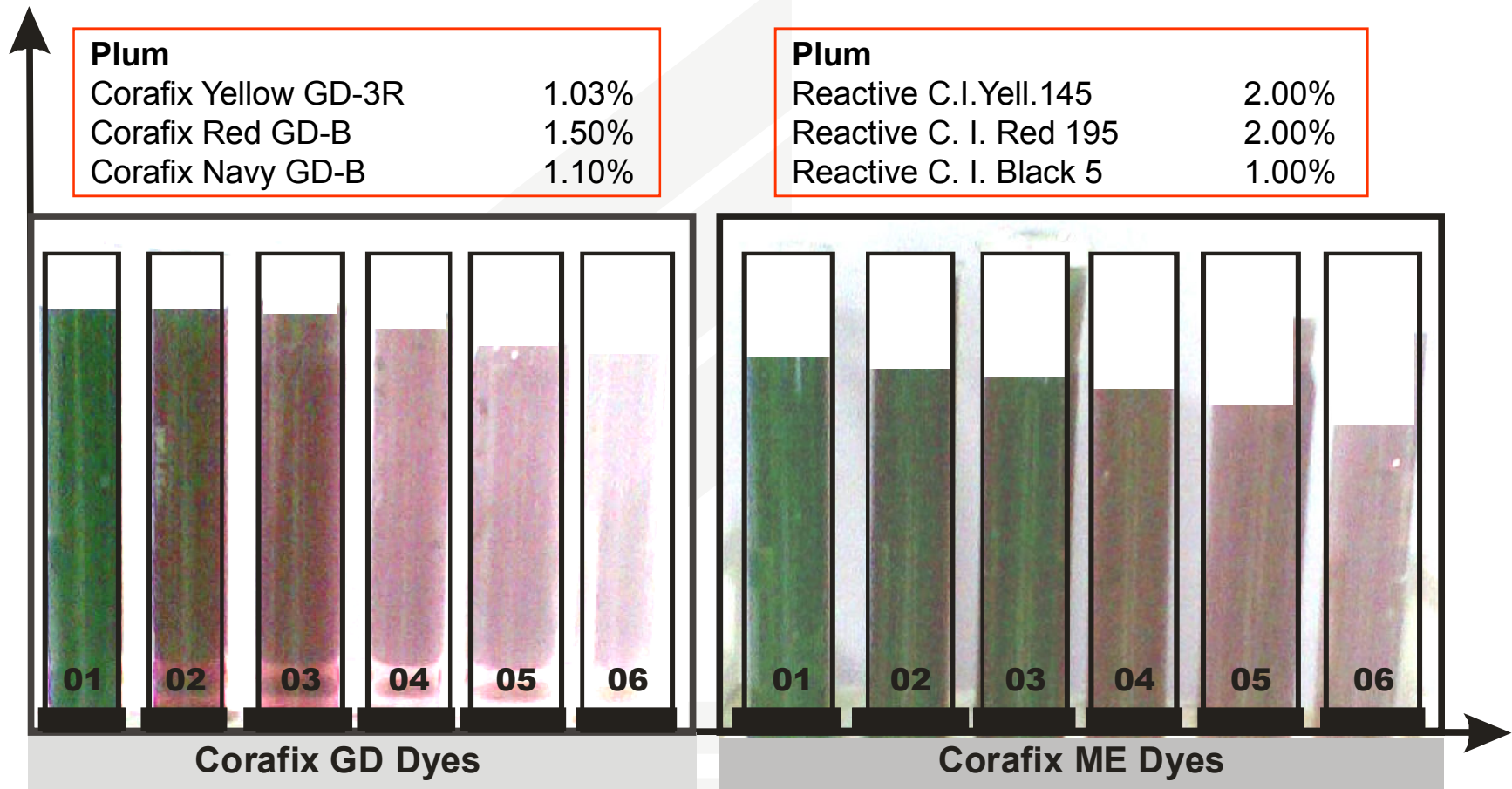
MAIN MARKET DRIVERS

Speed of wash-off of reactive dyes is specially significant in deep red, burgundy, black shades. The innovative chemistry of Corafix GD delivers high fixation.

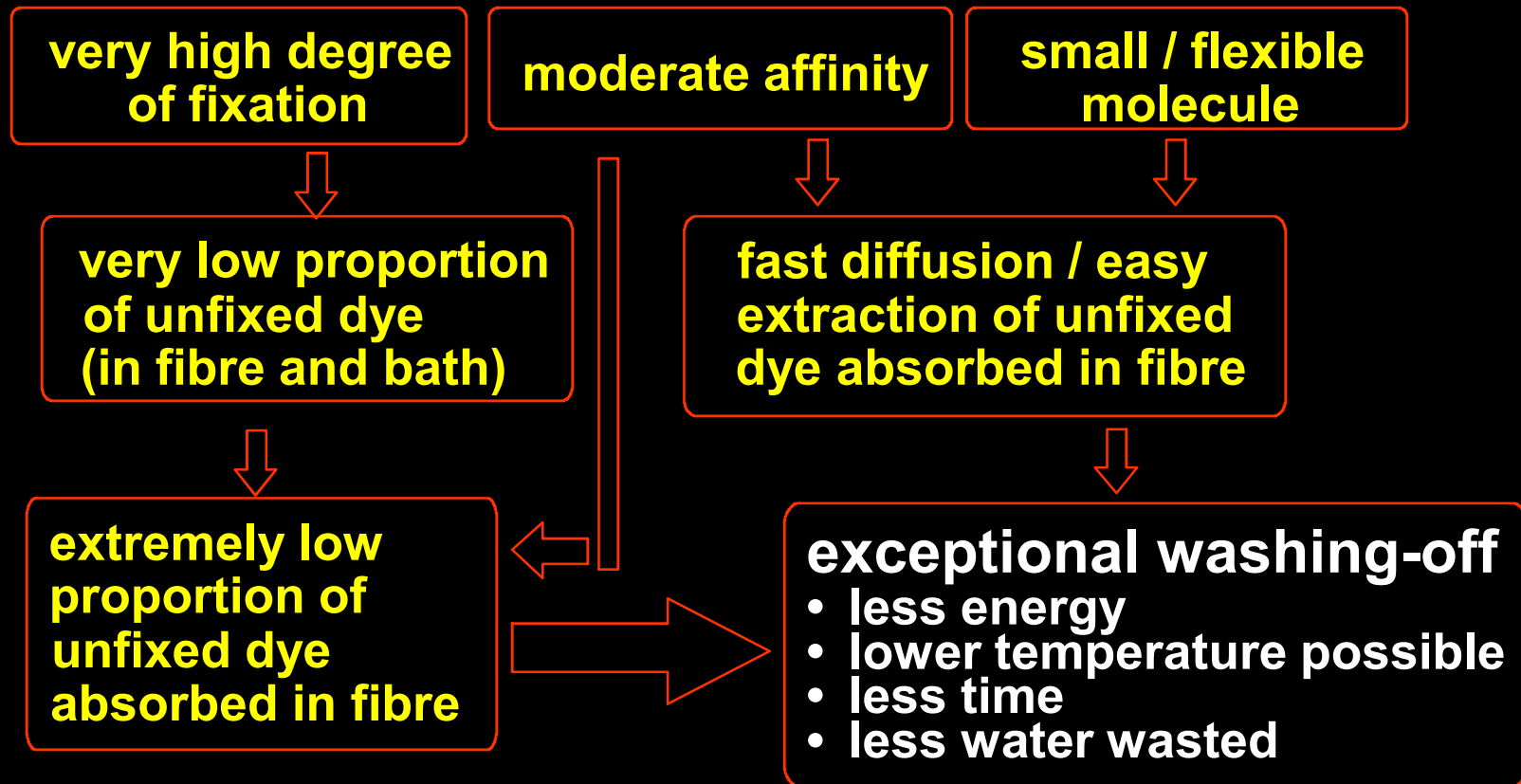
It is necessary to give two soaping processes in Deep red & burgundy shades to achieve the required wet-fastness.

The drive to reduce lead times in the retailer and brand supply chain derives from the need to deliver fast changing palettes for seasonal collections.

Excellent wash off properties increase productivity



WASHING-OFF PROPERTIES OF CORAFIX GD DYES





G. Yellow GD-3R

Security of process involves standardization limits of the dyes support controlled coloration as well as eco-compliance & meeting modern fastness requirements.

Newer detergent developments aimed at reduction of temperature in the domestic wash cycle have led to the inclusion of peroxy activators such as TAED. The bleaching species generated can attack dye chromophores causing shade loss after repeated wash cycles.

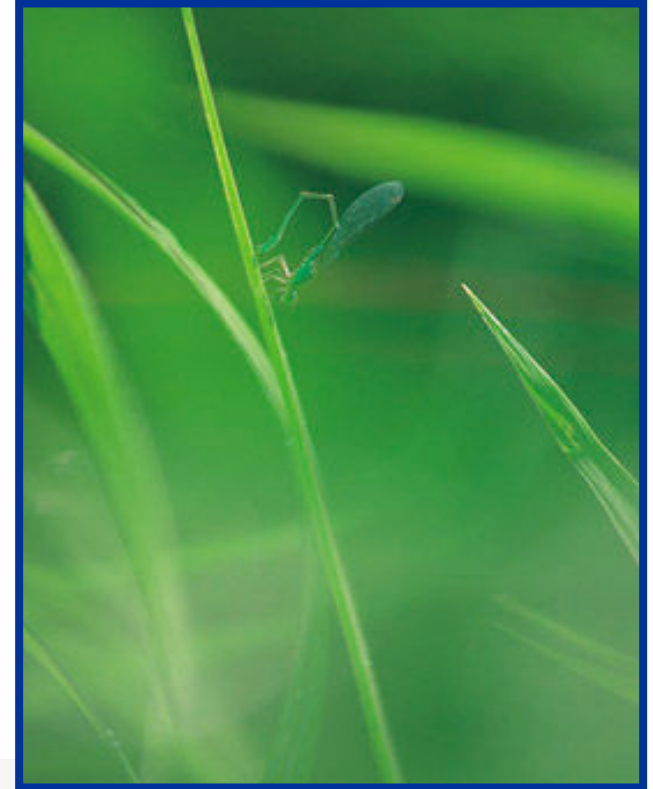
Red GD-B

Navy GD-B

ECO- ASPECT

- Increasing environmental pressure and enforcement of pollution control legislation in Europe , India and more recently in Southern China has resulted in factory closures.

This particular presentation illustrates the benefits from the higher strength and build –up newly developed Corafix GD dye technology particularly designed for the problematic deep shades. The innovation represents the best available technology controlled coloration for textile dyeing of deep shades by reducing the impact on the effluent load whilst supporting productivity requirement for short lead times demanded from the textile supply chain.



The main effluent control parameters of textile dye house waste water include volume, total dissolved solids, chemical oxygen demand, biological oxygen demand, color etc. Each is quantifiable and normally limits are established which may not be exceeded in discharge to either municipal waste water treatment plants or to surface water. The unique properties of the Corafix GD reactive dyes leads to significantly reduced impact in the effluent discharge and in the total environmental load calculation.

WOH !!WHAT A BRILLIANT BLACK WITH JET BLACK GD-R



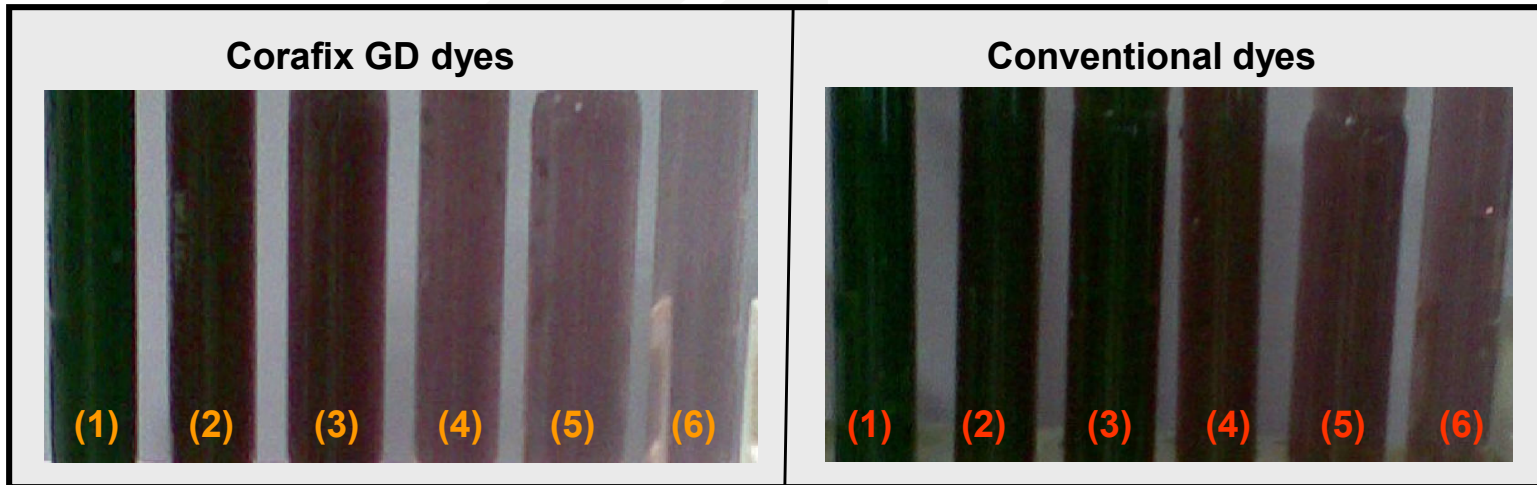
Excellent wash off properties increase productivity

Plum

Corafix Yellow GD-3R	1.03%
Corafix Red GD-B	1.50%
Corafix Navy GD-B	1.10%

Plum

Reactive C.I.Yell.145	2.00%
Reactive C. I. Red 195	2.00%
Reactive C. I. Black 5	1.00%

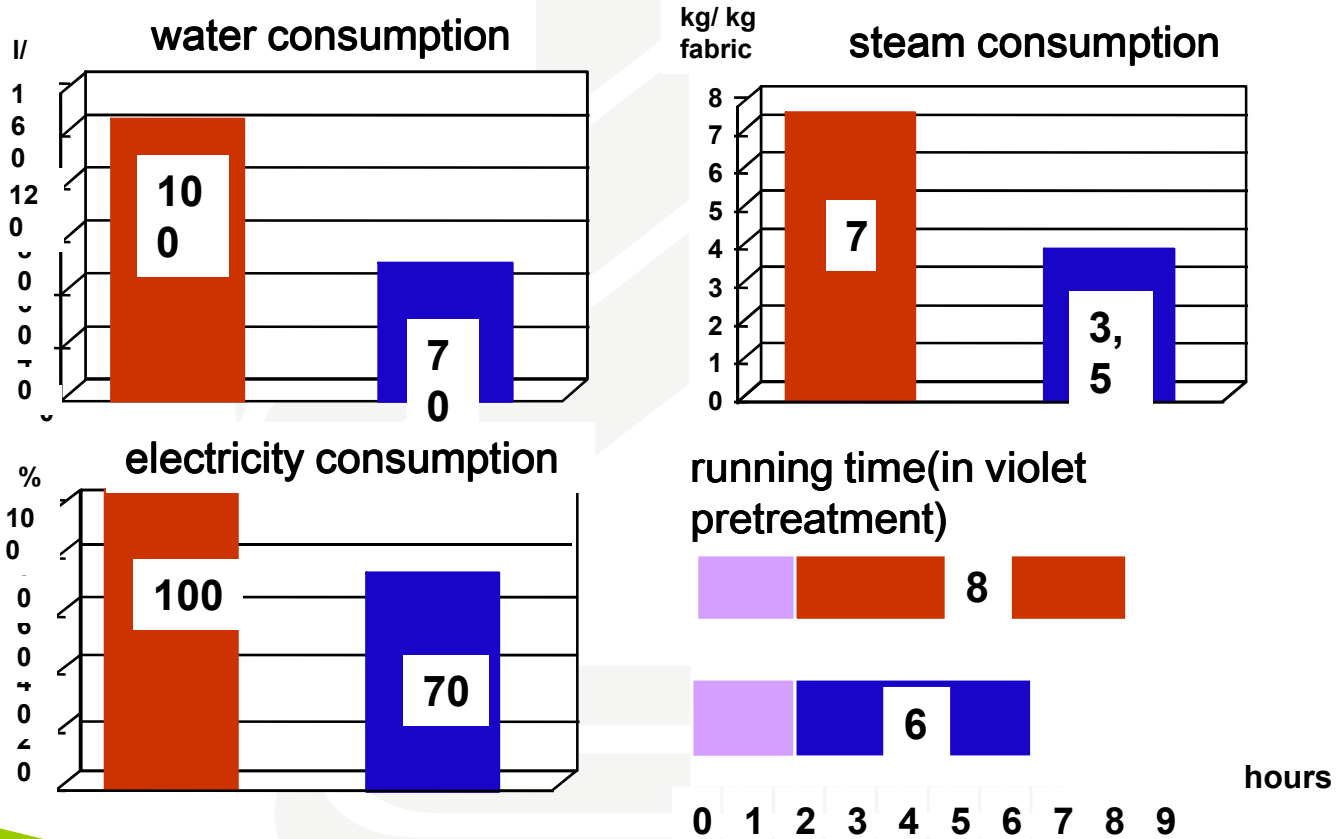


- 1) Spent Liquor
- 2) Cold wash
- 3) Warm wash/neutralisation
- 4) Soaping
- 5) Hot wash
- 6) Cold wash

CORAFIX GD COMPARISON OF

Corafix GD dyes and conventional dyes on Jigger

(deep shade on CO n. merc., incl. pretreatment and washing off)





 **colourtex**[®]
The Dyestuff Company