

[®]**SUNCOLOURS**

Suncolours Reactive Dyestuffs

for dyeing cellulosic fibres

Suncion P / Sunfix HS

Suncion H-E / H-EL

Sunfron SN / C

Sunfix SPR / SPD conc. / EX

Sunfix SS

Sunfix MF-D / MF-CN

Sunfix FE-A

Sunfix

Sunzol GRB

Sunzol

Sunrect

Preface

This Shade Card (Ver. 8.1) contains detailed information based on our present state of knowledge on the dyeing of cellulosic fibers with Suncolours reactive dyes. Please note that some fastness grades are revised from previous version because Standard Depth (1/1 SD) is changed to reflect actual dyeing depth in mills, considering characteristic of each dyestuff. In order to specify, 1/1 SD is indicated as dyeing depths (% o.w.f., % o.w.p. or g/l) in each color illustration. We believe, this information will give more clear and actual description for color fastness levels and physical properties.

The text section contains extensive information about the application of the dyestuffs and chemicals on cellulosic fibers. In the illustration section, a short description and the most important fastness properties of the dyestuffs are given. Should the information in this card be insufficient to solve the specific problems in your mill, our Technical Customer Service will be pleased to assist you.

OHYOUNG

OHYOUNG Inc. was founded in 1981 as synthetic dyes specialist for the textile industry. Over the past three decades, our exclusive technological innovations in the field of reactive dyes for textiles make us a leading provider of products and services for the global textile industry. OHYOUNG today is offering a complete range of colorants, auxiliaries and services as a solution provider to over 65 countries. We constantly strive to further improve our product ranges and to produce the highest quality products demanded by customers.



Shihwa Factory & Central Research Institute in KOREA



Contents

	Page
Test Methods	4
General Properties	4
Dyeing Process	
▪ Exhaustion dyeing	5
▪ Printing, Cold pad-batch dyeing	6
▪ Continuous dyeing	7
Categories of Suncolours Reactive Dyes	8-9
Table of Fastness and General Properties	
▪ Suncion H-E	10
▪ Suncion H-EL	10
▪ Suncion P	11
▪ Sunfix HS	12
▪ Sunfron SN	12
▪ Sunfix SPR	13
▪ Sunfix SPD conc.	13
▪ Sunfix EX	13
▪ Sunfix Special	13
▪ Sunfix SS	14
▪ Sunfix MF-D	14
▪ Sunfix	15
▪ Sunfron C	16
▪ Sunfix MF-CN	16
▪ Sunfix FE-A	17
▪ Sunzol GRB	17
▪ Sunrect (Direct dye)	17
▪ Sunzol	18
▪ Sunzol Black	19

Fastness properties

The fastness properties indicated in this shade card were determined on 1/1 SD(Standard Depth) dyeing bleached cotton. The fastness tests were based on the recommendations which made by the International Standard Organization(ISO), the American Association of Textile Chemists and Colorists(AATCC) or Deutsche Industrie Normen(DIN). For all fastness properties, grade 5 is very good and grade 1 is poor.

Test Fabric (1) : Bleached knit(CM 40's Interlock)
Suncion H-E / H-EL / Sunfron SN / Sunfix SPR / SPD conc. / EX / SS / MF-D / FE-A / Sunfix / Sunzol GRB / Sunzol / Sunzol Black / Sunrect

Test Fabric (2) : Bleached woven(CM 30's x CM 30's, 2/1 twill, 130x68)
Suncion P / Sunfix HS / Sunfron C / Sunfix MF-CN

Fastness Test Methods

Light

AATCC 16, option 3 (20AFU)
Shade change (Grey scale 1-5 grade)
Upper - 1/1 SD, Lower - 1/6 SD (Bk 1/2 SD)
* Sunzol Black B 150% Lower - 1/6 SD

Washing

ISO 105-C06, C25
Upper - Shade change, Lower - Staining on cotton
4.0g/l ECE reference detergent, 1.0g/l Sodium perborate
30min. at 60°C

Oxidative Bleach

M&S C10A
Shade change
10.0g/l ECE Detergent, 1.8g/l TAED, 12.0g/l Sodium perborate
Liquor ratio 1:100, Treat for 30min. at 60°C

Chlorinated water

ISO 105-E03
Shade change
20.0mg/l Active chlorine at pH 7.5, Liquor ratio 1:100
Treat for 1hr at 27°C

Perspiration

ISO 105-E04
Upper - Shade change
Lower - Staining on cotton

Rubbing

ISO 105-X12
Staining on cotton
Upper - Dry, Lower - Wet

Perspiration-light

ISO 105-E04 / AATCC 16, option 3 (20AFU)
Shade change
Upper - Acid perspiration
Lower - Alkali perspiration

Bleaching

DIN 54034
Shade change
0.5g/l Active chlorine,
pH 11.0 by adding 10.0g/l Sodium carbonate, Liquor ratio 1:50
ISO 105-N02
Shade change
5.0ml/l H₂O₂(30%), 5.0ml/l Sodium silicate,
0.1g/l Magnesium chloride, pH 10.5, 1hr at 90°C

General Properties

Solubility at 25°C

Upper - Without addition of auxiliaries
Lower - With an addition of 50.0g/l Glauber's salt anhydrous
Suncion P - Without addition of auxiliaries

Substantivity & Reactivity

Upper - Substantivity, Lower - Reactivity
L - Low, M - Medium, H - High

Stripping

Caustic Soda(36°Bé) :15.0ml/l, Hydrosulphite : 5.0g/l
Treat for 30min. at 95°C
* Assessment 4-5 : Almost fully stripped, 3-4 : Remarkably faded
1-2 : Not suitable

Partial stripping

Soda ash 10.0g/l, Treat for 30min. at 90°C
* Assessment 5 : 81% or more, 4 : 61-80%, 3 : 41-60%
2 : 21-40%, 1 : less than 20%

Dischargeability

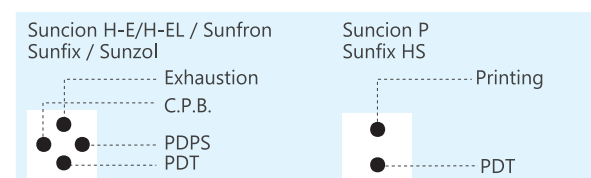
Upper - Rongalite C method, Lower - Decrolin method
Dischargeability varies with the depth of ground dyeing and recipe of white discharge. The discharge test was made on cotton fabrics dyed at the standard depth by the following recipes.

		Rongalite C	Decrolin
Thickener	Algin 5.0%	80	-
	Pigment	-	90
Rongalite C		15	-
Soda ash		5	-
Decrolin		-	10
Total		100	100

* Assessment
W : White dischargeable
A : Still sufficiently dischargeable
B : In the case of lower demands still sufficiently dischargeable
C : Not dischargeable

Dyeing application

● : Suitable, ● : Limited on pale and medium shades,
- : Not recommended



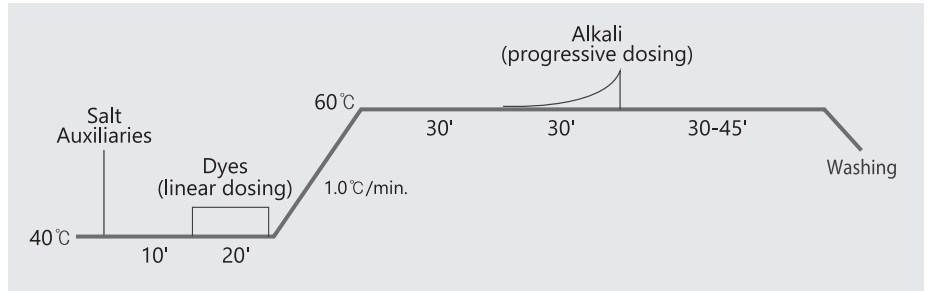
Exhaustion dyeing

A. Standard method

Temperature rise

Dyes : Sunfix, Sunfron SN, Sunzol

Fabric : Normal fabric

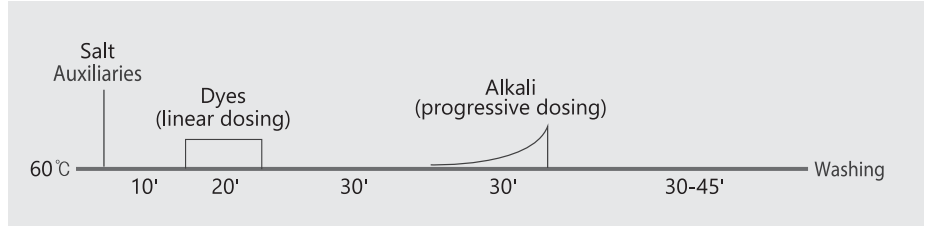


B. Standard method

Isothermal at 60°C

Dyes : Sunfix, Sunfron SN, Sunzol

Fabric : Normal fabric

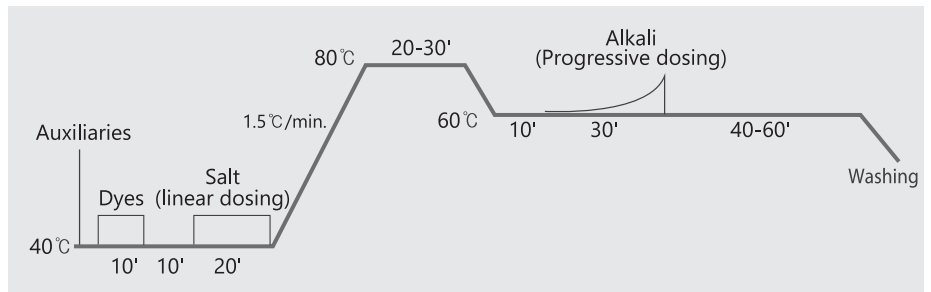


C. Specific method

Migration

Dyes : Sunfix, Sunzol

Fabric : Mercerised cotton, viscose rayon, lyocell, Tightly wound packages, high twist yarns

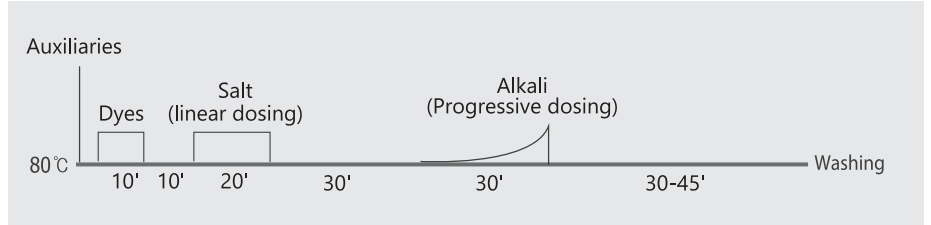


D. Specific method

Isothermal at 80°C

Dyes : Suncion H-E, Suncion H-EL

Fabric : Mercerised cotton, viscose rayon, lyocell, Tightly wound packages, high twist yarns



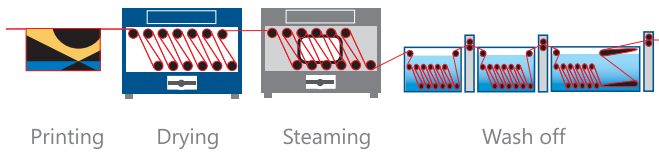
Alkali & Salt Recommendation

Dyeing depth (% o.w.f.)	Suncion H-E, H-EL						Sunfix, Sunfron						Sunsol					
	Salt (g/l)		Alkali (g/l)				Salt (g/l)		Alkali (g/l)				Salt (g/l)		Alkali (g/l)			
	unmerc.	merc.	Soda ash	Soda ash + NaOH	Soda ash	merc.	unmerc.	merc.	unmerc.	unmerc.	merc.	merc.	unmerc.	merc.	Soda ash	Soda ash + NaOH	Soda ash	merc.
up to 0.1	10	5	10	5	0.7	8	8	5	5	5	0.2	5	10	7	7	5	-	5
0.3	20	10	10	5	0.7	8	17	10	8	5	0.5	6	20	10	10	5	1.0	8
0.5	30	20	10	5	0.7	8	25	15	10	5	0.5	8	30	15	12	5	1.3	10
1.0	45	30	15	5	1.0	12	30	20	15	5	1.0	12	35	20	15	5	1.5	12
1.5	53	35	15	5	1.0	12	35	25	15	5	1.2	12	40	25	15	5	1.8	12
2.0	60	40	15	5	1.0	12	40	30	15	5	1.5	12	45	30	20	5	2.0	15
2.5	65	45	15	5	1.5	12	45	35	15	5	1.8	12	50	35	20	5	2.3	15
3.0	70	50	20	5	1.5	15	50	40	20	5	2.0	15	55	40	20	5	2.5	15
3.5	75	55	20	5	1.5	15	55	45	20	5	2.0	15	60	45	20	5	2.6	15
4.0	80	60	20	5	1.5	15	60	50	20	5	2.5	15	65	50	20	5	2.7	15
4.5	85	65	20	5	1.5	15	65	55	20	5	2.5	15	70	55	20	5	2.8	15
5.0	90	70	20	5	1.5	15	70	60	20	5	2.5	15	75	60	20	5	2.9	15
5.5	95	70	20	5	1.5	15	75	60	20	5	2.5	15	80	60	20	5	3.1	15
above 6.0	100	70	20	5	1.5	15	80	60	20	5	2.5	15	85	60	20	5	3.3	15

* Mixed alkali : NaOH 36°Bé

* Liquor ratio : 1:10

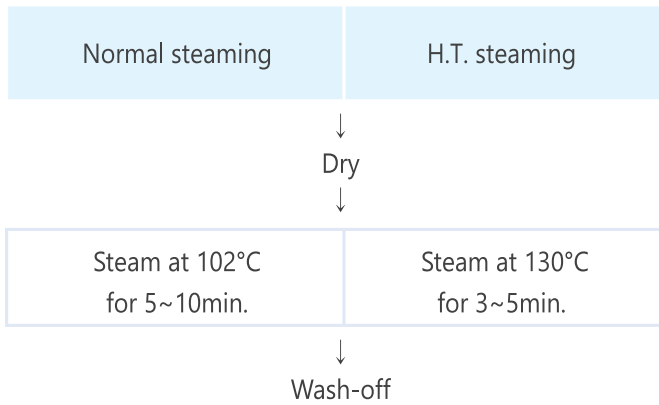
Printing



Printing paste recipe

Chemical pad (g/l)	Normal steaming	H.T. steaming
Suncion P	X	X
Urea	50-100	100-200
Water	Y	Y
Stock paste (4~12%)	400-600	400-600
Reduction inhibitor	10-20	10-20
Alkali	10-30	10-20
Total	1000	

Processing after printing



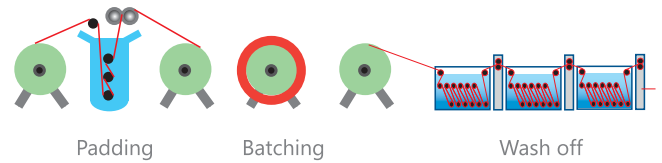
Notes

- Wash off process
 1. Rinse
 2. Warm wash
 3. Soap over 95°C in nonionic or anionic detergent solution
 4. Warm wash
 5. Rinse
 6. Dry

Pad-dyeing

Cold pad-batch dyeing

Sodium silicate / Caustic soda



Dyeing depth Pale, Medium, Dark
 Padding Temp. 20-30°C (high pad liquor stability at 20-25°C)
 Batching time 8-16 hours
 Liquor pick up Cotton 60-70%, Viscose rayon 70-80%
 Metering pump Required

Pad liquor

Dyes	X g/l
Penetration agent (with wetting agent)	1-2 g/l
Sodium silicate 37-40°Bé	70 ml/l
Caustic soda 36°Bé	10-30 ml/l

Required amount of alkali

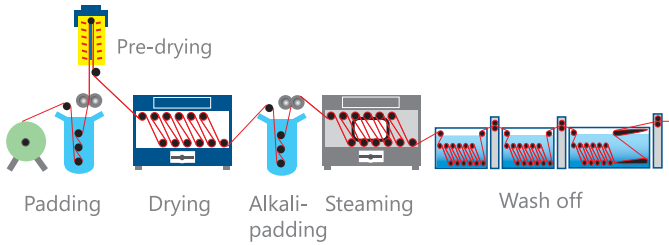
Dyestuff	g/l	<10	20	30	40	50	60	>70
Sodium silicate (37-40°Bé)	ml/l	70						
Caustic soda (36°Bé)	ml/l	10	15	20	25	28	30	30

Notes

- This method is the standard procedure for liquor temperature of 20-30°C.
- Short fixation time
- Metering pump required
- Good bath stability
- Atmospheric carbon dioxide has almost no effect during storage.

Continuous dyeing

Pad-Dry-Pad-Steam (PDPS)



Pad liquor	Dyes	X g/l
	Wetting agent	1-2 g/l
	Reduction protectant	1-3 g/l
	Migration inhibitor	5-10 g/l
Pad liquor temp.	20-30°C	
Liquor pick up	60-80%	
	Cotton : 60-70%, Viscose rayon 70-80%	
I.R. pre-drying	To a residual moisture content of 30-35%	
Drying	Dry at 110-120°C	
Pick up	70-80%	
Steaming	60-90sec. in saturated steam (101-105°C)	

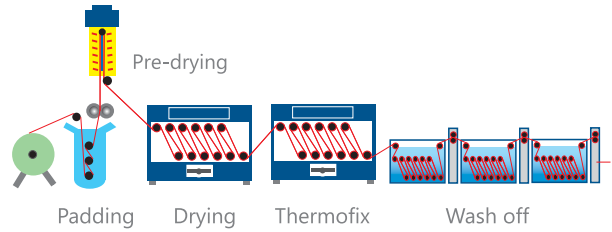
Required amount of salt and alkali

Dyeing depth	g/l	< 10	10-30	> 30
Salt	g/l	200	250	250
Soda ash	g/l	20	20	20
Caustic soda 36°Be'	ml/l	8	12	15

Notes

- High productivity and color yield.
- Good appearance.
- Classic procedure for continuous dyeing of woven fabrics.
- When using dyes with low reactivity such as Sunzol Turquoise Blue G and Sunzol Green 6B, the amount of caustic soda should be raised by 30%.
- If the goods are stored, after drying but before fixation, they should be wrapped in an opaque material to protect them from daylight.

• Pad-Dry-Thermofix (PDT)



Pad liquor	Dyes	X g/l
	Wetting agent	1-2 g/l
	Reduction protectant	1-3 g/l
	Migration inhibitor	5-10 g/l

Pad liquor temp.	20-25°C
Pick up	60-80%
	Cotton : 60-70%, Viscose rayon 70-80%
I.R. pre-drying	To a residual moisture content of 30-35%
Drying	Dry at 110-120°C
Thermofix	60sec. at 160°C
	(Suncion P : 60-90sec. at 180°C)

Required amount of urea and alkali

Dyeing depth	g/l	< 5	10	20	30	> 30
Soda ash	g/l	-	10	15	20	25
Sodium bicarbonate	g/l	10	-	-	-	-
Urea	g/l	20	50	75	100	130

Required amount of urea and alkali : Suncion P

Dyeing depth	g/l	< 5	10	20	30	> 30
Soda ash	g/l	10	15	20	25	30
Urea	g/l	20	50	75	100	130

Notes

- This process is a salt-free, continuous one-bath method that ensures satisfactory coverage of dead cotton.
- When dyeing regenerated cellulosic fabrics, dye diffusion is improved by intermediate storage before drying.
- Soda ash can be replaced by 20g/l sodium bicarbonate if higher bath stability is required.
- If the goods are stored, after drying but before fixation, they should be wrapped in an opaque material to protect them from daylight.

Categories of Suncolours® Reactive dyes















Dyeing application	Features / Advantages
Printing Continuous(PDT)	<p>Suncion P</p> <ul style="list-style-type: none"> • Wide color range and high color yield • High storage stability in a printing paste
Printing	<p>Sunfix HS</p> <ul style="list-style-type: none"> • High fixation yield for dark shades • Water and energy saving by easy wash-off
Hot exhaust	<p>Suncion H-E</p> <ul style="list-style-type: none"> • Wide range of colors, Excellent color fastness to mercerizing • Economical dyes for standard requirements <p>Suncion H-EL</p> <ul style="list-style-type: none"> • Very reliable application in exhaustion dyeing • Excellent levelling properties and reproducibility • For critical articles and dyeing condition, e.g. CV, merc. CO, CEL/elastomeric fibers, garment dyeing needed good dye penetration • Good oxidative wash fastness
Exhaust	<p>Sunfron SN</p> <ul style="list-style-type: none"> • Good perspiration wet light fastness and oxidative wash fastness • Recommended to light fastness above grade 4 in pale shades
Exhaust Cold pad-batch Continuous	<p>Sunfix SPR</p> <ul style="list-style-type: none"> • High reproducibility, high migration and no blocking effect with perfect compatibility for pale shades <p>Sunfix SPD conc.</p> <ul style="list-style-type: none"> • Good compatibility for medium shades • Appropriate dye selection fulfills recent major retailers fastness requirements (e.g. repeated washing) • Right first time dyeings <p>Sunfix EX</p> <ul style="list-style-type: none"> • Economical dyes on medium to deep shades • Good reproducibility • Right first time dyeings <p>Sunfix Special</p> <ul style="list-style-type: none"> • Outstanding padding bath stability and high degree of fixation in pad-dyeing. • For high fastness to oxidative bleaching and active chlorine

Features / Advantages	Dyeing application
<p>Sunfix SS</p> <ul style="list-style-type: none"> • High performance dyes to minimize the environmental impact • High light fastness and outstanding reproducibility in medium shades • Suitable for ultra deep shades with production cost savings by high color strength and easy wash off • On-tone shade for blended fabric(C/M, C/R) • Good all round wet fastness 	Exhaust
<p>Sunfix MF-D</p> <ul style="list-style-type: none"> • Very deep shades are easy attainable with cost effective recipes • Good compatibility with Sunfix SS dyes 	
<p>Sunfix FE-A</p> <ul style="list-style-type: none"> • For fashionable colors • Flexible dyes that can be combined with many types of reactive dyes • All-rounders for use in exhaust and pad-dyeing process • High fastness properties, especially washing and chlorine fastness <p>Sunfix</p> <ul style="list-style-type: none"> • Bright colors and easy shading • High fastness to washing and chlorinated water • Wide application to the various dyeing methods 	Exhaust Cold pad-batch Continuous
<p>Sunfron C</p> <ul style="list-style-type: none"> • High fastness levels with short and reliable process in pad-dyeing • High degree of fixation and outstanding washing off properties 	Cold pad-batch Continuous
<p>Sunfix MF-CN</p> <ul style="list-style-type: none"> • Suitable for medium to deep shades with high color strength and good washable property • Homogeneous fixation behavior in all pad applications • Excellent wash-off properties increase productivity 	
<p>Sunzol GRB</p> <ul style="list-style-type: none"> • Economical dyes ; high strength and build-up properties • Wide application to the various dyeing methods 	Exhaust Cold pad-batch Continuous
<p>Sunzol</p> <ul style="list-style-type: none"> • Wide bright and black shades range • Easy washing off and good wet fastness • Dyes selection for dischargeable dyeing • Wide application to the various dyeing methods 	

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								



Suncion H-E




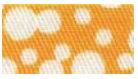


















For hot exhaust, economical dyes for standard requirements

Yellow H-E6GN		4.3	100 40	H M	4-5 3-4	3 2-3	4 4-5	4 4-5	5 4	4-5	4	1 3	5 4	W C	5 1	● -
Yellow H-E4G		6.0	40 5	H M	4-5 4	3-4 3	4-5 4-5	4-5 4-5	5 4	3-4	2	1 3	5 4	W W	3 1	● -
Yellow H-E4RN		4.4	70 40	H M	4-5 4	4 4	4-5 4-5	4-5 4-5	4-5 4	4-5	4	2-3 4-5	5 4	A A	4 1	● -
Orange H-E2G		2.6	80 10	H M	4-5 3-4	4 3-4	4 4-5	4 4-5	4-5 3-4	3-4	4-5	4 4	5 3-4	B B	4 1	● -
Orange H-ER		1.8	30 1	H M	3-4 2	3 2-3	3-4 4	3-4 4	4-5 4	3	4-5	4-5 4	5 3	B B	4 1	● -
Scarlet H-E3G		2.6	70 60	H M	4-5 3-4	4 3	4-5 4-5	4-5 4-5	4-5 3	4	4	1 3-4	5 4	B B	2 1	● -
Red H-E3B		2.2	90 80	H M	4-5 3-4	3-4 2-3	4 4	4 4	4-5 3	4-5	4-5	1 4	5 3-4	B B	2 1	● -
Red H-E7B		2.5	90 90	H M	4 3-4	4 2-3	4-5 4	4-5 4	4-5 3-4	4	4-5	3 4-5	5 3	B B	4 1	● -
Turquoise Blue H-A		1.9	70 1	H M	4 3-4	2 2-3	3-4 3-4	4-5 3	4-5 2-3	4	2	2-3 2	5 2-3	B B	3 1	● -
Blue H-EGN 125%		2.2	70 30	H M	4 3-4	2-3 3	3-4 4	3-4 4	4-5 3-4	3-4	1	1 3-4	5 4	C C	1 1	● -
Blue H-ERD 125%		3.8	150 70	H M	4-5 4	4-5 3-4	4-5 4-5	4-5 4-5	4-5 3	4	2-3	1 3-4	5 3	B B	5 1	● -
Green H-E4BD		1.9	150 130	H M	3-4 2-3	3-4 2	4-5 4	4-5 4	4-5 4	4	2	1-2 4	5 3-4	A A	5 1	● -
Navy Blue H-ER 150%		4.0	80 40	H M	3-4 3	3-4 2	4-5 4-5	4-5 4-5	4-5 3-4	4-5	3	1 4	5 3-4	B B	5 1	● -
Black H-EM		10.0	70 30	H M	4 3-4	3-4 3	4-5 3	4-5 3	4-5 3	4-5	4	2 4	4-5 2-3	B B	4 1	● -

Suncion H-EL

For hot exhaust dyeing, excellent levelling properties and reproducibility



Yellow H-EL		2.5	150 100	H M	4-5 4-5	4 4	5 4-5	4-5 4-5	5 4	4-5	3-4	1-2 4	5 4	B A	1-2 1	● -
Red H-EGL		2.6	120 100	H M	4-5 3-4	3-4 3	4-5 4	4-5 4	4-5 4	4-5	4	1-2 4	5 4	B B	1-2 1	● -
Crimson H-EL		2.2	150 100	H M	4 3-4	3-4 2	4-5 3-4	4-5 3-4	4-5 3-4	4	4-5	3 4	5 4	B B	3 1	● -
Navy Blue H-ELN		3.6	150 100	H M	4 3-4	3-4 2	4-5 3-4	4-5 3-4	5 4	4-5	3-4	1-2 3-4	5 3-4	B B	4 1	● -

Suncolours Reactive Dyes	on Cotton	Liquid (%)	% o.w.p. (1/1 SD)	Solubility	Wash-off property	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Rubbing	Dyeing application
								Acid	Alkali					
Suncion P														
<i>For printing and thermofix process, extremely brilliant shades and high color yield</i>														
Yellow P-6G <i>pwd. & liq.</i>		40%	2.7	100	A	4-5 4	3 3	4-5 4-5	4-5 4-5	5 4-5	4-5	4	5 4-5	● ●
Yellow P-5G		-	5.6	100	A	4-5 4	3-4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4	1-2	5 4-5	● -
Yellow P-4G		-	4.5	120	A	4-5 4	3 2-3	4-5 4-5	4-5 4-5	4 4-5	3-4	1-2	5 4-5	● -
G/Yellow P-2RN <i>pwd. & liq.</i>		35%	2.0	120	A	4-5 4	4 4	5 4-5	4-5 4-5	5 4-5	4-5	3	4-5 4	● ●
Yellow P-3R		-	2.3	100	B	4-5 4	4 4	5 4-5	4-5 4-5	5 4-5	4-5	3	4-5 4	● -
Orange P-2R <i>pwd. & liq.</i>		40%	2.0	100	B	3-4 2	3-4 3	5 4-5	5 4-5	4-5 4-5	4	4-5	4-5 3-4	● ●
Red P-2B		-	1.8	100	B	4 3	4 3-4	4 4-5	3-4 4-5	4 4-5	4	3-4	4-5 3-4	● -
Red P-BN liq.		-	3.7	100	B	4 3-4	3-4 3	4 4-5	3-4 4-5	3-4 4-5	3	3	4-5 3-4	● -
Red P-4B		-	1.7	120	B	3-4 3	3 3	4-5 4-5	4-5 4-5	5 4-5	4-5	4-5	4-5 3-4	● ●
Red P-6B <i>pwd. & liq.</i>		25%	1.0	100	C	3-4 3	3 3	4-5 4-5	4-5 4-5	4-5 4-5	4-5	4-5	4 3-4	● -
Violet P-3R		-	2.7	100	A	4-5 4-5	4 2-3	4 4	2-3 4	4-5 4-5	4-5	2-3	4-5 3-4	● -
Brown P-6R 150%		-	1.6	120	A	4-5 4	4 4	4-5 4-5	4 4-5	4-5 4-5	4	3	4-5 4	● ●
Brown P-4RN		-	2.0	100	B	4 3	3-4 3	4 4-5	4-5 4-5	4-5 4	4	3	4-5 4	● -
Blue P-3RC <i>pwd. & liq.</i>		40%	5.0	120	A	4-5 4-5	4-5 4-5	4-5 4-5	5 4-5	4 4-5	4	1-2	4-5 4	● ●
Turquoise Blue P-GL		-	2.8	100	B	4-5 4	2-3 4	3-4 3	4-5 3	4 3	4	1-2	4-5 3	● ●
Turquoise Blue P-A		-	4.4	100	C	4-5 4	2-3 4	3 3	4-5 2-3	4 2-3	3-4	1-2	4-5 2-3	● -
Green P-4BD		-	1.3	100	A	3 1-2	3 2-3	4-5 4-5	4-5 4-5	4 4-5	4	1-2	4-5 3-4	● -
Navy Blue P-2R		-	3.6	120	A	4 3	4 4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2-3	4-5 3	● ●
Navy Blue P-NG liq.		-	7.4	120	A	4 3	4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4	2-3	4-5 3	● -
Grey PT-GE		-	1.5	100	A	4 4	4 3-4	4-5 4-5	4-5 4-5	4 4-5	4-5	1-2	4-5 3-4	● ●
Black P-N <i>pwd. & liq.</i>		40%	6.0	100	A	4-5 4-5	4-5 4	5 4-5	4 4-5	3-4 4-5	2	2-3	4-5 2-3	● -
Black P-N conc.		-	6.0	100	A	4-5 4-5	4-5 4-5	5 4	4-5 4	4 4-5	3	3	4-5 2-3	● -

Suncolours Reactive Dyes	on Cotton	Liquid (%)	% o.w.p. (1/1 SD)	Solubility	Wash-off property	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Rubbing	Dyeing application
								Acid	Alkali					

Suncion P

For printing and thermofix process, extremely brilliant shades and high color yield

Black P-GR 150%		-	6.0	120	A	4-5 4-5	4-5 4-5	5 4-5	4-5 4-5	4-5 4-5	4-5	3-4	4-5 2-3	● -
Black P-SG <i>pwd. & liq.</i>		40%	6.0	80	A	4-5 4-5	4-5 4-5	4-5 4	4-5 4	3-4 4-5	2	3	4-5 2-3	● ●

Sunfix HS








High concentrated dyes with high fixation and build-up for deep shades printing with minimized bleeding

Yellow HS		-	2.7	200	A	4-5 3-4	3-4 4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2	4-5 3-4	● -
Orange HS		-	1.6	200	A	4-5 3	3 3-4	4-5 4-5	4-5 4-5	4 4-5	3-4	1-2	4-5 3	● -
Red HS		-	1.0	200	A	3-4 2-3	3 3-4	4-5 4-5	4 4-5	3 4-5	2	2-3	4-5 3	● -
Deep Red HS		-	1.2	200	A	4 3	3-4 3	5 4-5	5 4-5	4-5 4	4-5	4	4-5 3	● -
Navy Blue HS		-	2.1	200	A	3-4 2-3	2-3 2-3	5 4-5	4-5 4-5	4-5 4-5	4-5	3	4-5 3	● -
Black HS		-	5.0	200	A	4-5 4	4-5 4-5	5 4-5	4-5 4-5	4-5 4-5	4	3	4-5 2-3	● -

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								

Sunfron SN











For warm exhaust, Highly compatible range for a wide shade and high fastness performance

Yellow SN-2R		3.0	200 150	M H	4-5 4-5	4 4	4-5 4-5	4-5 4-5	4-5 4	4-5	4	4 4-5	5 3-4	A A	2 2	● - -
Orange SN-R		1.9	150 100	M H	4 3-4	4 2-3	4 4-5	4 4-5	4-5 4-5	4-5	4	2-3 4-5	5 3-4	B B	3 2	● - -
Red SN-3G		1.4	200 150	M H	3 2-3	3 2	4-5 4	4-5 3-4	4-5 3-4	4-5	3	3 4	5 3	B B	2 1	● - -
Red SN-R		2.2	200 130	M M	4 3-4	3-4 2	4-5 4-5	4-5 4-5	4-5 4	4-5	4-5	4-5 4-5	4-5 3-4	B B	4 4	● - -
Red SN-2BL		4.4	200 150	M H	5 4-5	4 3	4-5 4-5	4-5 4-5	4-5 4	4-5	2-3	2 3	5 3-4	W W	3 3	● - -
Blue SN-R		2.0	200 100	H H	4-5 4-5	4 3	5 4-5	5 4	4-5 3	4-5	2	3 3	5 4	A A	3 2	● - -
Navy Blue SN-GN 150%		2.0	200 150	H H	3-4 3	2-3 2	4-5 4-5	4-5 4	4-5 3-4	4-5	3-4	4-5 4-5	5 3-4	A A	3 2	● - -

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								

Sunfix SPR

Excellent reproducibility and no blocking effect with perfect combinability for pale shades

Yellow SPR		4.2	200 140	M M	4-5 4-5	4 4	5 4-5	5 4-5	4-5 4	4 4	4-5	4-5 4-5	5 3-4	A A	3 4	
Red SPR		3.4	150 100	M M	4 3-4	3-4 2	4 4-5	4 4-5	4-5 4	4 4	4 4	4-5 2-3	5 3-4	W W	3-4 3	
Red SPR-F		3.6	150 100	H M	4-5 4	4 3	4-5 4	4-5 4	4-5 3	4-5 4-5	2	3-4 3-4	5 3-4	W B	5 4	
Blue SPR		2.0	200 150	H M	4-5 4	4 3	5 3-4	5 3	4-5 2	4-5 4-5	2-3 2	3 3	4-5 4	A A	3-4 2	
Blue SPR-F		2.4	200 150	M M	4-5 4	3-4 2-3	5 4	5 3-4	4-5 3	4-5 4-5	3	3-4 3-4	4-5 4	A A	4-5 4-5	

Sunfix SPD conc.

Appropriate dye selection fulfills very high requirements and right first time dyeings

Yellow SPD conc.		3.5	200 140	M M	4-5 4-5	4 4	4-5 4-5	4-5 4	4-5 4	4 4	4-5	4-5 4-5	4-5 3-4	A A	3 4	
Red SPD conc.		2.2	200 150	M M	4 3-4	3-4 2	5 4-5	5 4-5	4-5 4	4-5 4	4-5	4-5 4-5	4-5 3-4	B B	3-4 4	
Blue SPD conc.		1.7	200 100	H H	4-5 4	3-4 3	4-5 4-5	4-5 4-5	4-5 4	4-5 4	2-3 4	4 3-4	4-5 A	A A	3-4 1-2	
Navy Blue SPD conc.		3.2	200 120	M M	3-4 3-4	3-4 2	4-5 4	4-5 4	5 4	4-5 4	3-4	4 4	4-5 3-4	A A	4 3	







Sunfix EX

Appropriate dye selection fulfills very high requirements and right first time dyeings

Yellow EX		3.6	200 140	M M	4-5 4-5	4 4	4-5 4-5	4-5 4-5	4-5 4	4-5	4-5	4-5 4-5	4-5 3-4	A A	3 4	
Red EX		2.2	200 150	M M	4 3-4	3 2	4-5 4	4-5 4	4-5 4	4-5	4-5	4-5 4-5	4-5 3-4	B B	3-4 4	
Blue EX		1.7	200 150	H M	4-5 4	4 3	4-5 4-5	4-5 4-5	4-5 4	4-5	2-3	4-5 3-4	5 3-4	B B	4 3	
Navy Blue EX		2.0	200 200	M H	3-4 3	2-3 2-3	4-5 4-5	4-5 4-5	5 4-5	4-5	3	2-3 3-4	4-5 3	B A	4 4	

Sunfix Special










Suitable for pad-dyeing with outstanding bath stability and high degree of fixation

Yellow S3R 150% spec.		3.8	200 140	M M	4-5 4-5	4 4	4-5 4-5	4-5 4-5	4-5 4	4-5	4-5	4-5 4-5	4-5 3-4	A A	3 4	
Red S3B 150% spec.		2.2	200 150	M M	4 3-4	3-4 2	5 4-5	5 4-5	4-5 4	4-5	4-5	4-5 4-5	4-5 3-4	B B	3-4 4	
Navy Blue SBF spec.		3.2	200 120	M M	4 3-4	3 2-3	4-5 4	4-5 4	5 4-5	4-5	4	4-5 4-5	5 3-4	B A	4 3	

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								









Sunfix SS

New poly-functional dyeset to minimize the environmental impact from medium to ultra deep shades.

Yellow SS		2.7	200 150	M H	4-5 4	3-4 3-4	4-5 4-5	4-5 4-5	4-5 3-4	4	3	2-3 2-3	5 4	A W	3 4	● -
Yellow SSR		2.0	150 100	M H	4-5 4	4 3	4-5 4-5	4-5 4-5	4-5 3-4	4-5	3-4	4 4	5 3-4	A A	5 1-2	● -
Orange SS		0.9	150 150	H H	4 3-4	3-4 3	4-5 4-5	4-5 4-5	4-5 4-5	4	3	2-3 4-5	4-5 3-4	W A	5 2	● -
Red SS		1.2	200 100	M M	4 3	3 2	4-5 4-5	4 4-5	4-5 3-4	4-5	4	3 3-4	4-5 3	B B	4 1-2	● -
Red SS-2B		1.3	200 200	M H	4 3	2-3 1-2	4-5 4-5	4 4-5	4-5 4-5	2-3	3	2-3 2-3	4-5 3	B B	3-4 4	● -
Deep Red SS		0.9	200 200	M H	4-5 4	3-4 2-3	4-5 4-5	4-5 4	4-5 4	4-5	4-5	3 3-4	4-5 3	W A	4 4	● -
Dark Blue SS		1.7	200 100	H H	4-5 4	3-4 3	4-5 4-5	4-5 4-5	4-5 4	4-5	2-3	4 4	4-5 3-4	A A	3-4 1-2	● -
Navy Blue SS		2.1	200 200	M H	3-4 3	3 2-3	4-5 4-5	4-5 4-5	4-5 4-5	4-5	3-4	3 3	4-5 3	A A	4 4	● -
Night SS		2.4	200 200	L H	4 3	3 2-3	4-5 4-5	4-5 4-5	5 4-5	5	4	2 4-5	4-5 2-3	W B	4-5 4	● -

Sunfix MF-D

Very deep shades are easy attainable with cost effective recipes.

Orange MF-D		1.2	200 200	M H	4-5 4	4 4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2-3	3 2-3	4-5 3	W A	4-5 5	●●●
Red MF-GD conc.		1.2	150 100	M H	4 3	3-4 2	4-5 4-5	4-5 4-5	4 4	4	3	2 3	4-5 3	B B	4 1-2	● - ○
Red MF-3G		1.4	150 100	M H	4 3	3-4 2	4-5 4-5	4 4-5	4 4	4	3	3 3-4	4-5 3	B B	2-3 2	● - ●
Red MF-2BS		1.8	200 150	M H	4-5 3-4	3-4 2-3	4-5 4-5	4-5 4-5	4-5 4	4-5	4-5	4-5 4	4-5 3-4	B B	3-4 4	●●●
Red MF-3BD		1.8	200 200	M H	4 3	2-3 1-2	4-5 4-5	4-5 4-5	4-5 4-5	2-3	3	2-3 2-3	4-5 3	B B	3-4 4	●●●
Red MF-SB		1.2	200 150	M H	4-5 3-4	3-4 2	4-5 4-5	4-5 4-5	4-5 4	4-5	4-5	3 3-4	4-5 3	B B	4 4	●●●
Navy Blue MF-D		2.0	200 200	M H	3-4 3	2-3 2-3	4-5 4-5	4-5 4-5	4-5 4	4-5	2	2-3 3	4 3	A A	4 4	●●●
Navy Blue MF-GD		2.1	200 150	M H	3-4 2-3	3 2-3	4-5 4-5	4-5 4-5	4-5 4	4-5	3-4	4 3	4-5 3	A A	4-5 4	●●●

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								
Sunfix																
<i>Universal use for normal fastness with good reproducibility and reliable application</i>																
Yellow S3R 150%		3.5	200 140	M M	4-5 4-5	4 3-4	4-5 4-5	4-5 4	4-5 4	4-5	4-5 4-5	4-5 3-4	A A	3 4		
Red S3B 150%		2.2	200 150	M M	4 3-4	3 2	4 4-5	4 4-5	4-5 4	4-5	4-5 4-5	4-5 3-4	B B	3-4 4		
Navy Blue SB		3.2	200 120	M M	3-4 3	3-4 2	5 4	5 4	5 4	4-5	3-4 4	4 3-4	A A	4 3		
Yellow S4GL 200% 150%		2.0	140 100	M M	4 3-4	3 2-3	4-5 4-5	4-5 4-5	4-5 4-5	2	4	3-4 2-3	5 4	W C	4 4	
Orange S2R 150%		2.4	30 1	H M	3-4 2-3	4 3-4	4 4-5	4 4-5	4-5 3	4-5	4-5	3 4	5 3-4	B B	3-4 3	
Orange S2RN		2.2	150 100	H M	3-4 2-3	4 3	4 4-5	4 4-5	4-5 3-4	4-5	4-5	3 4-5	5 3-4	B B	3-4 2	
Scarlet S2G 150%		1.8	120 100	M M	3-4 3	4 3-4	4-5 4-5	4-5 4-5	4-5 3-4	4-5	4-5	4-5 4	5 3	B B	2 1	
Red S2B		2.6	50 10	M M	4 3-4	3 2-3	4 4-5	4 4-5	4-5 4	4-5	4	4 4	5 3-4	B B	3-4 3	
Red SBS 150%		3.0	200 150	M M	4 3-4	3 2	3-4 4-5	3-4 4	4-5 3-4	4-5	4-5	4 4	5 3-4	B B	4 4	
Ruby S3B		2.2	200 150	M M	4 3-4	3 2	4 4-5	4 4-5	4-5 4-5	4-5	4-5	4-5 3-4	4-5 3-4	B B	4 1-2	
Red S6B		2.2	200 150	M M	4 3-4	3 1-2	4-5 4-5	4-5 4-5	4-5 3-4	4-5	4-5	4-5 3-4	4-5 3-4	B B	4 2	
Violet S5R		4.6	200 150	M M	2-3 2-3	1-2 1-2	4-5 4-5	4 4	4-5 3-4	3	3	3 3	5 3-4	B B	4 4	
Blue SF-RL 200%		1.2	150 100	H M	4 3-4	2-3 4	4 4-5	4 4-5	5 3-4	4-5	1-2	4 2-3	4 3	C C	3 3	
Blue SSR		1.7	200 150	M H	4-5 4	3-4 3-4	5 4-5	5 4-5	5 4	4-5	2	4 2-3	4-5 3	B B	3 3	
Blue SBR		3.0	200 150	H M	4-5 4	4 3	5 3-4	5 3	4-5 2	4-5	2-3	3 3	4-5 4	B B	3-4 2	
Olive IC		3.5	150 100	H H	4-5 4-5	4 3	4-5 3-4	4-5 3	4-5 2-3	4	3	3 3	4-5 3-4	B B	3-4 4-5	
Green S4B		1.8	200 150	H H	3-4 3-4	2-3 1-2	4-5 4-5	4-5 4-5	5 4-5	4-5	3	4-5 3-4	5 3-4	A A	4 2	
Navy Blue SGN		3.2	200 120	M M	3-4 3-4	3 2	4-5 4	4-5 4	4-5 4	4-5	3-4	4-5 4-5	5 3-4	A A	4 3	
Navy Blue S2G		3.6	80 40	H M	3-4 3	2-3 1-2	4-5 4-5	4-5 4	5 4	4-5	4	4-5 4	5 3	A A	3-4 4	
Navy Blue SB conc.		2.9	200 120	M M	4 3	3-4 2	4-5 4-5	4-5 4	4-5 4	4-5	4	4-5 4	4-5 3-4	B A	4 2	
Night S-R		2.0	200 200	L H	3-4 3	2-3 2	4-5 4-5	4-5 4-5	5 4-5	3	2-3	2 4-5	4-5 2-3	A A	3-4 3	
Grey SRL		2.3	150 100	M M	4-5 4	4 3	4-5 4-5	4-5 4-5	4-5 4-5	4	2-3	3 3-4	4-5 3-4	B B	3-4 4	

Suncolours Reactive Dyes	on Cotton	g/l (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								

Sunfron C

Top of the range choice for cold pad-batch dyeing and to achieve the highest fastness levels with short and reliable process

Yellow C-4G		40	200 150	M M	4-5 4	3 2-3	4-5 4-5	4 4-5	4 4-5	2	4	1 2-3	5 4	W C	3 1	- ●●●
Yellow C-R		35	200 140	M M	4-5 4-5	3 3-4	4-5 4-5	4-5 4-5	4-5 4	4-5	3-4	4-5 4-5	5 3-4	B A	2 4	- ●●●
Yellow C-RG		27	200 140	M M	4-5 4-5	3-4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	3-4	4-5 4-5	5 3-4	B A	3 4	- ●●●
Orange C-R		18	150 100	M H	4 3	4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	3-4	2-3 4-5	5 3-4	B B	3 2	- ●●●
Red C-2G		17	200 150	M M	4 3-4	3-4 3	4-5 4-5	4-5 4-5	4-5 4-5	2	2	2 2-3	5 3-4	B B	3 2	- ●●●
Red C-R		22	200 150	M M	4 3	3-4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4	4-5	4-5 4-5	4-5 3-4	B B	3-4 4	- ●●●
Red C-2BL		46	200 150	M H	4-5 4	4-5 4-5	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2	2 3	5 3-4	W A	3 3	- ●●●
Blue C-R		26	200 100	H H	4-5 4-5	4-5 4	5 4-5	5 4	4-5 4	4-5	2	3 3	5 4	B B	3 2	- ●●●
Navy Blue C-GN		40	200 150	M H	3-4 2-3	3-4 3	4 4-5	4 4-5	4 4-5	3-4	3	4-5 4-5	4-5 3-4	A A	3 2	- ●●●
Navy Blue C-R		25	200 200	M H	4 3	3-4 3	4-5 4-5	4-5 4-5	4 4-5	3-4	1-2	2-3 3	4-5 3	A A	4 4	- ●●●

Sunfix MF-CN


For pad-dyeing, homogeneous fixation behavior in all pad applications with excellent wash-off properties and higher productivity

Yellow MF-CN		33	200 150	M H	4-5 3-4	4 3-4	4-5 4	4-5 4	4-5 4	3	2-3	2-3 2-3	5 3-4	A A	3 4	- ●●●
Orange MF-CN		12	200 200	M H	4-5 3	3-4 4	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2-3	3 2-3	4-5 3-4	W A	4-5 5	- ●●●
Red MF-CN		18	200 150	M H	4 3	3-4 3	4 4-5	4 4-5	4 4-5	4	4-5	4-5 4	4-5 3	B B	3-4 4	- ●●●
Deep Red MF-CN		11	200 200	M H	4-5 4	4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4	4	3 3-4	4-5 3	W B	4 4	- ●●●
Blue MF-CN		16	200 200	M M	4 3-4	3 2-3	4-5 4-5	4-5 4-5	4-5 4-5	4	1-2	2 2-3	5 3-4	A A	4 5	- ●●●
Navy Blue MF-CN		23	200 200	M H	3-4 3	3 2-3	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2-3	3 3	4-5 3	A A	4 4	- ●●●
Black MF-CN		60	200 200	L H	4-5 4-5	4-5 4	5 4-5	4-5 4-5	4-5 4-5	4-5	4-5	2 4-5	4-5 2-3	A A	3-4 3	- ●●●

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								













Sunfix FE-A

For special shades and specific fastness requirements

Red FE-6BA		2.6	200 150	M M	4 3	3 2	4-5 4	4-5 4	4-5 3-4	3-4	3-4	4 4	4-5 3	W A	3 1	
Royal Blue FE-FR		1.4	100 50	L L	4-5 4	3-4 4	4-5 4-5	4-5 4-5	5 4-5	3	2-3	3-4 1-2	4 3-4	B C	1-2 3	
Navy Blue FE-BNA		2.0	100 50	M H	4 3	3 2-3	4-5 4-5	4-5 4-5	5 4-5	4-5	3-4	2-3 4	4-5 3	A A	3-4 2-3	

Sunzol GRB






Economical medium to dark shade can be achieved

































G/Yellow GRB		3.7	200 160	L H	4-5 4	3-4 3-4	4-5 4-5	4-5 4-5	4-5 4-5	4	3	2 2-3	5 3-4	B A	4 5	
Ultra Yellow GRBN		2.6	200 150	M M	4-5 4	4 4	4-5 4-5	4-5 4	4-5 4-5	4	3-4	4 4-5	4-5 3-4	B A	3-4 4	
Red GRB		2.8	200 150	M H	4 3-4	4 2	4-5 4-5	4 4	4-5 4-5	3	3-4	2-3 2-3	4-5 3	B B	3 4	
Ultra Red GRB		1.6	200 150	M M	4 3-4	3-4 2	4-5 4-5	4-5 4	4-5 4-5	3-4	4-5	3-4 4-5	4-5 3	B B	2-3 2	
Blue GRB		1.8	200 150	M M	3-4 3	2-3 2	4-5 4-5	4-5 4-5	5 4-5	4-5	2	2 2-3	5 3-4	A A	4 5	
Navy Blue GRB		2.1	200 200	M H	3-4 3	3 2-3	5 4-5	5 4-5	5 4-5	4-5	3	3 3	4-5 3	A A	4 4	

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping	Dyeing application
							Acid	Alkali								

Sunrect

Direct dyes, high-quality direct dyes with a good ecological profile

Blue BRL		1.1	20	H	4 3-4	4 3	4-5 4	4-5 4	4 1	4	1-2	2 3	4 2-3	A B	3-4	
Black B H/C		3.7	20	H	4-5 3	4-5 4-5	5 4-5	5 4	4-5 1	3-4	1-2	2 3-4	4-5 2-3	W A	3-4	
Neon Yellow		3.0	50	H	2 1-2	2 1-2	4-5 4	4-5 4	4-5 1-2	2-3	4	2 3	4 2-3	C C	3-4	
Neon Blue		2.4	50	H	4 4	2 3	3 1-2	4 1-2	3 1-2	2-3	1-2	3 4	4 2	B B	3	

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, 1/6 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								
Sunzol																
<i>Wide range of economical dyes with excellent wet fastness</i>																
Yellow GL		5.0	100 50	L M	5 4-5	3-4 3	4-5 4-5	4-5 4-5	4-5 4-5	4-5	3	1-2 2-3	5 3-4	A C	4-5 5	
Yellow GR		4.5	80 60	L M	4-5 4-5	4 3	4-5 4-5	4-5 4-5	4-5 4-5	4-5	2	1-2 2-3	5 3-4	C C	4-5 5	
G/Yellow 2RN 150%		3.0	200 160	L H	4-5 4	4 3-4	4-5 4-5	4-5 4-5	5 4-5	3-4	2-3	2 2-3	5 3-4	W W	4 5	
Orange 3R		3.0	150 80	L M	4-5 4	3-4 2-3	4-5 4-5	4-5 4-5	4-5 4-5	3	3-4	2 3	5 3-4	W W	4-5 5	
Red BB 150%		2.6	140 80	M M	4 3-4	3-4 1-2	4-5 4-5	4-5 4-5	4-5 4	2	2-3	2 3	5 3-4	W A	4-5 5	
Red F3B		2.7	100 50	M H	4 3-4	3 2	4-5 4-5	4-5 4-5	5 4-5	3-4	4	4 3	5 3	W A	4-5 5	
Red RB 133%		2.5	200 150	L H	4 3-4	3-4 1-2	4-5 4-5	4-5 4-5	4-5 4-5	3	2-3	2-3 2-3	5 3	B B	3 3	
Violet 5R		5.0	200 200	L H	4-5 4-5	3-4 1-2	4-5 4-5	3 4-5	3-4 4-5	4	4	4 2-3	4-5 3-4	A A	4 5	
Green GG		1.9	200 120	H M	3-4 3	1-2 1-2	4-5 4-5	4-5 4-5	4 3	4-5	2	2-3 4	5 3	B B	2-3 5	
Green 6B		3.0	200 120	H M	4-5 4	2-3 2	4 4-5	4-5 4-5	4-5 3	4	1-2	2-3 4	5 3	B B	2-3 1	
Turquoise Blue G 266% 133%, 165%		1.2	200 120	H M	4 3-4	2 2-3	4-5 4-5	4-5 4-5	4-5 3	4-5	1-2	2-3 4	5 2-3	B B	2-3 1	
Blue RS 150% 100%		2.4	200 150	L H	4-5 4-5	4 3	4-5 4-5	4-5 4-5	5 4-5	4-5	2-3	4 2	5 3-4	B B	3-4 4	
Blue BB 133%		3.6	200 150	L M	4-5 4	3 2	4 4-5	4 4-5	4-5 4-5	4-5	3-4	4 3	5 3-4	A A	4 5	
Navy Blue GG		2.2	200 200	M H	3-4 3	3 2	5 4-5	5 4-5	4-5 4-5	4-5	4	3-4 3	5 3	A A	3-4 4	
Grey RL		2.2	150 100	L M	4-5 4-5	3 2	5 4-5	4-5 4-5	4-5 4	3	1-2	2 2	4-5 3	B A	4 5	
Black B 150% 133%		2.0	200 200	L H	3-4 3	2-3 2	4-5 4-5	4-5 4-5	5 4-5	3	2-3	2 4-5	4-5 2-3	A A	3-4 3	

Suncolours Reactive Dyes	on Cotton	% o.w.f. (1/1 SD)	Solubility	Substantivity Reactivity	Light (1/1, BK 1/2 SD)	Perspiration-light	Perspiration		Washing	M&S C10A	Chlorinated water	Bleaching	Rubbing	Dischargeability	Stripping Partial stripping	Dyeing application
							Acid	Alkali								
Sunzol Black																
<i>High-quality blacks with extremely high performance</i>																
Black AF		6.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4-5	4-5 4-5	5	4-5	2-3 4-5	4-5 2-3	B B	3-4 4	
Black FS		7.0	200 200	L H	5 4-5	4 4	5 4	5 4	5 3-4	4-5	3-4	2 4-5	4-5 2-3	B B	4 3	
Black DN conc.		5.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4-5	5 4-5	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	
Black GN conc.		5.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4-5	5 4-5	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	
Black RN conc.		5.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4-5	5 4-5	4-5	3-4	2 4-5	4-5 2-3	A A	3-4 3	
Black BN conc.		5.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4-5	5 4-5	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	
Black MT conc.		7.0	200 200	L H	4 3-4	4 3-4	5 4-5	5 4	5 4	4-5	3-4	2-3 4-5	4-5 2-3	B B	3 3	
Black WN conc.		7.0	200 200	L H	4-5 4	3-4 3-4	5 4	5 4	5 4	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	
Black EXF		6.5	200 200	L H	4-5 4	3-4 3-4	5 4-5	5 4	5 4-5	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	
Black GSP 120%		7.0	200 200	L H	4 3-4	3-4 3-4	5 4	5 3-4	5 4-5	4-5	3-4	1-2 5	4-5 2-3	A B	3-4 3	
Black NWR liq.		12.0	200 200	L H	4-5 4	4 3-4	5 4-5	5 4	5 4-5	4-5	3-4	2 4-5	4-5 2-3	A A	3-4 3	
Black FXB liq.		12.0	200 200	L H	4-5 4	4 3-4	5 4	5 4	5 4-5	4-5	3-4	2 4-5	4-5 2-3	A A	3-4 3	
Black MTL liq.		18.0	200 200	L H	4 3-4	3-4 3	5 3-4	5 3-4	5 3-4	4-5	3-4	2-3 4-5	4-5 2-3	B B	3 3	
Black GXL liq.		18.0	200 200	L H	4 3-4	3-4 3-4	5 4	5 4	5 4	4-5	4	2 4-5	4-5 2-3	A B	3-4 3	
Black CNN liq.		18.0	200 200	L H	4-5 4	4 4	5 4	5 3-4	5 4-5	4-5	3-4	2 4-5	4-5 2-3	B B	3-4 3	
Black ON 400 liq.		18.0	200 200	L H	4 3-4	3 3	5 3-4	5 3-4	5 3-4	4-5	4	2-3 4-5	4-5 2-3	A A	3 3	
Black PFL liq.		18.0	200 200	L H	4-5 4	4 4	5 3-4	5 3-4	5 4-5	4-5	3-4	2 4-5	4-5 2-3	A B	3-4 3	
Black NWD liq.		18.0	200 200	L H	4 3-4	3-4 3-4	5 3-4	5 3-4	5 3-4	4-5	4	2 4-5	4-5 2-3	A A	3-4 3	



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