

SunACTIVETM

Reactive Dyes For Textile

Colours

that breathe life into

fabrics





SUNACTIVE COLD 'M' / HOT 'H' Dyes

Dyeing with Cold 'M' type & Hot 'H' Dyes:

Cold Brands: Are highly reactive and are employed in dyeing under mild alkaline conditions (30-40° C).

Hot Brands: Are less reactive and are employed both in dyeing and printing under stronger alkaline conditions and high temperature (60-80° C).

Exhaustion (open beck, winch, jigger or package), pad-Jig fixation, pad-dry bake, pad batch and pad-dry steam are common methods of application.

Dissolving of Dyestuff: The dye is pasted with equal weight of cold water and dissolved by using warm water at 50° C.

Dyeing Methods:

Exhaust Dyeing: Set the dye-bath at 30-35° C with common salt or glauber's salt, enter the goods run for 10 mins. Add the dissolved dye and run for 30 mins. Finally add the dissolved alkali and raise temp. (30-40° C) for cold brands and (80-90° C) for hot brands. Finally goods are washed off.

Salt and Alkali Requirement for Hot Brand

Depth of Shade (% on weight of goods)	Salt g/l	Soda Ash g/l
upto 0.5	30	10
0.51-1.0	45	15
1.01-2	60	15
2.01-4	70	20
Above 4	90	20

Salt and Alkali Requirement for Cold Brand

Depth of Shade (% on weight of goods)	g/l	Soda Ash		
		L:R 15:1	L:R 20:1	L:R 30:1
upto 0.5	25	5	3	2
0.51-2.0	35	5	4	2
2.01-4.0	45	10	8	4
Above 4	55	15	10	5

PRINTING COLD AND HOT BRAND:

Only hot brands are preferred for printing as stated below; however cold brand can also be printed

	Cold Brand		Hot Brand	
Dye	40	Parts	40	Parts
Urea	50	"	100	"
Hot Water	300	"	300	"
Sodium Alginate (4% Paste)	585	"	520	"
Resist Salt	10	"	10	"
Soda-bi-carb	15	"	30	"
	1000	Parts	1000	Parts

Print (with Soda-bi-carb), dry and steam for 10 mins. at 102° C. Wash in cold and hot water & soap at boil with neutral soap for better results.

SUNACTIVE DYES (VINYL SULPHONE BASED)

INTRODUCTION:-

These dyes possess very good light and wash fastness, easy to apply on cellulosic fibre by normal exhaust, batch-wise, continuous and thermo-fixation process, suitable for printing and give brilliant and attractive shades. They have excellent white effect on dyed grounds by discharge and resist printing method, unfixed dyes are easily washed off and have high stability in dry state and in neutral solution.

The entire dyeing or printing process consists of mainly the following 3 stages:-

1. Application of the dyestuff to the fiber.
2. Fixation of the dyestuff on the fiber.
3. Removal of any unfixed dyestuff from the fiber.

PREPARATION OF THE GOODS:-

The goods to be dyed or printed should be thoroughly desized, scoured and preferably mercerized or causticized to retain deep and bright shades. Traces of residual chlorine, peroxide and alkali should be removed by treating the goods with very dilute acetic acid.

DYEING METHOD:-

1. Jigger Dyeing

Procedure:-

Set the dye-bath at the required temperature and add well dissolved dye solution over two passages, followed by Glauber salt or common salt over two passages. After two more passages add required amount of alkali solution over two passages and continue dyeing at prescribed temperature for further period of 60-90 mins. depending on the depth of the shade.



Following table gives the quantities of chemicals recommended:-

Dyeing temperature		40° C		60° C		80° C	
Liquor ratio		1:2 to 1:3	1:4 to 1:6	1:2 to 1:3	1:4 to 1:6	1:2 to 1:3	1:4 to 1:6
Glauber salt (Cal.) or common salt	g/l	50	50	50	50	50	50
Caustic soda solution (38° B'e/72° Tw /32.5%) +	cc/l	4-6	3-4	3-5	2-3	-	-
Soda ash	g/l	5	5	5	5	25	15-20
or Trisodium phosphate	g/l	-	30	30	20-25	-	-
Dyeing period (After minutes final alkali addition)		90		60		60	

PADDING PROCESS:-

1. One bath - pad batch process:-

A well scoured, cold fabric is padded at room temperature (25° C-30° C). As it is desirable to replace the liquor at faster rate, higher speed of fabric padding and smaller capacity trough is recommended. The liquor pick-up should be 60-70% for cotton and 90-100% for viscose fabric. Speed of the padding should be adjusted in such a way that whole lot of dye solution should be used up within 20-30 mins. Alkali should be added to the dye solution just before commencement of the padding.

1 (a) Long time pad batch process :-

Sodium silicate		Sodium silicate g/l	Caustic soda solution (38° B'e/72° Tw/32.5% w/w) (cc)	
°Be/°Tw	Weight ratio Na ₂ O : SiO ₂		Upto 30 g/l dyestuff	Above 30 g/l dyestuff
37-40/69-77	1 : 3.3	135	13	18
40-47/77-82	1 : 3.3	120	11	16
48-50/100-106	1 : 2.6	100	5	10
58-60/134-142	1 : 2.1	85	-	4

2. One Bath - > Pad - > Dry - > Steam Method:-

This process is carried out on a padding mangle attached with either hot flue or float dryer. To fix the dyestuff, the dyed, dry material is steamed in the normal continuous steamer for 4-7 mins. at 100° -103° C. The steam should be free from acid.

Following table will help to prepare padding liquor:-

SunActive dyes	g/l	10	20	30	40	50	50-70
Urea	g/l	0-50	0-50	0-50	50-75	50-75	50-70
Sodium bi-carbonate	g/l	5	10	15	15-18	20	20-25
Resist salt	g/l	10	10	10	10	10	10

DIRECT PRINTING WITH SUNACTIVE DYESTUFFS

1. Steaming Method:-

Printing paste recipe:-

X	Parts	SunActive dyestuff is mixed with	20	Parts	Sodium bi-carbonate
50-100	Parts	Urea	10	Parts	Resist salt
200	Parts	Water	Y	Parts	Water or thickening and bulk to
500	Parts	Thickening (Sodium Alginate)	1000	Parts	

The above thickening could be replaced by half emulsion thickening as follows:-

Emulsion thickening:-

500	Parts	Thickening (Sodium Alginate)
100	Parts	Water
10	Parts	Emulsifier
390	Parts	Kerosene
1000	Parts	

Print - dry - steam at 103° C for 10-15 mins. in star ager or 5-7 mins. in a continuous steamer. Hot and cold washing - soap at boil for 15-20 minutes with neutral detergent. Finally rinse hot and cold.

2. Cold silicate pad batch method:-

Print paste recipe is same as per steaming method, but the use of alkali is avoided. After printing and drying the fabric is nip padded with 102°-104° Tw sodium silicate solution ($\text{Na}_2\text{O} : \text{SiO}_2$ 1 : 2.1) and 4 - 6 cc/litre Caustic soda - 72° Tw.

The batch is covered with Polythene sheet and kept for 20 hours.

AFTER TREATMENTS

1. Cold rinse with overflow.
2. Neutralising at about 40° C with 2-3 cc/litre of acetic acid (60%). (Not for silicate pad method).
3. Hot rinsing with sodium hexametaphosphate 2-3 g/l at 60° C-70° C.
4. Soaping at boil with neutral detergent.
5. Hot rinsing/Cold rinsing.



WHITE DISCHARGE PRINTING WITH SUNACTIVE DYESTUFF

SunActive dyestuff are suitable for preparing wash and light fast discharge grounds. The fabric should be treated with a mild oxidising agent before discharge printing. This will protect the ground from the reductive effect of the printing paste.

Preparation of the white discharge printing paste.

20	Parts	Rongolite C
10	Parts	Titanium dioxide (1:1)
8	Parts	Discharge Salt W/Leucotrop W (BASF)
40	Parts	Thickening
20	Parts	Caustic soda - 38° B'e/72° Tw
2	Parts	Water
100	Parts	

Print - > dry at 90° C -> steam 15-20 minutes in a star ager at 100° -103° C. Then the material is rinsed twice in cold water - hot rinse at 40° C -> soap at 90°C with a neutral detergent. Finally hot and cold rinse.

RESIST PRINTING UNDER SUPRA DYESTUFF

The printing paste used for resist printing is highly acidic, the suitable acid resistant thickener should be used. British Gum/Indalca AGBV are acid resistant hence are suitable choice for resist printing.

Printing recipe

100	Parts	Uncooked starch (1 : 1)
100	Parts	Citric acid
10	Parts	Optical Brightner (Resistant to acid)
500	Parts	Thickening
290	Parts	Water/Thickening
1000	Parts	

Print -> dry - > nip pad through following dye solution at room temperature (25-30° C)

X	Parts	SunActive dyestuff
200	Parts	Boiling water
100	Parts	Urea
10	Parts	Resist salt
60	Parts	Sodium bi-carbonate (just before padding)
Y	Parts	Water
1000	Parts	



SUNACTIVE 'HE' DYES

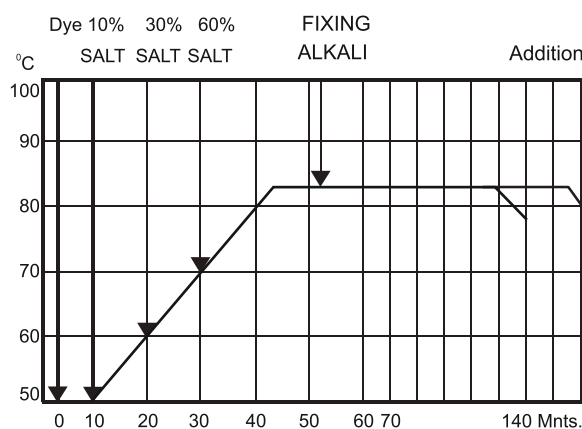
They have high substantivity and superior exhaustion properties and are mainly used for dyeing of cottons by batch-wise method on conventional machines. HE dyes are mainly suited for dyeing of mixed shade as they are less sensitive to variation in Liquor to goods ratio and concentration of electrolytes in the dye bath as compared to cold or hot brands.

The main advantage of HE dyes are excellent build-up, high fixation, good compatibility, consistency of colour yield and excellent wet fastness properties.

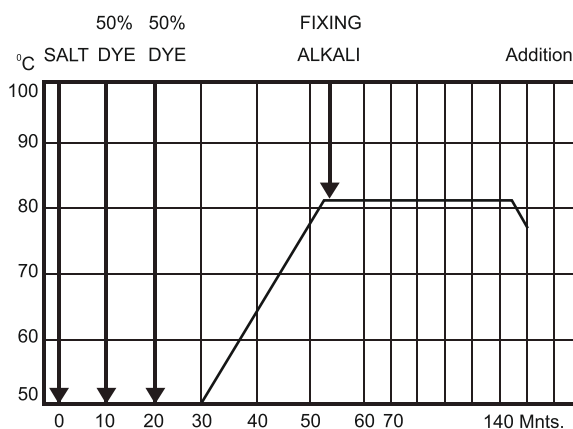
HE dyes are applied by same method using same recipe as used for dyeing of Hot brand mainly by exhaust on winch or Jigger. Dyeing results are even and fastness properties are better. These are suitable for dyeing hosiery, knitwear and blends where cellulose part of polyester/cellulose is to be dyed. 'HE' dyes are suited for dyeing mixed shades as they are less sensitive to variation in liquor ratio and concentration of salt.

Method of Application

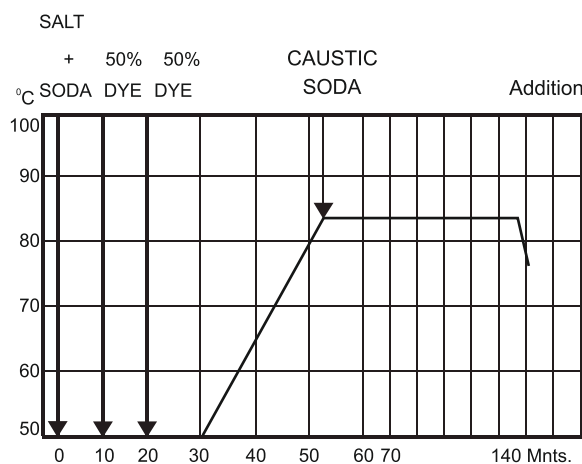
1. Piece Goods Dyeing



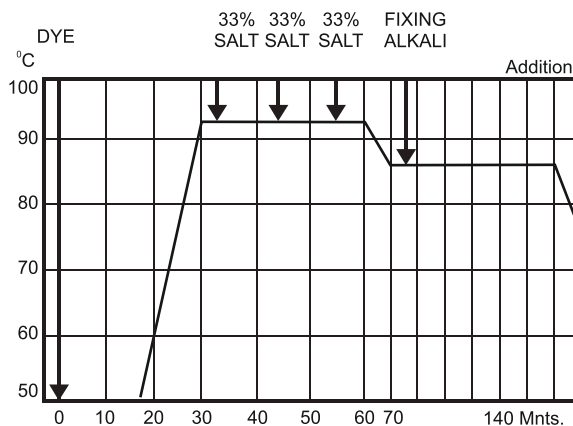
Standard method for application to all types of piece goods on jiggers.



Suitable for dyeing unmercerised and mercerised material on circulating machines or winches.



Suitable for dyeing unmercerised material on circulating machines.



Suitable for mercerised piece goods on winches.

SUNACTIVE BIFUNCTIONAL DYESTUFF

The SunActive Bifunctional Dyestuffs are used for Exhaust dyeing at a low temperature. These dyestuffs have very high exhaustion properties, better levelling properties and a very good alkaline stability. These dyes can also be applied by cold pad batch method, hence these dyes are real energy saving dyes.

DYEING METHODS:-

- (i) **EXHAUST DYEING:** Dyestuff is dissolved in water and run for 20 mts. Salt is introduced and temperature raised to 60° C in about 20 mts. Alkali is introduced at 60° C and temperature is maintained for 60 mts.

The following parameter is applied :

Glauber 's Salt - 50 gm/l

Soda Ash - 20 gm/l

- (ii) **PADDING METHOD:**

(1) Pad [SunActive Bifunctional Dyes + Urea + Sodium Silicate 85 gm/l

(134 - 142° Tw $\text{Na}_2\text{O} : \text{SiO}_2$: 1 : 2.1) + Caustic Soda 33% 4 gm/l]

- Batch (20 hours) - Wash.

(2) Pad [SunActive Bifunctional Dyes + Urea + NaHCO_3 (10 - 20 gm/l)]

- dry-normal steam for 5 mts. or Thermofix at 140° C for 4 mts.

- Wash.

These dye stuff can also be used for printing by steaming and/or by Silicate method.

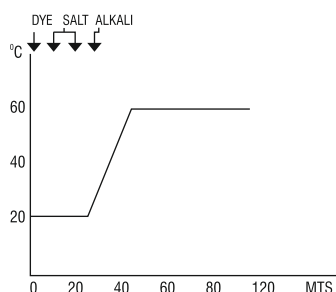
(i) Print (dyestuff + alkali) - dry - steam.

(ii) Print (dyestuff + alkali) - dry - Thermofix at 150° C for 3 to 5 min.

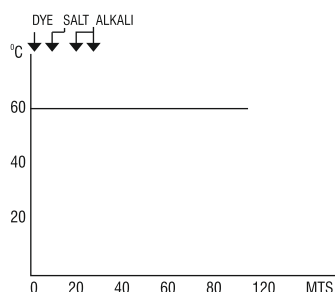
(iii) Print (dyestuff) - dry - Nip pad through Sodium Silicate - Batch (20 hours).

The print is washed by cold water to remove unfixed dyes and then washed with suitable detergent then washed with cold water till it is colourless.

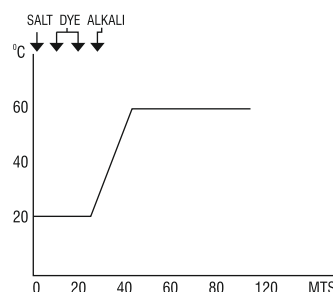
1. Normal method



2. Constant temperature method



3. "All - in" method



AFTER TREATMENT:-

A thorough soaping and washing is required to clear off the unfixed dye and to obtain maximum fastness properties and brightness of shade.

Washing off is done by thoroughly rinsing in cold water followed by hot water.

Then it is soaped at boil for 15 mins. using 2 gpl detergent. Finally again it is rinsed in hot water and cold water subsequently.

ABBREVIATIONS:-

Light : 1 to 7 in increasing order where 7 represents highest fastness.

Washing & : 1 to 5 in increasing order where 5 represents highest fastness.
others

Dischargeability : G - Good
M - Moderate
P - Poor

Substantivity : ○ Suitable
△ Not suitable
L - Low
M - Medium
H - High

This information mentioned herein is provided in good faith but without warranty. It is the responsibility of the user to test our products to their suitability for any application.

No statement is intended or should be construed as a recommendation to infringe any patent and the responsibility to observe any such patent right rest with the user.

(without Guarantee)



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Reactive Dyes For Textile

“M” DYES (Dichloro Triazine)			Fastness to						
1% Dyeing	4% Dyeing	C.I. Reactive							
		Yellow M4-G Yellow 22	6	4	5	1	M	G	80
		Yellow M8G Yellow 86	6-7	5	5	2	M	M	100
		Yellow M4R Orange 14	5	4-5	4	1	M	P	100
		Golden Yellow MR Yellow 44	5	4-5	4	2	H	P	100
		Orange M2R Orange 4	4	5	4	4	M	P	100
		Red M5B Red 2	4-5	4-5	3-4	1	H	P	80
		Red M8B Red 11	4-5	4-5	2	3	H	P	80
		Magenta MB Violet 13	4-5	5	4-5	1	H	P	80
		Violet C4R Violet 14	4	5	4	3	M	P	80
		Turq. Blue MGN Blue 140	5	4	4	1	H	P	130
		Blue M4GD Blue 168	4-5	4	4	1	M	P	80
		Blue MR Blue 4	5	4-5	4	1	H	P	100
		Blue M2R Blue 81	5	4	4	3	H	P	80

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Reactive Dyes For Textile

“H” DYES (Monochloro Triazine)			Fastness to						 gm/litre at 30° C
1% Print	4% Print	C.I. Reactive							
		Yellow H4G Yellow 18	6-7	4-5	4-5	2-3	L	G	120
		Golden Yellow HR Orange 12	6	4-5	5	3	M	G	120
		Orange H2R Orange 13	4-5	5	4	4	M	M	130
		Red H8B Red 31	5-6	5	4	4	H	P	100
		Red 6BX Red 76	5	4	5	3-4	M	P	100
		Magenta HB Violet 13	6	4	4	3-4	M	M	80
		Purple H3R Violet 1	6-7	5	4	4	L	M	100
		Navy Blue RX Blue 59	3	3-4	4-5	1	H	P	60
		Blue 5RH Blue 13	6	5	4	3-4	M	P	100
		Turq. Blue H5G Blue 25	5-6	4-5	3	3-4	H	P	90
		Red Brown H4R Brown 9	5	5	4-5	4-5	L	P	90
		Black HN Black 8	6	4-5	3	4	L	P	80


 Washing Method: DIN 54011

 Light Fastness

 Hypochlorite (Effect)

 Substantivity

 Perspiration Method: DIN 54020

 Dischargeability

 Solubility



SunACTIVE[™]




































Reactive Dyes For Textile

“H” DYES (New ‘P’ Type) (Monochloro Triazine)			Fastness to								
1% Print	4% Print	C.I. Reactive									
		Yellow P8G Yellow 85	5	4-5	4	3	M	M			100
		Yellow P6G Yellow 95	6-7	5	4-5	2	M	M			100
		Golden Yellow P3R Orange	6	4-5	5	3	M	M			120
		Orange P4R Orange 35	5	4	3-4	2	M	M			100
		Red PX4B Red 3:1	5	4-5	3-4	3	M	M			100
		Red PB Red 24	5-6	4-5	5	2	H	M			100
		Red P3B Red 45	5	4-5	3-4	2-3	M	M			100
		Red P4B Red 245	4-5	4-5	4-5	3-4	M	P			100
		Brown P6R Brown 11	5-6	4	4-5	2	M	M			100
		Blue P3R Blue 49	5	4-5	3	3	H	P			100
		Navy Blue Black 39	5-6	5	5	2	H	P			100
		Black PGR Black Mix	5	5	4-5	2	H	P			100



SunACTIVE™

Reactive Dyes For Textile

“VINYL SULPHONE BASED” DYES			Fastness to										 gm/litre at 30° C
1% Dyeing	4% Dyeing	C.I. Reactive											
		Yellow FG Yellow 42	5	5	5	1	L	G	120				
		Yellow GR Yellow 15	6	5	5	1	H	G	120				
		Yellow GL Yellow 37	6	4-5	4-5	1	M	M	100				
		Golden Yellow G Yellow 17	6	5	5	1	H	G	100				
		Golden Yellow R Yellow 77	5	4-5	5	3	H	G	100				
		Yellow RNL Orange 107	6	5	5	1	H	G	150				
		Orange 2R Orange 7	5-6	5	5	1	H	G	100				
		Orange 3R Orange 16	5-6	5	5	1	H	G	120				
		Golden Yellow RR Orange 78	5-6	5	5	1	H	G	100				
		Red C2G Red 106	4	5	5	1	L	G	100				
		Red 5B Red 35	4	5	5	1	M	G	100				
		Red HRBL Red 198:1	5-6	4-5	5	2-3	H	P	100				



Washing Method: DIN 54011



Light Fastness



Hypochlorite (Effect)



Substantivity


































Perspiration Method: DIN 54020



Dischargeability



Solubility

“VINYL SULPHONE BASED” DYES			Fastness to						 gm/litre at 30° C
1% Dyeing	4% Dyeing	C.I. Reactive							
		Violet 5R Violet 5	6-7	4	4-5	3-4	M	M	100
		Blue BB Blue 220	5-6	4-5	3-4	2	H	M	150
		Blue R Blue 19	7	5-6	5	4	H	P	100
		Blue 3R Blue 28	6-7	4	3-4	4-5	H	M	100
		Turq. Blue G Blue 21	6	4-5	5	3-4	H	G	100
		Green 6B Blue 38	7	3-4	4	2-3	H	M	100
		Blue H2GL Blue 203	6	6	5	2-3	H	G	100
		Blue RGB Blue 250	6	4	5	2-3	H	G	100
		Brown GR Brown 18	6	5	4-5	1	H	G	80
		Black RL Black 31	5-6	4-5	5	3-4	H	M	100
		Black B Black 5	5	4-5	5	1	H	G	150
		Deep Black N-150	5	4-5	4-5	2-3	H	G	120
		Black WNN Black Mix	5	4-5	5	2-3	H	G	120



Washing Method: DIN 54011



Light Fastness



Hypochlorite (Effect)



Substantivity










Perspiration Method: DIN 54020



Dischargeability



Solubility

“HE” “HIGH EXHAUST” DYES			Fastness to						 gm/litre at 30° C
1% Dyeing	4% Dyeing	C.I. Reactive							
		Yellow HE6G Yellow 135	5	4	4	4	H	M	100
		Yellow HE4G Yellow 81	5-6	5	4-5	3	H	M	150
		Golden Yellow HE4R Yellow 84	5	5	4-5	4	H	G	100
		Orange HER Orange 84	4-5	5	4	4	H	P	80
		Red HE3B Red 120	5	5	4-5	3	H	P	140
		Red HE7B Red 141	4-5	4-5	4-5	3-4	H	P	150
		Red HE8B Red 152	4-5	4-5	4-5	3-4	H	P	100
		Turq. Blue HA Blue 71	6	4-5	4-5	4	M	G	100
		Navy Blue HER Blue 171	5	4-5	4-5	3	H	G	150
		Navy Blue HE2R Blue 172	5	4-5	4-5	3	H	G	150
		Green HE4B Green 19	4-5	4-5	4-5	2	H	P	100
		Blue HEGN Blue 198	5	4-5	5	1	H	P	100
		Blue HERD Blue 160	6	4-5	4-5	4	H	G	80



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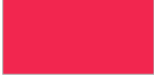

















Reactive Dyes For Textile

“BI-FUNCTIONAL” ‘ME’ DYES			Fastness to						gm/litre at 30° C
1% Dyeing	4% Dyeing	C.I. Reactive							
		Brill Yellow 4GF 150% Yellow 160	5	4-5	4-5	2	H	G	100
		Yellow 3RF 150% Yellow 145	5	4	5	3	H	G	120
		Orange 2RF 150% Orange 122	5	5	5	2	M	M	100
		Red F4BL 150% Red 195	5	4	5	3	M	P	150
		Red F6BL 150% Red 250	5	4-5	4-5	3	M	P	100
		Scarlet RED 2GF Red 222	4-5	4-5	4	3-4	M	M	100
		Blue BRF Blue 221	5-6	4	4	3	H	G	100
		Navy Blue F2GL Blue 194	6	5	5	1	H	G	120
		Navy Blue BF Blue 222	4-5	5	4	1	H	G	100
		Blue ME 2RL Blue 248	4-5	5	4	1	H	G	100
		Black HFGR	4-5	4-5	4-5	1	H	M	120
		Super Black R Black (Mix)	5	4-5	4-5	2	H	G	120
		Super Black G Black Mix	5	4-5	4-5	2	H	G	120



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Reactive Dyes For Textile

VRGBN Series / MIX BLACK		C.I. Reactive	Fastness to						 gm/litre at 30° C
1% Dyeing	4% Dyeing								
		R. Yellow VRGBN	5	4-5	4	1	H	M	100
		R. Red VRGBN	5	4-5	4	2	H	P	100
		R. Deep Red VRGBN	5	4-5	4-5	3	H	P	100
		R. Blue VRGBN	5	5	5	4	H	G	120
		R. Navy Blue VRGBN	5-6	5	5	3	H	G	120
		R. Ultra YELLOW VRGBN	5	4	4	3	H	M	100
		R. Ultra ORANGE VRGBN	5	4	4	3	H	G	100
		R. Ultra CARMINE VRGBN	5-6	5	5	4	H	M	100
		R. Ultra Red VRGBN	5-6	4-5	4-5	4	H	P	100
		R. Deep Black VRGBN	5-6	4-5	4-5	4	H	M	100
		R. Black GSP (R. BLACK F3DBP)	5	5	4-5	2	H	G	120



Washing Method: DIN 54011



Light Fastness



Hypochlorite (Effect)



Substantivity



Perspiration Method: DIN 54020



Dischargeability














Solubility














SunActive RR

For warm exhaust suitable for medium shades, cost effective & higher productivity.

		Fastness to						 gm/litre at 30° C
4% Dyeing	SunActive							
	Yellow RR	4	4-5	4	4-5	H	G	100
	Orange RR	4-5	4-5	4	4-5	H	P	100
	Red RR	4	4	3-4	3-4	H	P	100
	Blue RR	4-5	4-5	5	4	H	M	150

SunActive LX

For warm exhaust suitable for pale shades with perfect reproducibility

















		Fastness to						 gm/litre at 30° C
0.5% Dyeing	SunActive							
	Yellow LX	5	5	4-5	4-5	H	M	120
	Red LX	5	5	4-5	4-5	H	P	120
	Blue LX	5	4-5	4-5	4-5	H	M	120
	Navy LX	4-5	4-5	4	4-5	H	M	100





SunActive ED

Multifunctional warm exhaust for deep shades with cost effective and higher productivity.

		Fastness to						
4% Dyeing	SunActive							
	Yellow ED-2G	5	5	4	4	H	P	100
	Yellow ED	4	4-5	4	4-5	H	G	100
	Orange ED2R	4-5	4-5	4	4-5	H	P	100
	Red ED	4-5	4	4	3	H	P	100
	Red ED-3B	4-5	4-5	4-5	4	H	P	120
	Red ED-7B	5	5	5	4-5	H	M	120
	Blue ED	4-5	4-5	5	4	H	M	150
	Navy Blue ED	5	4-5	5	4	H	M	150
	Black ED	5-6	5	4	4	H	G	120



Washing Method: DIN 54011



Light Fastness



Hypochlorite (Effect)



Substantivity



Perspiration Method: DIN 54020



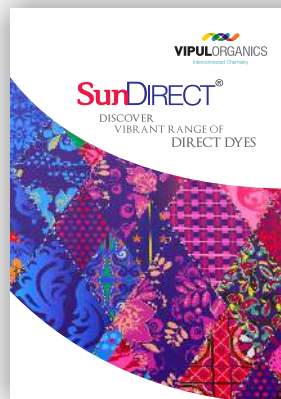
Dischargeability



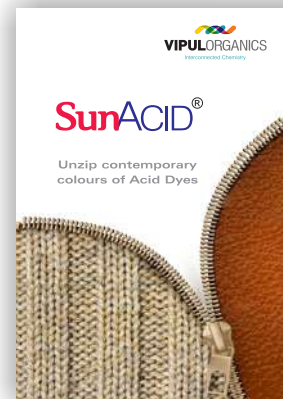
Solubility

Our Other Range of Textile Dyes

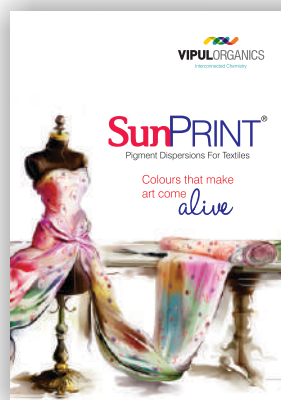
Direct Dyes



Acid Dyes




Pigment Paste



Vat Dyes




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Manufacturing Units

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