



SWASTIK
CHEMICALS

REACTIVE DYES

Better Service in Our Motto

01 Exhaust Dyeing

	Method	Suitable for	Series
A.	Standard Method (Temp. Rise)	Normal Fabrics	VS, ME
B.	Standard Method (Isothermal at 60°C)	Normal Fabrics	VS, ME, Black
C.	Specific Method (Migration)	Mercerised Cotton, Viscose Tightly Packages, High Twist Yarns	Turquoise, VS
D.	Specific Method (Isothermal at 80°C)	Mercerised Cotton, Viscose Tightly Packages, High Twist Yarns	HE / Turquoise

ALKALI & SALT REQUIREMENTS (EXHAUST DYEING)

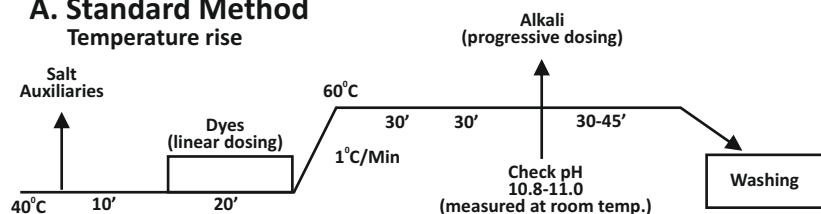
'HE' Dyes

Dyeing Depth	Salt (g/l)	Soda Ash (g/l)
Light	30	10
Medium	40-60	15-20
Dark	80	20

VS, ME, BLACK

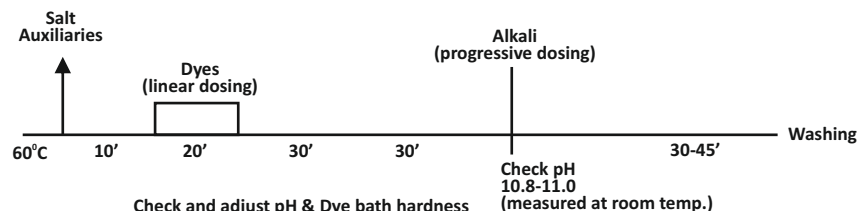
Dyeing Depth	Salt (g/l)	Soda Ash (g/l)
Light	20	10
Medium	40-60	15
Dark	80	20

A. Standard Method Temperature rise



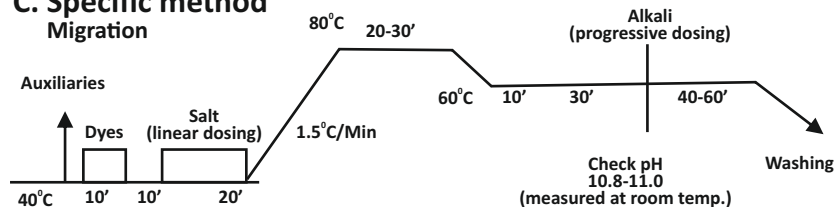
Check and adjust pH & Dye bath hardness

B. Standard Method Isothermal at 60°C



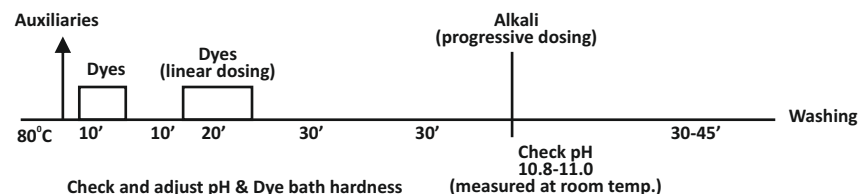
Check and adjust pH & Dye bath hardness

C. Specific method Migration



Check and adjust pH & Dye bath hardness

D. Specific method Isothermal at 80°C



Check and adjust pH & Dye bath hardness

(2)

02 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
		Penetration agent X g/l
		(wetting agent) 1-2 g/l
		Sodium silicate 37-40° Bé
		Caustic soda 36° Bé 70 ml/l
		Urea 10-30 ml/l
		100-200 g/l

Required amount of alkali :

Dyeing Depth		Light	Medium	Dark
Sodium silicate (37-40° Be)	m/l	70	70	70
Caustic Soda (36° Be)	m/l	10-15	20-25	28-30

Note :

- Salt Free Method of dyeing.
- Good Colour Yield.
- Metering pump required.
- Use of Urea is recommended for better bath stability.

03 Continuous Dyeing

Pad-Dry-Pad-Steam (PDPS)

Pad liquor	:	Dyes
		Wetting agent
		Reduction protectant
		Migration inhibitor
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
Chemical Liquor	:	70-80% pick up
Steaming	:	60-90 sec. in saturated steam (101-105°C)

(3)

Required amount of salt and alkali :

Dyeing Depth		Light	Medium	Dark
Salt	g/l	200	250	250
Soda Ash	g/l	20	20	20
Caustic soda (36° Be)	ml/l	8	12	15

Note :

- High productivity and colour yield.
- Classic procedure for continuous dyeing of woven fabrics.
- When using dyes with low reactivity such as Turquoise Blue G, 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 a opaque material to protect them from daylight.

04 | Printing

Both one phase and two phase methods can be use. A typical printing recipe is given below.

Ingredients, parts	Cold Brand	Hot Brand
Dyestuffs	10-60	10-60
Urea	40-60	40-60
Alginate Thickening (4.0%)	350-400	400
Resist Salt	40	40
Sodium Bicarbonate	10-12	15-30
Water	Balance	Balance
Total	1000 gms	1000 gms

Dissolve the dyes in boiling water with urea. Cool to room temperature. Add Alginate thickening and Resist Salt. Add Alkali just prior to printing.

Print the cloth with above paste. Dry steam for 15-20 mins. in Star Ager of 5-7 mins. in continuous Ager at 100-102°C.

Give cold and hot wash with water. Soap at boiling temperature with good washing off agent. Again give hot wash and cold wash as required.

Key to Abbreviations :

- L - Low • M - Medium • H - High • S - Suitable • LS - Less Suitable • NS - Not Suitable
- G - Good • F - Fair • P - Poor

(The information given is accurate to the best of our knowledge without guarantee)

PATTERN

Dyeing on Cotton	REACTIVE VINYL SULPHONE BASE Product Name C.I. No.	General Properties					
		Solubility g/l at 30		Solubility			
		Straight	30 pts/1000 C. Salt	Substactivity	Exhaust	Patch batch Silicate	Discharge ability
2% Shade							
	Yellow FG (Yellow 42)	100	60	L	LS	S	G
	Yellow GR 150% (Yellow 15)	120	80	H	S	S	G
	G. Yellow HRNL (Orange 107)	100	80	H	S	S	G
	G. Yellow R (Yellow 77)	100	80	H	LS	S	G
	Yellow H7GL (Yellow 185)	100	80	H	S	S	S
	Orange 2R (Orange 7)	100	80	H	S	S	F
	Orange 3R (Orange 16)	80	40	H	S	NS	G
	Orange SR	100	80	H	S	S	G
	Red 5B (Red 35)	80	40	L	LS	S	G
	Red BS (Red 111)	100	80	H	S	NS	P

Fastness Properties										Notes
Light		Washing		Chlorinated Water 20 mg/ISO 105 E03	Perspiration-ISO 105-E04					
ISO 105 B02	ISO 105 C03	Effect	Stain		Alkaline		Acidic			
1/6	1/1				Effect	Stain	Effect	Stain		
3	3-4	4	4	2	4	4	3-4	4		Dischargeable Lemon Yellow Dye
3-4	4	4	4-5		4-5	4	4	4-5		Useful Yellow Dischargeable
4	5	4	4	2-3	4-5	4-5	4-5	4-5		Good Light fatness
3	3-4	4	4	2	3	3	3	3		Economical Dye
S	S	3	3-4	4-5	4-5	3-4	4	3		Important Trichromatic component
3	3-4	4	4-5	2	4	4	3-4	3-4		Economical basis for all bight oranges
3-4	4-5	4	4-5	3	4-5	5	3-4	3-4		Useful basis for all shades
3	3	4	4-5	3	4-5	5	3-4	3-4		Useful basis for all shades
3-4	4	4	4	3	4-5	5	3	4		Important trichromat component
3	4	4-4	4-5	3	4-5	4-5	4	3		Economical Red Dye for Deep Shade

Dyeing on Cotton	REACTIVE VINYL SULPHONE BASE Product Name C.I. No.	General Properties					
		Solubility g/l at 30		Solubility			
		Straight	30 pts/1000 C. Salt	Substactivity	Exhaust	Patch batch Silicate	Discharge ability
2% Shade							
	Red RB (Red 198)	100	100	H	S	S	F
	Brill. Red BB (Red 31)	150	100	H	S	S	G
	Deep Red GLS	150	120	H	S	S	G
	Violet 5R (Violet 5)	100	80	H	S	S	P
	Brill. Blue BB (Blue 220)	120	90	H	S	S	G
	Turq. Blue G 266% (Blue 21)	80	30	H	S	S	P
	Turq. Blue H2GP (Blue 21)	80	30	H	S	S	P
	Blue R conc (Blue 19)	100	50	H	S	S	F
	Blue 3R H/C (Blue 28)	100	80	S	S	S	G
	Navy GRB	120	100	G	S	S	G

Fastness Properties									Notes
Light		Washing		Chlorinated Water 20 mg/ISO 105 E03	Perspiration-ISO 105-E04				
ISO 105 B02	ISO 105 C03				Alkaline	Acidic			
1/6	1/1	Effect	Stain		Effect	Stain	Effect	Stain	
3	3	4-5	4-5	2	4	4-5	4-5	4-5	Brilliant Red
3	3-4	4	4	2-3	4	4-5	4-5	4-5	Dischargeable Red Dye
-	4	4-5	4-5	3	4-5	5	4	4-5	All round properties
4	4-5	5	5	4	4-5	5	4-5	5	Only violet dye
4	4-5	4-5		2-3	4-5	4-5	4-5	5	Brilliant Blue Shade
4	5	4-5	3	2-3	5	4-5	6	4-5	For Bright Blue & Greens. Need higher dyeing temperature.
4	5	4-5	3	2-3	5	4-5	6	4-5	For Bright Blue & Greens. Need higher dyeing temperature.
5	5-6	4-5	4-5	3-4	4-5	5	5	5	For Bright Blue & Royal Blue. To consider salt solubility in dyeing.
5	5-6	3-4	5	3-4	3-4	4-5	4	4-5	Useful blue for Pad-Silicate Method
-	3	4-5	4-5	3	5	5	5	5	Useful Navy Shade

Dyeing on Cotton	REACTIVE VINYL SULPHONE BASE Product Name C.I. No.	General Properties					
		Solubility g/l at 30		Solubility			
		Straight	30 pts/1000 C. Salt	Substactivity	Exhaust	Patch batch Silicate	Discharge ability
2% Shade							
	Navy Blue GG (Blue 203)	100	80	H	S	S	G
	Black RL (Black 31)	100	60	H	S	S	F
	Black B 133% (Black 5)	100	100	H	S	S	G
	Black B 150% (Black 5)	100	100	H	S	S	G
	Black SRN	100	100	H	S	S	G
	Black SR2N	150	120	H	S	S	G

Fastness Properties										Notes
Light		Washing		Chlorinated Water 20 mg/ISO 105 E03	Perspiration-ISO 105-E04					
ISO 105 B02	ISO 105 C03	Effect	Stain		Alkaline		Acidic			
1/6	1/1				Effect	Stain	Effect	Stain		
4-5	4-5	4-5	4	4	4-5	4-5	4-5	5	Good Light Fastness	
4	5	4	4	3	3-4	5	3-4	5	Good Light Fastness - Use for Grey Shade	
3-4	4	4	4-5	3	5	-	-	-	Versatile product for all purpose from medium to extra deep shades	
-	4	4	4-5	3	5	4	5	4	Versatile product for all purpose from light medium to extra deep shades	
-	4	4	4	4-5	4	4-5	4	5	All round properties	
-	4	4	4	4-5	4	4-5	4	4-5	All round properties	

Dyeing on Cotton	REACTIVE HIGH EXHAUST "HE" Dyes	Solubility g/l at 30		Dyeing Properties		Light	
		Straight	With 30 gpl C-Salt	Substantivity / Reactivity	Fixation Temp. C	ISO 105 B02	ISO 105 X04
2% Shade	Product Name C.I. No.					1/26	1/1
	Yellow HE6G (Yellow 135)	45	45	H/H	80	3-4	4
	Yellow HE4G (Yellow 81)	25	20	H/H	80	4	4-5
	G. Yellow HER (Yellow 84A)	70	60	H/H	80	4	4-5
	G. Yellow HE4R (Yellow 84)	70	60	H/H	80	4	5
	Red HE3B (Red 120)	85	75	H/H	80	4	5
	Red HE7B (Red 141)	150	150	H/H	80	3	4-5
	Red HE8B (Red 152)	160	160	H/H	80	3-4	4-5
	Blue HEGN 125% (Blue 198)	70	20	H/H	80	5	5-6
	Blue HERD (Blue 160)	80	60	H/H	80	5	5-6
	Navy Blue HER (Blue 171)	60	60	H/H	80	3-4	4

Fastness to Mercerisation	Washing		Bleaching		Alkaline Perspiration		Notes	
	ISO 105 X04	ISO 105 C03	Chlorinated Water 20 mg/ISO 105 E03	Hydrogen Peroxide	ISO 105-E04	ISO 105-E04		
Effect	Stain	Effect	Stain	Effect	Stain	Effect	Stain	<p>Useful basis for the bright greenish yellows & green</p> <p>Economical yellow for greens</p> <p>Economical golden yellow Components</p> <p>Important trichromatic components</p> <p>Good all round fastness</p> <p>Important trichromatic components</p> <p>Economical dye for Red & Maroons</p> <p>For bright Blue & Greens</p> <p>High Light fastness in pale shades</p> <p>Economical trichromatic components</p>
4-5	4-5	4	5	1	2	5	4	
4-5	4-5	4-5	5	1-2	4-5	4-5	4-5	
4-5	4-5	5	5	2-3	4-5	5	4-5	
5	4-5	5	5	2-3	4-5	5	4-5	
4-5	4-5	5	5	1	4	4	4-5	
3-4	4-5	4-5	4-5	3	4-5	4-5	5	
4-5	2-3	4-5	2-3	3-4	4-5	4-5	5	
3-4	3-4	5	5	2-3	4-5	5	4-5	
5	4-5	5	5	3	4-5	4-5	4	
3-4	4-5	4-5	4-5	1-2	4	4-5	4	

Dyeing on Cotton	REACTIVE HIGH EXHAUST "HE" Dyes Product Name C.I. No.	Solubility g/l at 30		Dyeing Properties		Light	
		Straight	With 30 gpl C-Salt	Substantivity / Reactivity	Fixation Temp. C	ISO 105 B02	ISO 105 X04
2% Shade						1/26	1/1
	Navy Blue HE2R (Blue 172)	70	60	H/H	80	3-4	4
	Green HE4B (Green 19A)	120	60	H/H	80	4	4-5

Fastness to Mercerisation		Washing		Bleaching		Alkaline Perspiration		Notes	
ISO 105 X04		ISO 105 C03		Chlorinated Water 20 mg/ISO 105 E03	Hydrogen Peroxide		ISO 105-E04		
Effect	Stain	Effect	Stain		Effect	Stain	Effect		Stain
4-5	3	4	2-3	2	3	3	4	5	For Navy Shades
4-5	4-5	4-5	4	1	4	4	4	4	Useful components for all shades

Dyeing on Cotton	2% Shade	REACTIVE EXHAUST BI-FUNCTIONAL "ME" Dyes Product Name C.I. No.	General Properties							
			Straight	With 30 gpl C-Salt	Substantivity	Optimum Dyg Temp	% Fixation	Exhaust Dyeing	Single Bath CPB	Pad dry Chem. pad steam
		Yellow ME4GL (Yellow 160A)	100	90	H	60	70	S	S	S
		G. Yellow MERL (Yellow 145)	100	90	H	60	70	S	S	S
		G. Yellow RR (Yellow 145A)	200	150	H	60	70	S	S	S
		Orange ME2R 150%	60	20	H	60	70	S	S	S
		Orange ME2RL (Orange 122)	60	10	H	60	70	S	S	S
		Red ME3BL (Red 194)	150	120	H	60	75	S	S	S
		Red ME4BL (Red 195)	90	70	H	60	75	S	S	S
		Red ME6BL (Red 250)	30	10	H	60	70	S	S	S
		Violet ME2RL	90	70	H	60	70	S	HS	HS
		Blue ME2RL (Blue 248)	120	120	H	60	75	S	HS	HS

Application Printing		Fastness Properties								Notes
Print Dry Steam	Print Dry pad steam	Light AATCC 16E 20AFU		Washing ISO 105-C03		Chlorinated Water 20 mg/ ISO 105 E03	Perspiration ISO 105-E04			
		0.1%	1.0%	Effect	Stain		Effect (Acid)	Effect (Alkaline)		
S	S	4	4-5	5	4-5	3-4	4	4	Useful product for Yellow & Greens	
S	S	4	4-5	5	4-5	3-4	4	4	Important Trichromatic Component	
-	-	4	4-5	4-5	5	3	4-5	5	Trichromy Component	
-	-	3	4	4	4-5	3	4-5	4	Useful Orange	
S	S	3	4	4	4	3	3	3	Highly Productive & Bright Orange	
-	-	2-3	3	4-5	4-5	3	4	4	Components For Bright Red Shades	
S	S	3	3-4	4-5	4-5	3-4	4-5	4-5	Important Trichromatic componet	
NS	NS	3	4	4	4	3-4	3-4	3-4	High Productive	
NS	NS	3	4	4	4	3-4	4-5	4	A Brilliant Violet Shade	
NS	NS	3	4	4	4	3-4	4	4	For Bright Blue Shade	

Dyeing on Cotton	REACTIVE DYES "P" & "H" Dyes	General Properties			
		Solubility gpl at 30°C	Substantivity	Reactivity	Light Fastness ISO 105 B02
2% Shade	Product Name C.I. No.				
	Yellow P6GS (Yellow 95)	50	L	M	5
	Yellow H4G (Yellow 18)	130	L	M	4-5
	Golden Yellow HR (Orange 12)	110	M	M	4
	Orange P2R (Orange 13)	150	M	M	4
	Red PB (Red 24)	150	L	M	4-5
	Red P3B (Red 45)	100	L	M	4
	Red P4BN (Red 45)	100	L	M	4
	Red H8B (Red 31)	80	H	L	3-4
	Magenta HB (Red 14)	80	M	L	3-4
	Purple H3R (Violet 1)	150	M	L	5

Fastness Properties			Alkaline Perspiration ISO 105-E04		Application			Notes
Washing ISO105-C03		Chlorinated water 20 mg/l ISO - 105 E03	Effect	Stain	Pad - Steam	Print - dry - Pad - Steam	Print - dry steam	
Effect	Stain							
5	5	3	5	4-5	S	S	S	
4-5	5	1	4	5	S	S	S	
5	5	3	-	-	S	S	S	
4-5	4-5	3	4-5	4	S	S	S	
4	4-5	3	5	5	S	S	S	
4	4-5	4	4-5	4-5	S	S	S	
4	4-5	4	4-5	4-5	S	S	S	
4	4	3	4	4	S	S	S	
4	4	1	4-5	3	S	S	S	
4-5	4-5	3	3	4	S	S	S	

Dyeing on Cotton	REACTIVE DYES "P" & "H" Dyes Product Name C.I. No.	General Properties			
		Solubility gpl at 30°C	Substantivity	Reactivity	Light Fastness ISO 105 B02
2% Shade					
	Blue 5RH (Blue 13)	120	M	L	4
	Navy P2R (Black 39)	120	M	M	5
	Blue P3R (Blue 49)	80	L	H	5
	Red Brown H4R (Brown 9)	80	M	L	3-4
	Black HN (Black 8)	40	L	M	4

Fastness Properties			Alkaline Perspiration ISO 105-E04		Application			Notes
Washing ISO105-C03		Chlorinated water 20 mg/lt ISO - 105 E03	Effect	Stain	Pad - Steam	Print - dry - Pad - Steam	Print - dry steam	
Effect	Stain							
4	4	1	4-5	4	S	S	S	
4-5	4-5	3	4-5	4-5	S	S	S	
4-5	5	2	5	5	S	S	S	
4	4	3-4	4-5	3-4	S	S	S	
4-5	5	3	4-5	3	S	S	S	



SWASTIK
CHEMICALS

Shed No 32, Gajanan Industrial Hub 2,
B/h. Benzo product Phase IV, Near Matrix Plaza, G.I.D.C., Vatva,
Ahmedabad- 382 445. (Gujarat) INDIA.

Mobile : +91 - 90811 14407 , 98790 14407
E-mail : swastikchemicals731@gmail.com