Greenville Colorants

Adifix HE Series

New Jersey Location

50 Page Road, Clifton, NJ 07012

Phone. 973.778.0122 • *Fax.* 973.778.1124

South Carolina Location

105 Wood Street, Greenville, SC 29611

Phone. 864.295.1170 • *Fax.* 864.295.5606

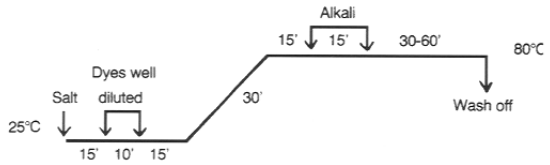
www.greenvillecolorants.com • *Customer Service.* 800.832.8985 *Fax.* 800.763.1001

Greenville Colorants

	Dye Name	Reactivity, Substantivity, Migration, Washing Off	Solubility G/L 50°c No Salt 50 G/L Salt	Fiber Staining @ 0.3% Depth Poly, Nylon, Wool, Acrylic	Suitability For High Temp One-Bath Dyeing 265°f	Discharge-ability Neutral Alkaline	Effect Metal Ions Iron 20 Ppm Copper 20 Ppm	Wash Test #2a Alteration Cotton Stain	Acid Perspiration Alteration Cotton Stain	Post Bleaching Chlorine Peroxide	Xenon Lightfastness Light Heavy
	4% **Adifix Yellow HE6G** Reactive Yellow 135	Mod High 5 3-4	70 50	5 3-4 1-2 3-4	FAIR	4 4	5 4-5	5 5	4-5 4-5	2-3 3	4 5
	4% **Adifix Yellow HE4R** Reactive Yellow 84	Mod High 4-5 3	100 100	4 3 2 4	POOR	3-4 3	4-5 4-5	5 5	4-5 4	4 4	5 5-6
	4% **Adifix Orange HER** Reactive Orange 84	Mod High 4-5 3-4	40 10	5 3-4 2-3 4	FAIR	2-3 2	5 2-3	4 4	3-4 4-5	4 4	3-4 5
	4% **Adifix Scarlet HE2G**	High High 5 3	140 80	4-5 1 1-2 5	GOOD	2-3 1-2	4-5 2	4 4-5	4 4	4 4-5	3 4-5
	4% **Adifix Scarlet HEA**	Mod High 4-5 3	130 100	4 2-3 2 4	POOR	3 2	4-5 3	4-5 4-5	4 4	3-4 4	4 5
	4% **Adifix Red HE3B** Reactive Red 120	Mod High 4-5 2-3	140 140	4-5 2-3 1 3	FAIR	1-2 1	4-5 3-4	4-5 3-4	3-4 3	2-3 4	4-5 4-6
	4% **Adifix Red HE7B** Reactive Red 141	Mod High 4 3	150 150	4-5 3-4 2 3-4	GOOD	2 2	4-5 3	4-5 4	4 4	3-4 4	4-5 5-6
	4% **Adifix Blue HERD** Reactive Blue 160	Mod High 5 3	100 100	4 3 2 4	FAIR	3 2-3	4-5 4-5	4-5 4-5	4 4	2 3-4	5 5-6
	4% **Adifix Blue HEGN 125%** Reactive Blue 198	Mod High 5 3	100 100	5 3-4 2 4	POOR	1 1	4-5G 5	5 4-5	5 4-5	3 3	5 5-6
	4% **Adifix Turquoise HA** Reactive Blue 71	Mod High 5 3-4	100 10	3 3 2 3	GOOD	3 2-3	5 5	5 4-5	5 4-5	3 3	4-5 5
	4% **Adifix Green HE3G**	Mod High 4-5 3	75 3	4 1-2 1-2 4-5	FAIR	3 2-3	4-5 3-4B	4-5 4	4-5 4-5	1 2	4 5-6
	4% **Adifix Green HE4BDA** Reactive Green 19	Mod High 3-4 3	120 120	4-5 4 2-3 4	GOOD	4-5 4	4-5 4D	5 4	4-5 5	2 4	4 5
	4% **Adifix Navy HER 150%** Reactive Blue 171	Mod High 4-5 3	100 100	4-5 4-5 2-3 4-5	Fair	3-4 3	5 5	4-5 3-4	4 4-5	3 4-5	- 4-5
	4% **Adifix Black HEGA**	Mod High 4 3	110 110	4-5 4 2-3 4	Fair	3-4 3	4-5 4-5	4-5 3-4	4 4-5	2-3 4	- 5

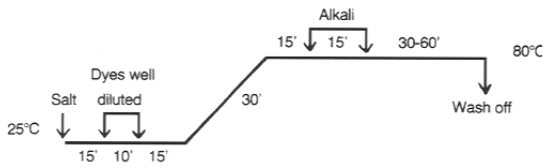
Exhaust Dyeing: Methods of ADIFIX HE DYES

Method 1.:



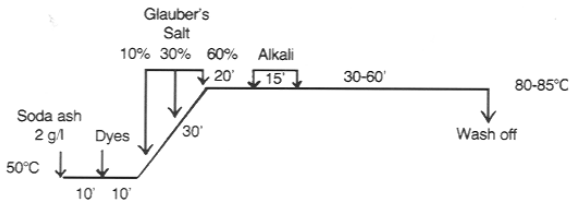
This is the general recommended method

Method 2.



For fully automatic machines of Package, Beam, Winch, Jet etc

Method 3: Special method for ADIFIX TURQUOISE HA



Salt and Alkali Requirements for Adifix HE Dyes

	Common Salt Or Glauber's Salt g/l		Alkali			
Adifix Dye %	Unmercerized Cotton	Mercerized Cotton Viscose Rayon	Soda Ash Only	Soda Ash +	Caustic Soda 50%	Time (min)
Up to 0.10	10	5	10	5	0.2	30
0.11-0.30	20	10	10	5	0.2	30
0.31-0.50	30	20	10	5	0.2	45
0.51-1.00	45	30	15	5	0.2	45
1.01-2.00	60	40	15	5	0.5	45
2.01-4.00	70	55	20	5	0.5	60
Above 4.01	90	65	20	5	0.5	60

Washing Off

It is essential to remove as much of the salt and alkali as possible prior to soaping, as the substantivity of ADIFIX HE dyes is a function of the electrolyte concentration.

Recommended Washing Off Method:

2-3 hot rinses @ 10 minutes each
Soaping Boil for 30 minutes using 1-2 g/l of soaping agent.
Hot rinse @ 70°C for 10 minutes.
Rinse until clear. Fixing and softening agents may be applied if required.

- For maximum wet fastness, an additional soaping may be necessary for heavy Scarlet and Turquoise shades.

Dyeing characteristics of ADIFIX HE DYES

Reactivity

The classification was made on the basis of an amount of alkali (soda ash) to give maximum strength in the following dyeing conditions:

Material:	Unmercerized Cotton
Depth of shade:	1/1 standard depth
Liquor Ratio:	1:20
Glauber's Salt:	60 g/l
Alkali (soda ash):	5-20 g/l
Dyeing Temp:	80°C
Dyeing Time:	60 minutes after alkali was added

Assessment:

Alkali to give Max Strength (pH)	Group	Classification
Below 10.9	I	High
11.0-11.5	II	Moderate
Above 11.6	III	Low

Substantivity

The substantivity classification was made on the following basis of a dye up-take before the addition of alkali in the following conditions:

Material:	Unmercerized Cotton
Depth of shade:	1/1 standard depth
Liquor Ratio:	1:20
Glauber's Salt:	60 g/l
Alkali (soda ash):	5-20 g/l
Dyeing Temp:	80°C
Dyeing Time:	30 minutes

Assessment:

Dye Up-take	Group	Classification
Above 50%	A	High
50%-30%	B	Moderate
Below 30%	C	Low

Migration Property

The Migration test was carried out using the following procedure:
A test fabric which was adsorbed with dyes by primary exhaustion was treated together with a secondary white fabric in a bath at a liquor ratio of 1:20 containing 60g/l Glauber's Salt at 80°C for 20 minutes, followed by a fixation with an addition of 20 g/l Soda Ash.

Depth of shade:	30% owf
Liquor Ratio:	1:20
Glauber's Salt:	60 g/l
Dyeing Temp:	80°C
Dyeing Time:	60 minutes after alkali was added

Assessment:

A difference in depth between the test fabric originally absorbed with dyes and the secondary fabric was assessed by means of the gray scale for assessing change in color.

Washing Off Property

10g unmercerized cotton was dyed at 6% owf by normal method. The dyed sample was washed in the following sequences to measure the amount of unfixed dyes removed from each step.

30°C 5 min water
70°C 5 min Hot water
85°C 5 min Soaping (neutral anionic surfactant, 3 g/l)
70°C 5 min hot water
30°C 5 min water

Assessment:

The washing off property was classified into five classes based on the ratio of the amount of unfixed dyes removed at steps 1 and 2 to the total amount removed.

Classification	Amount removed at steps 1 and 2 / Total amount removed x 100 = %
5	91%=
4	81-90%
3	71-80%
2	61-70%
1	60% or less

Solubility

Without Auxiliary

A predetermined amount of dye was dissolved in hot water (85°C) and after cooling down to 50°C the dye solution was passed through filter paper. The solubility was measured based on the presence or absence of residue on the filter paper.

With Auxiliary

A predetermined amount of dye and 50g/l Glauber' was dissolved in hot water (85°C) and after cooling down to 50°C. The dye solution was passed through filter paper. The solubility was measured based on the presence or absence of residue on the filter paper.

Staining On Other Fibers

Multifiber fabric was dyed under the following conditions and the degree of staining on each fiber was assessed by means of the gray scale for assessing staining.

Depth of shade:	3.0% owf
Liquor Ratio:	1:20
Glauber's Salt:	60 g/l
Alkali (soda ash):	20 g/l
Dyeing Temp:	80°C
Dyeing Time:	60 minutes after alkali was added

Soaping

Washing Agent:	Neutral Anionic detergent
Temp and Time:	100°C @ 5 min.

Effect of Metallic Ions

The effect of metallic ions on the shade of depth was examined by adding these ions to the dye bath.

Material:	Unmercerized Cotton
Depth of shade:	3.0% owf
Liquor Ratio:	1:20
Glauber's Salt:	60 g/l
Alkali (soda ash):	20 g/l
Metallic Ions:	FE^{++} ferrous chloride (20 ppm as Fe^{++}) Cu^{++} copper sulfate (20 ppm as Cu^{++})
Dyeing Temp:	80°C
Dyeing Time:	60 minutes after alkali was added

Assessment

The difference in shade and yield between the samples dyed with and without addition of metallic ions was judged by means of AATCC gray scale for assessing change in color.

Dischargeability

Discharge ability varies with the depth of ground dyeing and recipe of white discharge. The discharge test was made on cotton fabrics dyes at 3.0% owf by the following recipe:

Recipe of discharge paste:		
Composition/Method	**Neutral**	**Alkaline**
Decrolin	200	200
Soda ash	-	50
Water	250	200
Thickener	550	550
Total	**1000 parts**	**1000 parts**

After printing, the fabrics were dried at 60°C, steamed at 100°C for 5-8 minutes, followed by rinsing and soaping.

**Disclaimer:

Seller assumes no obligation or liability, whether in contract, tort, negligence, strict liability or misrepresentation for any advice or assistance given Buyer in relation to the merchandise, such advice or assistance, written or oral, being given without charge and accepted by Buyer's request and at his sole and exclusive risk. Samples will be made available at Buyer's request. Buyers are urged to make their own tests of any product described herein or of any proposed application with respect to which advice or assistance from Seller may be sought.

The fastness properties of the enclosed dyeings are dependent upon the conditions to which they are subjected, and may vary considerably if the dyed fabric is treated with additional chemicals such as fixing or finishing agents. Consequently, the dyed/finished fabric should be tested to assure that the fastness properties meet the necessary requirement. Not all shades can be produced with desired fastness properties. This point should be carefully considered before putting shades into production. The information given is based on work done in our laboratories; consideration should be given to possible variations under local conditions.