

## INDUSTRIES

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### TECHNICAL SPECIFICATION OF HE DYES

HE Dyes	GENERAL PROPERTIES					FASTNESS PROPERTIES									
	SOLUBILITY PARTS/ 100 AT 30 C			DYEING PROPERTIES		Fixation Temperature® (Exhaust Dyeing)	Light Day Light			WASHING		HYPOCHLORITE (EFFECT STAIN)	BLEACHING		ALKALINE PERSPIRATION
	Strainingthe	30PTS/1000 Commonsalt		Affinity	Reactivity		1/25	1/1	2/1	ISO-3 EFFECT STAIN	ISO-4 EFFECT STAIN		HYDROGEN PEROXIDE	SODA BOIL (EFFECT STAIN)	
Product Name C.I. Reactive															
Yellow HE6G #Yellow 135	45	45	H	3	80	3-4	4-1	4-1	4 5	4 5	1	2 5	4 4-5	4 4	
Yellow HE4G #Yellow 81	25	20	H	5	80	5-1	5-6	5-6	5 5	4-5 5	1-2	4-5 4-5	4 4-5	4-5 4-5	
Yellow HE4R #Yellow 84	70	60	H	4-5	80	5-1	5-6	5-6	5 5	5 5	2-3	4-5 5	4 4-5	4-5 4-5	
G.Yellow HER #Yellow 84A	70	60	H	4-1	80	4-5	5-1	5	4-5 5	4-5 5	2-3	4-5 5	4 4-5	4-5 4-5	
Orange HER #Orange 84	35	5	H	4-5	80	3-1	3-4	4-1	4 5	4 5	4-5	4 4-5	3 3	4 4	
Orange HE2R #Orange 84A	100	5	H	4-5	80	3	3-4	4-1	4 5	4 5	4-5	4 4-5	3 3	4 4	
Brill Red HE3B #Red 120	80	75	H	4-5	80	4-1	5-1	5-1	5 5	5 5	1	4 4	3-4 3	4-5 5	
Brill Red HE7B #Red 141	150	150	H	4	80	3-1	4-5	4-5	5 5	4-5 4-5	3-1	4-5 4-5	3-4 4	5 4-5	
Red HE8B # Red 152	160	160	H	5	80	3-4	4-5	4-5	5 3	4-5 2-3	3-4	4-5 4-5	3-4 4	5 4-5	
Blue HERD # Blue 160	90	80	H	4	80	5-6	5-6	5-6	4-5 4-5	4-5 4-5	1-1	3 4-5	3-4 4-5	4-5 4	
Navy Blue HER #Blue 171	60	60	H	4	80	3-4	4-1	4-1	5 4-5	4-5 4-5	1-2	4 4-5	3-4 3	4 4-5	

Green HE4B #Green 19A	130	60	H	4.-5	80	3.-4	4.-1	4.-5	5 4-5	4-5 4-5	1	2.-3 4-5	4 3-4	4.-5 4
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## REACTIVE DYES - HE (HIGH EXHAUST)

These Reactive Dyes are based on monochlorotrizinyl reactive system and are called High Exhaust Dyes i.e. they give very high degree of exhaustion at high temperature. These dyes are less sensitive to the variation in dyeing parameters like liquor ratio, temperature, salt concentration, time etc. & are used in the exhaust dyeing of Knitwear, Cellulosic, Component of PES / Cellulosic Blends etc.

### Technical Data

#### ADIACTIVE 'HE' DYES

Adiactive 'HE' dyes are specially designed only for applicable by exhaust dyeing methods. The various methods are as under :

#### (A) (Winch, Jet, Package and beam dyeing)

- (i) **Salt addition in portions :**  
This method is recommended for non-circulating liquor machines.
- (ii) **Salt addition at start :**  
This method is recommended for machines with liquor circulation.
- (iii) **Salt and at alkali addition at start :**  
This method is recommended for machines with liquor circulations for unmercerised cotton.
- (iv) **Isothermal Method :**

#### (B) Exhaust dyeing with jigger machines.

**(C)** Exhaust dyeing at cotton-polyester blend by one bath two stage method.

**(D)** Garment dyeing with Rotary drum machines.

The illustrated shades of Adiaactive 'HE' dyes in this shade card are dyed by following method.

### Dyeing Method :

The dyebath is set at 40 °C with dye solution and carry out dyeing for 10 min. Add half amount of salt and raise temperature to 60 °C in 15 mts. Then add remaining half amount of salt and raise temperature to 80-85 °c in further 15 mts. continue dyeing for more 15 mts. at same temperature. Now add a half amount of Soda ash and continue dyeing at 80-85 °C for 15 mts. then add remaining half amount of Soda ash and continue dyeing at same temperature for further 45-60 mts. and wash.

**Salt & Alkali requirements : M : L : R :: 1 : 20**

<b><i>Depth od Shade</i></b>	<b><i>Salt gms /l</i></b>	<b><i>Soda ash gms /l</i></b>
<b>Below 0.5 %</b>	<b>30</b>	<b>10</b>
<b>0.5 % - 1.0 %</b>	<b>45</b>	<b>15</b>
<b>1.0 % - 2.0 %</b>	<b>60</b>	<b>15</b>
<b>2.0 % - 4.0 %</b>	<b>70</b>	<b>20</b>



## HIGH EXHAUST DYES (HE DYES)



Product Group - Reactive Dyes  
Chemical Class - Bis-Monochlorotriazine  
Commercial Physical Form - Powder  
Commercial Name – HE Dyes

### Product Profile & General Properties:

HE dyes are widely used for exhaust dyeing of knitted goods in automated batch wise dyeing machines, the range comprises the entire shade gamut with brilliant shades and can be applied with salt at start process. Their all round color fastness properties and consistency in build up make them an ideal choice for cotton coloration.

### HE Dyes (High Exhaust Dyes)

Note: Click on Product name for Technical data sheet, Dyeing Properties, Fastness Property & Other details.

C.I. Numbers	Products Name	Shade Card
Reactive Yellow 81	<a href="#">Golden Yellow HE4G</a>	
Reactive Yellow 84	<a href="#">Golden Yellow HE4R</a>	
Reactive Orange 84A	<a href="#">Golden Yellow HER</a>	
Reactive Red 152	<a href="#">Red HE8B</a>	

## HE DYES : Golden Yellow HE4G



TECHNICAL DATA SHEET

**Product Name**

**Golden Yellow HE4G**

**C.I Number**

Reactive Yellow 81

0.4 %



4.0 %



**GENERAL PROPERTIES**

**Solubility Parts/1000**

Temperature

30°C

Straight

25

30 Pts/1000 common salt

20

**Dyeing Properties**

Substainivity

H

Reactivity

5

Fixation Temperature  
(Exhaust Dyeing)

80°C

**FASTNESS PROPERTIES**

**Light / Day Light**

1 -- 25

5

1 -- 1

5 - 6

2 -- 1

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**Washing**

**I.S.O.3**

Effect

5

Stain

5

**I.S.O.4**

Effect

4 - 5

Stain

5

**Bleaching**

Hydrochloride

1 - 2

**Hydrogen Peroxide**

Effect 4 - 5

Stain 4 - 5

**Soda Boil**

Effect 4

Stain 4 - 5

**Alkaline Perspiration**

Effect 4 - 5

Stain 4 - 5

**HE DYES : Golden Yellow HE4R**



**TECHNICAL DATA SHEET**

**Product Name**

**Golden Yellow HE4R**

**C.I. Number**

Reactive Yellow 84

0.4 %



4.0 %



**GENERAL PROPERTIES**

**Solubility Parts/1000**

Temperature 30°C

Straight 70

30 Pts/1000 common salt 60

**Dyeing Properties**

Substainivity H

Reactivity 4 - 5

Fixation Temperature 80°C

(Exhaust Dyeing)

**FASTNESS PROPERTIES**

**Light / Day Light**

1 -- 25	5
1 -- 1	5 - 6
2 -- 1	5 - 6

**Washing**

**I.S.O.3**

Effect	5
Stain	5

**I.S.O.4**

Effect	5
Stain	5

**Bleaching**

Hydrochloride	2 - 3
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**Hydrogen Peroxide**

Effect	4 - 5
Stain	5

**Soda Boil**

Effect	4
Stain	4 - 5

**Alkaline Perspiration**

Effect	4 - 5
Stain	4 - 5





**TECHNICAL DATA SHEET**

**Product Name**

**Golden Yellow HER**

**C.I. Number**

Reactive Orange 84A

0.4 %



4.0 %



**GENERAL PROPERTIES**

**Solubility Parts/1000**

Temperature

30°C

Straight

35

30 Pts/1000 common salt

5

**Dyeing Properties**

Substainivity

H

Reactivity

4 - 5

Fixation Temperature  
(Exhaust Dyeing)

80°C

**FASTNESS PROPERTIES**

**Light / Day Light**

1 -- 25

3

1 -- 1

3 - 4

2 -- 1

4

**Washing**

**I.S.O.3**

Effect

4

Stain

5

**I.S.O.4**

Effect

4

Stain

5

**Bleaching**

Hydrochloride 4 - 5

**Hydrogen Peroxide**

Effect 4

Stain 4 - 5

**Soda Boil**

Effect 3 W Y

Stain 3

**Alkaline Perspiration**

Effect 4 W Y

Stain 4

**HE DYES : Red HE8B**



**TECHNICAL DATA SHEET**

**Product Name**

**Red HE8B**

**C.I. Number**

Reactive Red 152

0.4 %



4.0 %



**GENERAL PROPERTIES**

**Solubility Parts/1000**

Temperature 30°C

Straight 160

30 Pts/1000 common salt 160

**Dyeing Properties**

Substanivity	H
Reactivity	5
Fixation Temprature (Exhaust Dyeing)	80°C

### **FASTNESS PROPERTIES**

#### **Light / Day Light**

1 -- 25	3 - 4
1 -- 1	4 - 5
2 -- 1	4 - 5

#### **Washing**

##### **I.S.O.3**

Effect	5
Stain	3

##### **I.S.O.4**

Effect	4 - 5
Stain	2 - 3

#### **Bleaching**

Hydrochloride	3 - 4 Bl
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#### **Hydrogen Peroxide**

Effect	4 - 5
Stain	4 - 5

#### **Soda Boil**

Effect	3 - 4
Stain	4

#### **Alkaline Perspiration**

Effect	5
Stain	4 - 5

