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 **YORKSHIRE**  
Colour strength worldwide



ISO 9002 : 1987  
Certificate No. FM 21142

**ETAD**

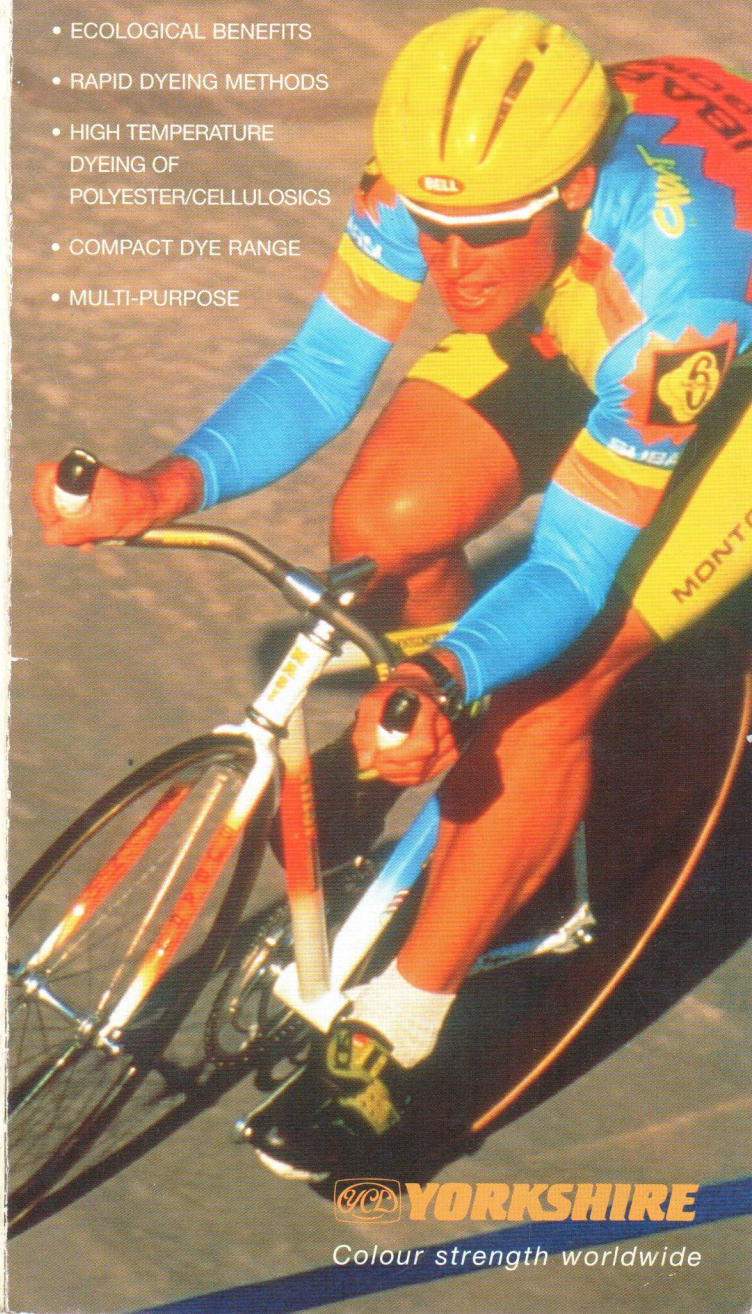



**BENZANIL**

D I R E C T D Y E S

*For Single - bath High Temperature  
Dyeing of Polyester/Cellulosics*

- ECOLOGICAL BENEFITS
- RAPID DYEING METHODS
- HIGH TEMPERATURE  
DYEING OF  
POLYESTER/CELLULOSICS
- COMPACT DYE RANGE
- MULTI-PURPOSE



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## Explanation of tables

<b>Dye</b>	The <b>Benzanil</b> name is given
<b>SDC Class</b>	Class A "self-levelling" Class B "salt-controllable" Class C "temperature and salt controllable"
<b>Solubility at 95°C</b>	The solubility of each dye at 95°C is given
<b>Stability at pH 10</b>	The stability of each dye to an alkaline dyebath of pH 10 is given.  ✓ stable X unstable
<b>Stability to Peroxide</b>	The suitability of the dyes for a simultaneous dyeing and bleaching process is given.  ✓ suitable X unsuitable
<b>Fastness Properties</b>	All the fastness tests are based on the following standard test methods:  a) Light (Daylight) B01 b) Washing C06 B2S 30 minutes at 50°C (122°F) c) Perspiration E04 pH 8.0 4 hours at 37°C (98°F)

All tests have been carried out on dyed 100% cotton fabric that has been aftertreated in 2.0% Benzafix E893 for 20 minutes at 40°C at pH 5.

All tests have been carried out on Cotton dyed to the depths illustrated in this minifolder.

### ABBREVIATIONS

The abbreviations used in the tables are as follows:

CC change in colour  
SCo staining of cotton adjacent

**Health and Safety** The dyes in this minifolder comply with requirements of the German Consumer Goods Legislation 1994 in that they are not manufactured from nor should they undergo azo reductive cleavage to generate any of the 20 banned MAK listed amines.

In proper use, the copper-free Benzanil direct dyes will meet the requirements of the major ecological standards e.g., Öko-Tex 100. Those dyes which contain copper as part of the chromophore are marked with an asterisk\*.

For further information refer to publication P.104.

## Auxiliary selection

### Dyapol NS

- Extremely efficient anionic dispersing agent
- Effective over full temperature range of disperse dye application
- Effective minimisation or prevention of disperse dye crystallisation in incompletely exhausted liquors
- Extremely low foaming
- Recommended concentration 1ml/l

### Benzafix E893/DF

- Cationic fixing agents which will improve the wet fastness of direct dyes on cellulosic fibres
- Formaldehyde free/contains formaldehyde
- Can be applied from the pad-bath or by exhaust methods at 30-40°C for 20 minutes at pH 5
- Recommended concentrations are as follows:-

	Exhaustion	Padding
Pale shades	0.3-1.0%	3.5-10.0g/l
Medium shades	1.0-2.0%	10.0-20.0g/l
Dark shades	2.0-3.5%	20.0-35.0g/l

**N.B.** Where a formaldehyde-free product is required Benzafix E893 should be used.

### Serirez WF

- Modified DHDMEU reactant resin
- Extremely low formaldehyde levels on cured fabrics
- Suitable for flash curing and conventional curing ovens
- Recommended concentration 30-80g/l

### Catalyst WF

- Catalyst for flash curing of Serirez WF
- Recommended concentration 15% on weight of Serirez WF used
- Typical recipe: 60g/l Serirez WF  
15g/l Catalyst WF  
Padded: 60 seconds at 110°C  
Cured: 30 seconds at 180°C



## BENZANIL HIGH TEMPERATURE STABLE DIRECT DYES

This minifolder illustrates the **Benzanil** range of high temperature stable direct dyes for single bath dyeing of polyester/cellulosic blends at 120-130°C with Serilene disperse dyes. The **Benzanil** dyes are also suitable for application to 100% cotton and 100% viscose by conventional exhaust methods at 90-95°C.

### Dyeing Method

Set dyebath at 30-40°C; L:R 20:1

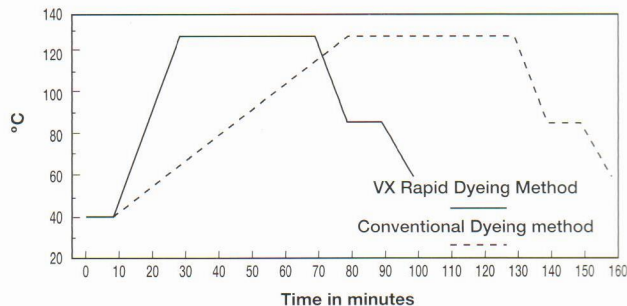
5-20g/l	Glauber's salt
1.0ml/l	Dyapol NS
x.x%	<b>Benzanil</b> direct dye (previously dissolved)
x.x%	<b>Serilene</b> disperse dye (previously dispersed)
pH 5.5*	with acetic acid
	(*pH 9.0 for Benzanil Black 2GC 600)

Run for 5-10 minutes at 40-50°C.  
Raise dyebath temperature to 130°C at 1-3°C/minute.  
Maintain at 130°C for 30-45 minutes depending on depth of shade.  
Cool to 85°C. For darker shades hold at 85°C for 10-20 minutes.  
Drop liquor.  
Rinse and aftertreat.

### Dyeing Profile

#### Serilene VX Rapid Dyeing Dyes

Using Serilene VX dyes with high temperature stable **Benzanil** direct dyes in a single bath one-stage dyeing method can result in significant reductions in dyeing cycle times. An example of this for a medium depth shade is illustrated in the graph below.



Details of the application of Serilene VX dyes and their advantages are given in publication P.102.

DYEINGS ON 100% COTTON	% DYE	SDC CLASS	SOLUBILITY AT 95°C	STABILITY AT pH 10
	1.0% Benzanil Yellow 3G	B	50g/l	✓
	1.0% Benzanil Yellow FC	B	65g/l	✓
	1.0% Benzanil Orange 2GL 125%	B	45g/l	✓
	1.0% Benzanil Scarlet F2G	B	40g/l	✓
	1.0% Benzanil Scarlet BL	B	60g/l	✓
	1.0% Benzanil Red BWS*	B	100g/l	✓
	1.0% Benzanil Pink FR	B	100g/l	✓
	1.0% Benzanil Rubine 2BL*	B	60g/l	✓
	1.0% Benzanil Blue GL	A	20g/l	✓
	1.0% Benzanil Turquoise Blue 5G	B	30g/l	✗
	2.0% Benzanil Grey CGL*	B	70g/l	✓
	2.0% Benzanil Black 2GC 600	B	30g/l	✓

## Fastness properties

% DYE	LIGHT B01 (DAYLIGHT)	STABILITY TO PEROXIDE	WASHING C06 B2S		PERSPIRATION E04 (pH 8.0)	
			CC	SC0	CC	SC0
1.0% Benzanil Yellow 3G	4-5	✓	5	4	5	5
1.0% Benzanil Yellow FC	6	✓	5	3-4	5	4-5
1.0% Benzanil Orange 2GL 125%	6	✓	5	3-4	5	4-5
1.0% Benzanil Scarlet F2G	3-4	✓	5	3-4	5	5
1.0% Benzanil Scarlet BL	4-5	✓	5	3-4	5	4-5
1.0% Benzanil Red BWS*	5	X	5	3-4	5	5
1.0% Benzanil Pink FR	2	✓	5	4	5	4-5
1.0% Benzanil Rubine 2BL*	5	X	5	3-4	5	4
1.0% Benzanil Blue GL	6	✓	5	4	5	5
1.0% Benzanil Turquoise Blue 5G	5	X	5	4	5	5
2.0% Benzanil Grey CGL*	6	X	5	4	5	5
2.0% Benzanil Black 2GC 600	4-5	X	5	3-4	5	4-5

## Recommended Trichromatic Combinations

### DIRECT DYES

Benzanil Yellow FC	Benzanil Orange 2GL 125%
Benzanil Scarlet F2G	Benzanil Scarlet BL
Benzanil Blue GL	Benzanil Blue GL

**Note** Benzanil Black 2GC 600 has to be applied at a minimum pH value of 9.0. If a single bath dyeing method is used at a pH of 9.0 it will be necessary to dye the polyester with Serilene Black SG 300, Serilene Black VX-2BL or Serilene Black ADS.

### DISPERSE DYES

#### RAPID DYEING

Serilene Yellow VX-2RLN
Serilene Red VX-RL 150
Serilene Blue VX-BLN

#### CONVENTIONAL DYEING

##### Pale-Medium Shades

Serilene Yellow 4GN-LS
Serilene Red BR-LS 200
Serilene Blue R-LS

##### Dark Shades

Serilene Yellow Brown 2RL 150
Serilene Rubine 2B-LS 150
Serilene Blue R-LS
Serilene Yellow Brown 2RL 150
Serilene Rubine 2B-LS 150
Serilene Navy Blue VX-BL

### ALKALINE DYEING - The ADVANCE Dyeing System

The Serilene ADS dyes are particularly recommended for dyeing under alkaline pH conditions up to pH 10. The range consists of:

Serilene Yellow ADS	Serilene Dark Red ADS
Serilene Orange ADS	Serilene Blue ADS
Serilene Yellow Brown ADS	Serilene Brilliant Blue ADS
Serilene Scarlet ADS	Serilene Navy Blue ADS
Serilene Red ADS	Serilene Black ADS

Further details of the Advance range of Serilene ADS alkali stable disperse dyes may be obtained from publication P.103 and minifolder ADSMF.1.

### AFTERTREATMENT

The wet fastness of Benzanil dyes may be improved by the application of a suitable aftertreatment, e.g.,

Cationic resin	Benzafix E893 for improving wet fastness (formaldehyde free)
Cationic resin	Benzafix DF for improving wet fastness
Resin finish	Serirez WF/Catalyst WF - easy care finish