

Illustration on cotton



**Characteristics**

|                |                  |
|----------------|------------------|
| C. I.          | Direct Brown 103 |
| CAS No.        | 70304-38-0       |
| Chemical class | Azodye           |

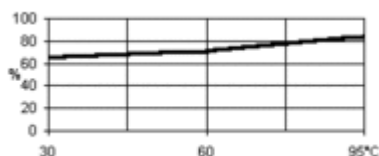
**Properties**

|                                   |     |
|-----------------------------------|-----|
| Solubility (g/l at 90°C)          | 30  |
| Dischargeability neutral/alkaline | 2/2 |
| Coverage dead cotton              | +   |
| Coverage strippy viscose          | -   |
| Dyeing at 120°C (30/60 min)       | +/+ |

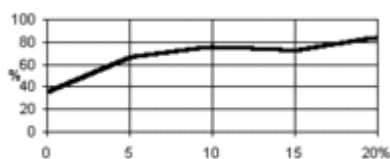
| Fastness                | cotton       |     |           |      |     | viscose      |     |           |     |      |     |     |
|-------------------------|--------------|-----|-----------|------|-----|--------------|-----|-----------|-----|------|-----|-----|
| standard depth          | 1/12         | 1/6 | 1/3       | 1/1  | 2/1 | 1/12         | 1/6 | 1/3       | 1/1 | 2/1  |     |     |
| Daylight                | 4            | 5   | 5-6       | 6    | 6-7 | 4-5          | 5   | 5-6       | 6   | 6-7  |     |     |
| Light-Xenotest          | 3-4          | 4-5 | 5         | 5-6  | 6   | 4-5          | 5   | 5-6       | 6   | 6-7  |     |     |
| standard depth 1/1      | aftertreated |     | untreated |      |     | aftertreated |     | untreated |     |      |     |     |
| Water                   | 4-5          | 4-5 | 5         | 4Y   | 3-4 | 4-5          | 4-5 | 4-5       | 4-5 | 4Y   | 3   | 4   |
| Washing 40°C            | 4R           | 4   | 5         | 3-4R | 2-3 | 5            | 4   | 4-5       | 5   | 3-4  | 4   | 5   |
| Washing 60°C            | 3-4R         | 3   | 4-5       | 3R   | 1   | 4-5          | 4R  | 4         | 4-5 | 3R   | 2   | 4-5 |
| Domestic laundering A1S | 4            | 4-5 | 4-5       | 4    | 1-2 | 4-5          | 4-5 | 4-5       | 4   | 4    | 1-2 | 4-5 |
| Perspiration acid       | 4-5          | 4-5 | 4-5       | 4Y   | 3   | 4-5          | 4Y  | 4-5       | 4-5 | 3-4Y | 2   | 4   |
| Perspiration alkaline   | 4-5          | 4-5 | 4-5       | 3-4Y | 2-3 | 4-5          | 4Y  | 4-5       | 4-5 | 3-4Y | 2   | 4-5 |

**Exhaustion curves**

Temperature effect

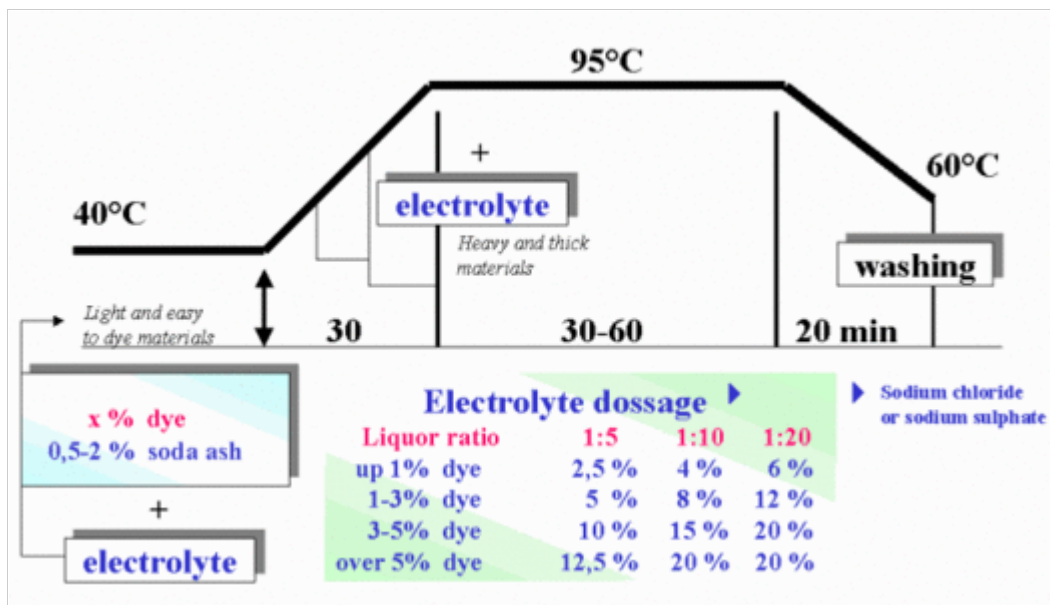


Influence of electrolyte

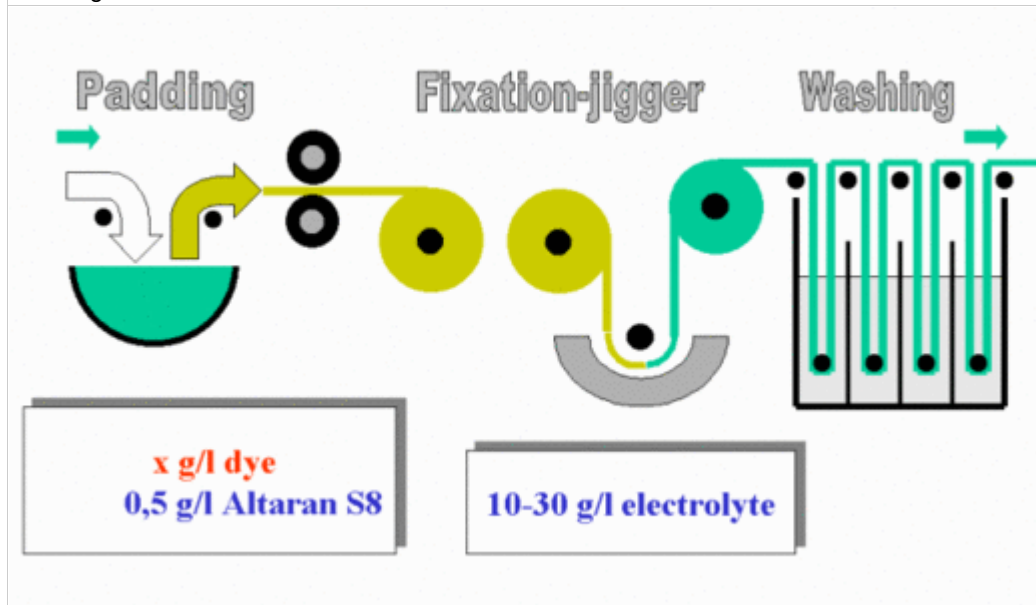


**Application possibilities**

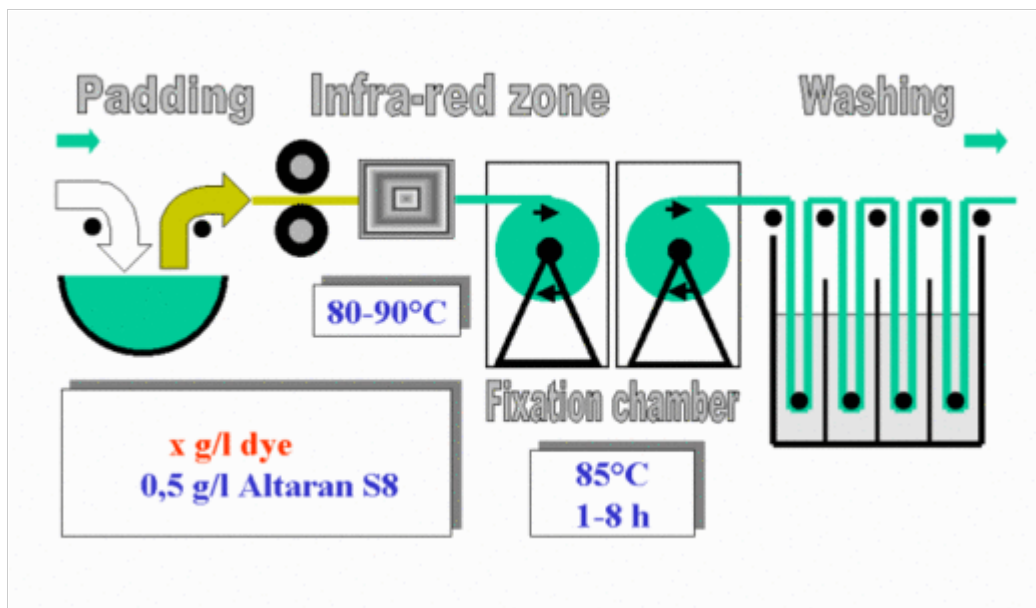
Exhaustion dyeing ●



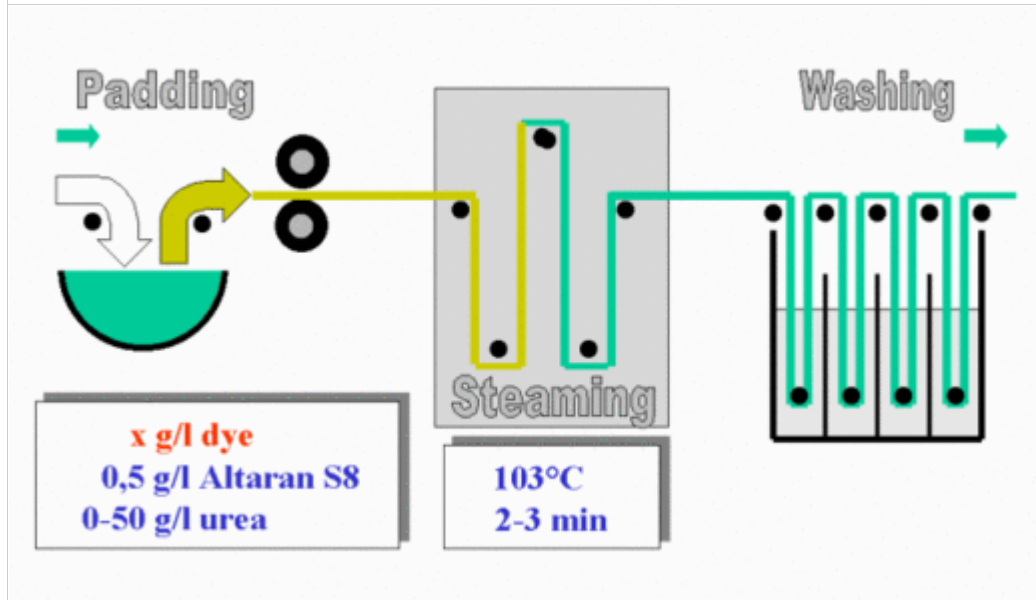
Pad - Jig ●



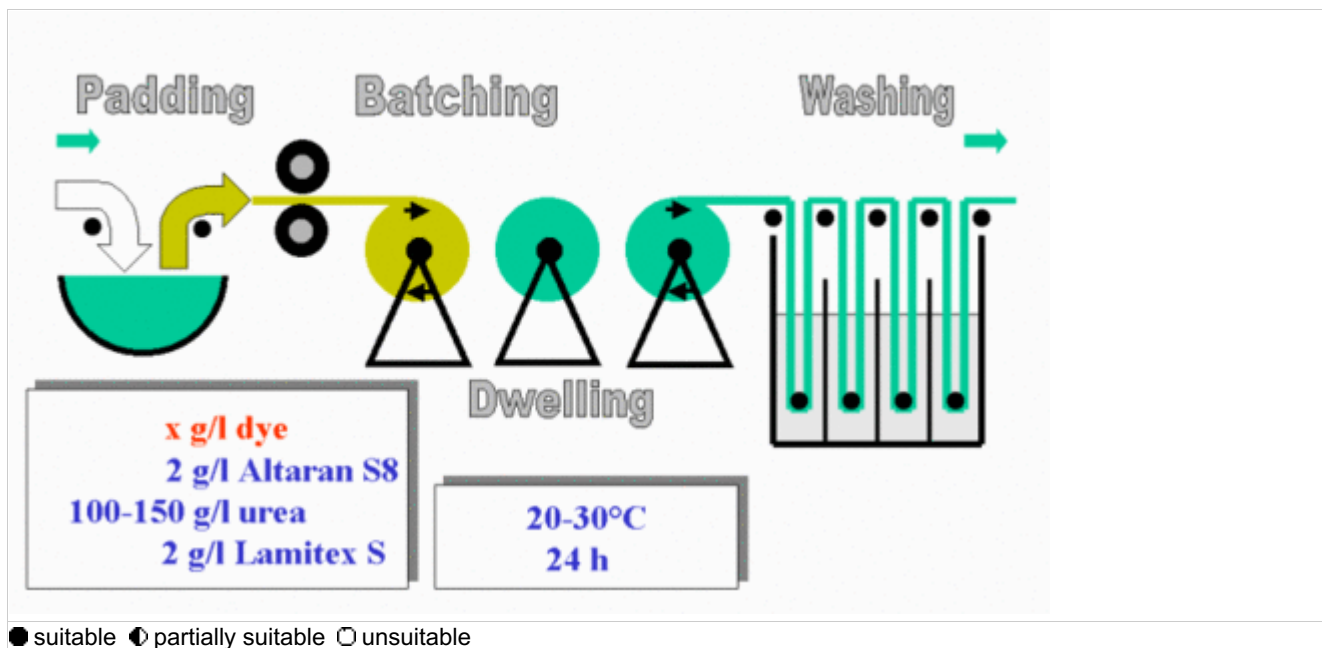
Pad - Roll ●



Pad - Steam ●



Pad - Batch ●



#### Testing methods

##### Solubility

ISO/CD 105 Z07-1993

The values express solubility in grams of dissolved dye in one litre of distilled water at 90°C.

##### Dischargeability

Dischargeability is expressed by the five-member scale where

5 means - the dye is very well dischargeable

4 means - the dye is well dischargeable

3 means - the dye is suitable for coloured discharge

2 means - the dye is poorly dischargeable

1 means - the dye is not dischargeable

The neutral and alkaline dischargeability of individual brands is assessed so that the dyed fabric is printed with discharge paste, then dried and steamed in a high-speed steamer for 7 min. at 100°C.

##### Dead and unripe cotton covering

The brands suitable for dead cotton covering are marked +. The coverage can be improved by the material pre-treatment by means of causticizing or dyeing at temperatures above 100°C.

##### Stripy viscose covering

The differences in stripy viscose rayon can be best covered with brands which are marked +.

##### Dyeing at temperatures above 100°C.

The dyes suitable for high temperature dyeing are marked +.

##### Fastness standards

Daylight ISO 105-B01-1994

Light Xenotest ISO 105-B02-1994

Water ISO 105-E01-1994

Washing ISO 105-C01-1989

Perspiration ISO 105-E04-1994

*The fastness figures in the tables mean:*

*fastness to light other fastness properties*

1 - very poor    1 - poor

2 - poor    2 - moderate

3 - moderate    3 - fairly good

4 - fairly good    4 - good

5 - good                      5 - very good  
 6 - very good  
 7 - excellent  
 8 - unsurpassed

*The letters indicate the following changes in shade:*

R - redder                  D - duller  
 Bl - bluer                  Br - brighter  
 Y - yellower               S - stronger  
 G - greener                W - weaker

*The numbers at individual dye fastness data mean:*

First number    - change in shade

Second number - staining on the undyed adjacent fabric which is of the same material as the tested sample

Third number    - staining on the undyed adjacent fabric

#### **Affinity dependance on the temperature**

The curve shows the dye quantity which exhausts from the bath onto the fibre after 60 min. of isothermal dyeing with addition 1% soda ash and 20% sodium sulphate calc. at the temperature shown on the horizontal axis.

#### **Electrolyte influence**

The curve shows the electrolyte concentration influence on dye exhaustion from the liquor. The values were obtained in the course of 60 min. of dyeing in a bath containing 1% soda ash and sodium sulphate calc., its quantity is given on the horizontal axis.