

# Lecture-6

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## Contents

What is  
Reactive Dye

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Reactive Dye

# Reactive Dye & its Properties

## Reactive Dye?

The dye which contains reactive group and this reactive group makes covalent bond with the fibre and acts as an integral part of the fibre is called reactive dye.

**Reactive dyes are so called** because this is the type of dye which has reactive group and that reactive group reacts chemically with fibre polymer molecule and forms covalent bond.

# Reactive Dye & its Properties

## Reactive Dye? (Continued)

This covalent bond is formed between the reactive group and **terminal amino (-NH<sub>2</sub>)** group of polyamide and wool fibre or between reactive group and **terminal hydroxyl (-OH)** group of cellulosic fibre polymer.

The strength of this covalent bond is more than the ionic bond, hydrogen bond and Vander Waals force of attraction. Thus, the reactive group becomes an integral part of the fibre. For these reasons the dyes are so called.

# Reactive Dye & its Properties (Continued)

## Properties of Reactive dyes

1. Reactive dyes are anionic dyes which can be used for dyeing of cellulosic (cotton, rayon, flax), protein (wool, silk) and polyamide (nylon) fibres.
2. Reactive dyes are soluble in water.
3. Reactive dyes are comparatively cheap.
4. Fixation of reactive dyes occurs in alkaline condition.
5. During dyeing the reactive group of this dye forms strong covalent bond with the fibre polymer and becomes an integral part of fibre.

# Reactive Dye & its Properties (Continued)

## Properties of Reactive dyes (Continued)

6. These dyes have very good light fastness with rating about 6.
7. Textile materials dyed with reactive dyes have very good wash fastness with rating about 4–5.
8. Reactive dyes give brighter shades and have moderate rubbing fastness.
9. Reactive dyes have good perspiration fastness with rating 4–5.
10. Dyeing method of reactive dye is easy and it requires less time and low temperature for dyeing.

# Reactive Dye & its Properties (Continued)

## Reasons for popularity of reactive dyes

- The reactive dyes show good washing fastness property
- The dyes have good light fastness property
- Dye are cheap in price
- These dyes gives brighter shades
- The dyeing method is very simple
- These dyes have good reproducibility
- Less temperature dyeing

