

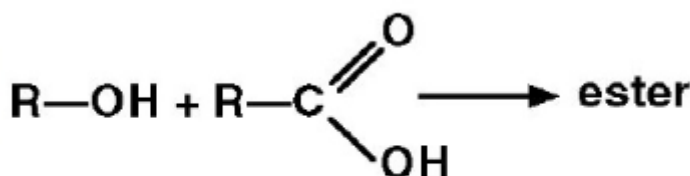
# Technical Tuesdays

REF:TT/ Nov 2012 / WK 1

## Polyester Dyeing

### Polyester Fibre:

- Polyester is a chemically manufactured fiber formed by the reaction of Polyethylene Terephthalate (PET) with terephthalic acid.  
Generally Disperse dyes using for Polyester.



(R is any hydrocarbon chemical group)

### Why we are selecting the disperse dye for dyeing of polyester?

- Synthetic fibres are prepared from man-made polymers by extrusion through spinnerets, either from the molten state or from a solution in an organic solvent.
- Polyester differs from natural fibers and rayon in moisture regain and difficulty of dyeing.
- Polyester exhibits a lower regain (0.4%) and does not possess a terminal functional group to which an ionic dye is attracted.

However, polyester can be dyed by disperse dyes; these are non-ionic dyes with finite, but very limited water solubility.

This class of dyes obtained its name from their application conditions, as they are applied as a very fine dispersion or suspension in water.

### Methods of dyeing of polyester:

- HTHP Method.
- Thermosol method.
- Carrier method.

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## Application of HTHP METHOD for Polyester dyeing:

- Most popular method of dyeing on commercial scale
  - Beam dyeing & Jet dyeing machines using for this HTHP method.
- In high temperature high pressure method dyeing is carried at 120-130 °c .



## HTHP Dyeing machine

### Recipe:

Disperse dye: Required -%  
Acetic acid/Citric Acid-1 gpl  
Ammonium sulphate-0.5 gpl  
Dispersing agent-1-2 gpl

- Start the dyeing at 50 °c
- Raise the temperature slowly to 120-130 °c
- Dye for 1 hour.
- Then rinse with Cold water, soaping at 60-70 °c, Rinse, dry followed by reduction clearing.

### Advantage of HTHP Dyeing method:

- Carrier not required.
- Dyeing time less than other method, due to rapid dye penetration at high temperature.
- It gives good dye exhaustion.
- It will give uniform dyeing.

To Be Contd....

“Have a happy week ahead”

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