

## Paper and pulp:

Paper is a lignocellulosic fibrous materials prepared by the chemically or mechanically from wood, fiber crops, waste paper

### **Raw materials :**

Paper is made up of the connected fibers. The fibers come from a number of source including cloth rags, cellulose fiber form plants and trees. The use of cloth in the process produces high-quality paper.

Other materials used in paper manufacture include bleaches and dyes, filler such as chalk, clay or titanium oxide and **sizing** such as gum and starch.

## Source of Raw materials :

Wood is the main source of Raw materials while non-woods such as bagasse, rice straw, wheat straw, reeds, bamboos and secondary fiber commonly known as recycled fiber(waste-paper) are the source of the rest commercial production.

### **Pulp:**

The pulp is the most important in gradient for papermaking. It is the major raw materials that is used in the largest fraction with other materials. On the basis of source medium the pulp is again categorized as,

- I) Wood pulp:** Source are hardwood trees and softwoods trees. Most of the paper are made from wood pulp. It is obtained by chemically or mechanically reducing wood fiber into a lignocellulosic fibrous materials.
- II) Non wood Pulp :** Source are straw, bamboo and esparto grass. This type of pulp consist of vegetable(cellulose) fiber with numerous additives to regulate the physical characteristics like printability.
- III) Recycled paper pulp :** it creates the one-third part of the total raw pulp.

## **Sizing Element:**

Starch and rosin sizing can be done both internally as well as externally. Rosin is used in internally sizing to provides the paper water-resistance and starch is used for surface sizing to control the absorption of printing ink and reduces the release the surface fibers.

## **Filler Agents:**

To enhance the paper opacity smoothness and color mineral, fiber are used. It improves the brightness and whiteness of the paper and provides more pop to printing paper.

## **Colouring Matters :**

They are used to provides different colours to the paper in the paper industry. To colour peper, soluble pigment are used. Fluroscent pigment are extensively used in the paper coating process to improves its appearance

# Pulp and Paper Manufacturing Process



Pulp and Paper Industry

# Quality of paper

Following things determine the quality of paper:

1. Raw materials paper
2. Paper surface
3. Clarity, opacity and Transparency
4. Sizing
5. Strength
6. Grammage and thickness
7. Grain
8. Ageing of Paper