

Pharmaceutical Packaging.

- It is a science of packaging and different doses form which deals with safe transportation storage, stability of product and its. Reach to the suitable customers in desired condition with minimum efforts in suitable time.
- Packaging is a science and technology in inclosing protecting products for destruction storage and sell and used.
- Packaging also referees to the process of design evelvotion and production of packing.
- Pharmaceutical packaging of the economical means providing protection identification information, convenience and stability of the product.

Type of packaging

- 1. Primary packaging**
- 2. Secondary packaging**
- 3. Tertiary packaging**

1. Primary packaging :-

- Primary packaging material is covered the drugs.
- The material the first envelope the product and hold it.

Example:- Strips, Blister, bottle, spray cane.

2. Secondary packaging:-

- They cover primary packaging.
- **Example:- Boxes.**

3. Tertiary packaging:-

- It is used for bulk handling and shipping.

- *Example:- Cartoon, Containers, finally used for transport.*
Components use for packaging.

1. Plastic
2. Rubber
3. Glass
4. Paper / Cardboard

1. Plastic:-

Plastic are group of substance of natural or artificial origins contain chiefly of the polymeric of high molecular weight that can be molded into shape by heat and presser.

- They are unbreakable.
- They are lite in Wight.
- It can be transported easily.

Advantages.

- Less weight then glass flexible.
- Verity of shape and size.
- They are unbreakable.

Disadvantages.

- Absorption permeability to moisture.
- Poor printing property.

2. Rubber:-

- Rubber is mainly used for constructed of closer for vials transfix bottle dropping bottle and many other type of container products.

Advantages:-

- Water absorption is low.

- Chipper them synthetic rubber.
- Good resistant to ozone water and sunlight good chemical and oil resistance.

Disadvantages:-

- Slowly decompress highly temperature oil and solvent resistance is not very good.
- They are very expensive.

3. Glass:-

- Glass has been widely used as the drug packaging material
- Glass has been molded in any shape, size, thickness.

Advantages:-

- They are transparent.
- They have a good protection for powder.
- Available in variety of shape size.

Disadvantages:-

- Glass is fragile so easily broken.

Paper and Cardboard.

They are suitable for small scale and bulk packaging and suitable for all types of pharmaceutical packaging.

Advantages:-

- Light weight
- Easily available.
- Flexible

Disadvantages:-

- May cause damage on transportation without external barriers.
- Most paper packs are not reusable.

Introduction to aerosol packaging.

Aerosol may be defined as a dispense phase system in a very fine solid particles or liquid droplets disperse in the gas which act as continuous phase these are also called pressurized dosage form.

Advantages of Aerosol

- Drugs can be given by oral inhalation.
- They sterility absence of air present oxidation of products.

Disadvantage of Aerosol

- Aerosol costly preparation.
- Some of propellants are very toxic the coating effect of highly propellants make cases this comfort on injured skin.

Classification of Aerosol

Space spray:-

- They are finally divided spray having particular size up to 50 μ .
- Space spraying is the dispersal of a liquid fog of insecticide into an outdoor area to kill adult insects.

Surface coats:

- These are also sprays but disperse particles are coarse with size up to 200 μ .