TABLETS

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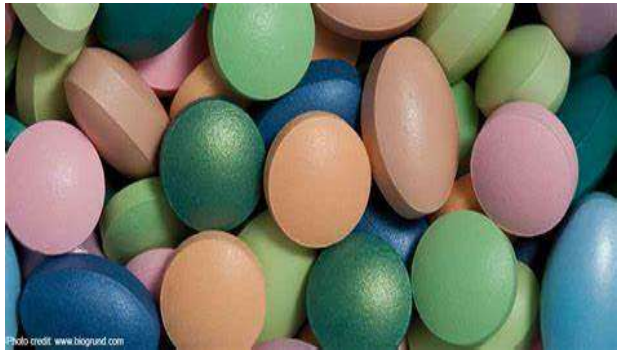
Introduction

- According to USP, Tablet is defined as a compressed solid dosage form containing medicaments with or without Excipients.
- According to the Indian Pharmacopoeia, Pharmaceutical tablets are solid, flat or biconvex dishes, unit dosage form, prepared by compressing a drug or a mixture of drugs, with or without diluents.

General Properties

- A tablet must be strong and hard to withstand mechanical shock during manufacturing, packing, shipping, dispensing and use.
- The drug content of the tablet must be bioavailable that is, the tablet must be able to release its content in a predictable and reproducible manner.
- The tablet must be chemically and physically stable to maintain its chemical and physical attributes during manufacture, storage, and use.
- The tablet should have elegant product identity which is free from any tablet defect.
- Tablets must be uniform in weight and in drug content.



Advantages

From patients stand point:

- They are easy to carry, easy to swallow and they are attractive in appearance.
- Unpleasant taste can be masked by sugar coating and they do not require any measurement of dose.
- Some of the tablets are divided into halves and quarters by drawing lines during manufacturing to facilitate breakage whenever a fractional dose is required.

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From the standpoint of manufacturer:

- An accurate amount of medicament, even if very small, can be incorporated.
- Tablets provide best combined properties of chemical, mechanical and microbiological stability of all the oral dosage forms.
- Since they are generally produced on a large scale, therefore, their cost of production is relatively low, hence economical.
- They are in general the easiest and cheapest to package and ship among all oral dosage forms.
- Some specialized tablets may be prepared for modified release profile of the drug.
- Product identification is potentially the simplest and cheapest requiring no additional processing steps when employing an embossed or monogrammed punch face.

Disadvantages

- Difficult to swallow in case of children and unconscious patients.
- Drugs with poor wetting, slow dissolution properties, optimum absorption high in GIT may be difficult to formulate or manufacture as a tablet that will still provide adequate or full drug bioavailability.
- Bitter testing drugs, drugs with an objectionable odor or drugs that are sensitive to oxygen may require encapsulation or coating. In such cases, capsule may offer the best and lowest cost.
- Some drugs resist compression into dense compacts, owing to amorphous nature, low density character.

Types of Tablets

(a) Tablets ingested orally:

- Compressed tablets
- Multiple compressed tablets
- Enteric coated tablets
- Sugar coated tablets
- Film coated tablets
- Chewable tablets

(b) Tablets used in the oral cavities:

- Buccal Tablets
- Sublingual tablets
- Lozenges
- Dental cones

(c) Tablets administered by other routes:

- Implantation tablets
- Vaginal tablets

(d) Tablets used to prepare solutions:

- Effervescent tablets
- Dispensing tablets
- Hypodermic tablets
- Tablet triturates

Tablets Ingested Orally

1. Compressed tablets

- These tablets are formed by compression and contain no special coating. They are made from powdered, crystalline or granular materials, alone or in combination with suitable excipients.
- These tablets contain water soluble drugs which after swallowing get disintegrated in the stomach and its drug contents are absorbed in the gastrointestinal tract and distributed in the whole body. e.g. Aspirin (Dispirin) paracetamol tablets (Crocin).

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2. **Multiple compressed tablets / Layered tablets**

- These are compressed tablets made by more than one compression cycle. Such tablets are prepared by compressing additional tablet granulation on a previously compressed granulation. The operation may be repeated to produce multilayered tablets of two or three layers.
- To avoid incompatibility, the ingredients of the formulation except the incompatible material are compressed into a tablet and then incompatible substance along with necessary excipients are compressed over the previously compressed tablet.

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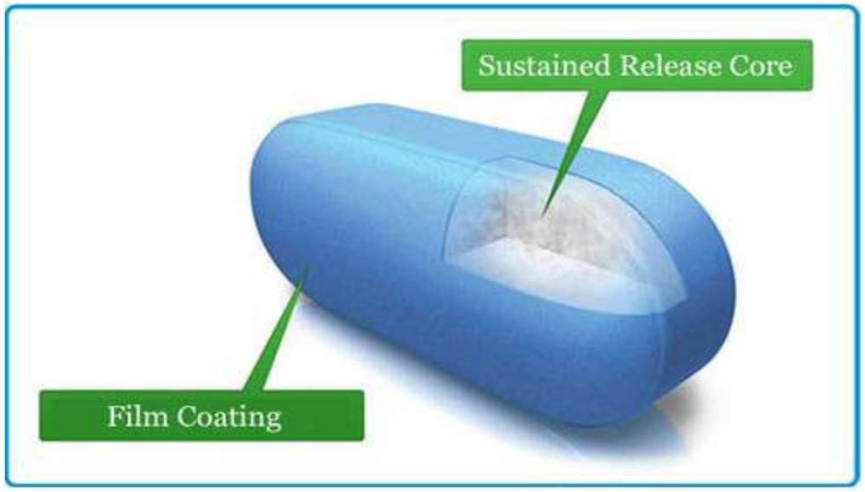
3. **Sustained action tablets**

- These are the tablets which after oral administration release the drug at a desired time and prolong the effect of the medicament. These tablets when taken orally release the medicament in a sufficient quantity as and when required to maintain the maximum effective concentration of the drug in the blood throughout the period of treatment. e.g. Diclofenac SR tablets.



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4. **Enteric coated tablets**

- These are compressed tablet meant for administration by swallowing and are designed to by-pass the stomach and get disintegrated in the intestine only.
- These tablets are coated with materials resistant to acidic pH (like cellulose acetate phthalate, CAP) of the gastric fluid but get disintegrated in the alkaline pH of the intestine.

Cont.

5. **Sugar coated tablets**

- These are compressed tablets containing a sugar coating. Such coatings are done to mask the bitter and unpleasant odour and the taste of the medicament. The sugar coating makes the tablet elegant and it also safeguard the drug from atmospheric effects.