

**Capsules**

**LAB. FIVE**

**Capsules**

Are solid dosage forms in which medicinal agent (solid, semisolid or liquid) and/or inert substance are enclosed with in a small shell of gelatin.

**Advantage of capsules:**

1. Accurate dosing if compared with liquid dosage forms.
2. Most of capsules are tasteless when swallowed which is not the case with oral liquid medication.
3. Capsule shapes and colors make them readily identified.
4. Capsule provides prescribing flexibility to the prescriber and accurate individualized dosage for the patient since they are available in variety of dosage strengths.
5. They are packaged and shipped by manufactures at lower cost and with less breakage than comparable liquid forms.
6. Empty hard gelatin capsules are often used by the pharmacist in the extemporaneous compounding of prescriptions.

**Disadvantage of capsules:**

It is not suitable for irritant drugs because when the drug release in stomach it will be make an irritant concentrated solution in one area.

**Types of gelatin capsules:**

1. Hard gelatin capsules
2. Soft gelatin capsules
3. Enteric gelatin capsules
4. **Hard gelatin capsules:**
* Hard gelatin capsule is composed from two main parts which are cap and body.
* Hard gelatin capsule is cylindrical with hemispherical ends.
* The empty capsule shells are made from a mixture of gelatin, sugar and water.
* They may be colored with FD and C dyes, and may be made opaque by adding agents such as titanium dioxide.
* Hard gelatin capsule is used to enclose solid medicament.



1. **Soft gelatin capsules:**
* Soft gelatin capsule is a unit dosage form without cap and body.
* Soft gelatin capsules shapes are either cylindrical with hemispherical end or may be spherical or oval shape.
* Soft gelatin capsules are used to enclose liquid or semisolid medicament.
* Soft gelatin capsules are composed from gelatin, sugar and water in larger amount than hard gelatin capsule. In addition, it contains plasticizer as glycerin to give elastic properties.
* Since it contain high amount of water with sugar so it support microbial growth so it needs a preservative.
1. **Enteric coated capsules:**

In this type of capsules, gelatin is treated with certain materials such as formaldehyde so the capsule is not dissolve in gastric PH but in intestinal PH.

**Storage of capsules:**

Capsules should be stored in closed container in cool dry place (we must be avoid moisture and extreme temperature because high temperature make the capsule brittle and easily broken, moisture lead to microbial growth).

**Approximate Capsules size and fill capacities:**

|  |  |
| --- | --- |
| **Capacity in gm** | **Size of capsule** |
| **1** | **000** |
| **0.65** | **00** |
| **0.5** | **0** |
| **0.32** | **1** |
| **0.25** | **2** |
| **0.2** | **3** |
| **0.15** | **4** |
| **0.1** | **5** |

**Preparation of capsules:**

1. Prepare one capsule more than the required number to avoid any loss during trituration and weighing except for potent or narcotic drug, we calculate the exact number of the required capsule.
2. Mix ingredients together with trituration by ascending order (geometrical dilution).
3. Choose suitable size of capsule.
4. Fill the capsule.
5. Polish the capsule then dispense.

**Rx**

Ephedrine 1gr

Ft. cap

 M.ft. IX cap

Calculation:

We must prepare 10 capsules.

10\*1 gr = 10 gr of drug for preparation of 10 capsules

 = 0.66 g

0.06 g /cap. The nearest capsule size is (size 5)

10\*0.1 =1 g the weight needed for preparation of 10 capsules of size 5

1-0.66 = 0.34 g diluent

**Rx**

 **Available tab.**

Paracetol 400mg 500mg

Meprobamate 100mg 200mg

Prednisolon 3mg 5mg

M.ft.9 cap.

Calculations:

The total weight of crushed tablets was 7 g

10\*400=4000/500=8 tab.

10\*100=1000/200=5 tab

10\*3=30/5=6 tab.

Available size 0

10\*0.5=5 g

Therefore, we multiply the number of capsule and we tell the patient to take double amount of capsule.

10 - 7= 3 g diluent

**R**X

 Available tab.

Meclodin 8 mg 10 mg

Valium 1 mg 2 mg

Vit. B6 20 mg 40 mg

M.ft. 9 cap.

Calculations :

10\*8=80/10=8 tab.

The total weight of crushed tablets was 2.5 g

10\*1=10/2=5 tab.

10\*20=200/40=5 tab.

10\*0.5=5 g

5-2.5=2.5 g