

Total weight of filling substance in the hard empty shell = 4.015 g

Example II

Fill the substance containing drug in each capsule, of size '1' capsule 280 mg of bulk density 0.70 g/ml. Determine how much amount of inert substance is required to fill 10 capsule while bulk density of inert substance is 0.85.

Solution : similar problem as in example I.

Example III

Which number of capsule is to be used 375 mg material having bulk density 0.75 g/ml. Bulk density of inert substance is 0.68. Calculate the total g/ml required for 10 capsules.

Given

1. Weight of substance in each capsule = 375.0 mg
2. Bulk density of substance = 0.75 g/ml
3. Bulk density of inert substance = 0.68 g/ml

$$\begin{aligned} \text{Volume occupied by fill weight} &= \frac{\text{Weight of substance in each capsule}}{\text{Bulk density of substance}} \\ &= \frac{0.375}{0.75} = 0.466 \text{ ml} \end{aligned}$$

For filling this volume of substance '1' number capsule is most appropriate because

$$\begin{aligned} \text{Volume of size '1' capsule} &= 0.48 \text{ ml (by table 1.)} \\ \text{Volume occupied by drug} &= 0.466 \text{ ml (by calculation)} \\ \text{Volume unoccupied} &= 0.48 - 0.466 = 0.014 \text{ ml} \end{aligned}$$

$$\begin{aligned} \text{Weight of diluent or inert substances} &= \text{volume} \times \text{bulk density} \\ &= 0.014 \times 0.68 = 0.00952 \text{ g} = 9.52 \text{ mg} \end{aligned}$$

Send ten capsules of the given materials

$$\begin{aligned} \text{Weight for 11 capsule of substance} &= 375 \times 11 = 4.125 \text{ g} \\ \text{Weight of diluent or inert substance} &= 9.52 \times 11 = 0.105 \text{ g} \end{aligned}$$

Total weight of filling substance in the hard empty shell = 4.230 g

Note : Always weigh substance for one extra capsule as material is lost during powdering, mixing, and handling of the substance.

EXERCISE NO. 2

Object : To prepare Buffered cream

Requirements : Emulsifying wax, white soft paraffin, liquid paraffin, sodium phosphate, citric acid monohydrate, chlorocresol, purified water, etc.

Formula

Emulsifying ointment	30.0 g
Sodium phosphate	2.5 g
Citric acid monohydrate	0.5 g
Chlorocresol	0.1 g
Purified water, freshly boiled and cooled	66.9 g

Procedure

- 1 Dissolve sodium phosphate, citric acid monohydrate and chlorocresol in purified water with gently heat.
- 2 Melt the emulsifying ointment with heat.
- 3 Heat both solution and emulsifying ointment at the same temperature and mix with stirrer gently until cold.

Category : Pharmaceutical aid

Acidity : pH- 5.7 to 6.3

Storage : Preserve in aluminium tubes, their inner surfaces should be coated with suitable lacquer. at cool place.

Uses : Pharmaceutical aid

VIVA VOCE QUESTIONS

1. What is difference between ointment and paste?
2. How will you prepare cream?
3. Define cream with examples.
4. What is cold cream?
5. What is the relation between cream and emulsion?

3. Either lie on your side or tilt your head over so that the ear which needs the drops is facing upwards.
4. Gently pull your earlobe upwards, away from your neck, and squeeze the correct number of drops into the ear.
5. Keep your head tilted for about five minutes so that the drops can spread into the ear.
6. Straighten your head and wipe away any extra liquid with a clean tissue.
7. Replace the cap on the bottle.
8. Store your ear drops in a cool, dark place.
9. You must use your ear-drops for the full length of the treatment course, even if your ear feels better. If you stop too soon, your ear problems may return.
10. While using your ear drops, try not to get water in your ear. Be careful when washing your hair and do not go for swimming until the course is finished.
11. When you have finished your course of treatment, throw any leftover drops away, or return them to your pharmacist for disposal.

Don't mix-up! Eyes drops or ear drops?

A patient put ear drops in eye and experienced burning and itching. Pharmacy dispensed ear drops instead and labeled the drops as eye drops. Unfortunately this is not too uncommon, due to variety of reasons. Sometimes the physician's handwriting is so poor that the pharmacist misreads the prescription. As a patient, be aware that this may happen. Double-check the label on the product if it says "otic," it's for the ear, and if it says "ophthalmic," it's for the eye. Ear drops never go in the eye, but some eye products can be used safely in the ear.

CONTAINERS

Ear drops should be supplied in containers of glass or suitable plastic which are fitted with an integral dropper or with a cap of suitable materials incorporating a suitable dropper tube and rubber or plastic teat. Alternatively, such cap assembly is supplied separately.

LABELLING

Comply with the general requirements for labeling on the ear drops container. It should clearly state that the prescription is intended for external use only.

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Formula

Ichthammol	1.5 g
Glycerin, sufficient to produce	15.0 ml

Procedure : Same as Exercise No. 6

Category : Pharmaceutical aid **Dose :** 3 to 5 drops

Storage : Preserve in a well-closed container. **Uses :** Antiparasitic

VIVA VOCE QUESTIONS

1. What is Ichthammol?
2. What is the use of glycerin in ear drops?
3. What is antiparasitic?

EXERCISE NO. 8

Object : To prepare Phenol ear drops

Requirements : Phenol glycerin, glycerin, etc.

Formula

Phenol glycerin	6.0 ml
Glycerin, sufficient to produce	15.0 ml

Procedure

1. Mix phenol glycerin with glycerin and shake it.
2. Add glycerin sufficient to produce 15 ml.

Category : Disinfectant

Dose : 3 to 5 drops