

SUSPENSIONS



Definition

- Suspension may be defined as preparation containing finely divided drug particles distributed somewhat uniformly throughout a vehicle in which the drug exhibits a minimum degree of solubility.

- Suspensions are the biphasic liquid dosage form of medicaments in which the finely divided solid particles.
- The range of solid particles in suspension from 0.5 to 5.0 micron.
- Suspensions are used in orally, parentally and also externally.
- They are chemically stable than solution.

- According to the particle size of the dispersed phase, suspensions are divided into:

- ✓ Coarse suspension:

Which is a dispersion of particles with a mean diameter **greater than 1 μm** .

- ✓ Colloidal suspension:

Which is a dispersion of particles with a mean diameter **less than 1 μm**

Reasons for Suspension

- If patient has a difficulty of swallowing solid dosage forms (a need for oral liquid dosage form).
- Faster rate of dissolution and oral absorption than solid dosage forms, yet slower than solutions.
- Drugs that have very low solubility are usefully formulated as suspensions.
- Drugs that have an unpleasant taste in their soluble forms (e.g., chloramphenicol (soluble) vs. chloramphenicol palmitate (insoluble)).

Properties of good Suspension

- Suspension should settle slowly & should be readily redispersed upon shaking of the container.
- The suspension is pourable.
- Particles in suspension are small and relatively uniform in size, so that the product is free from a gritty texture.

Classification

◎ **Based on General class**

→ Oral Suspension

e.g. Paracetamol Suspension

→ Externally Applied suspension

e.g. Calamine lotion

→ Parenteral Suspension

e.g. Insulin zinc suspension

◎ Based on proportion of Solid Particles

- Dilute Suspension (2 to 10% w/v solid)
e.g. cortisone acetate, prednisolone acetate
- Concentrated Suspension (50% w/v solid)
e.g. Zinc oxide suspension
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⦿ **Based on electrokinetic nature of Solid particle**

✓ **Flocculated Suspension**

✓ **Deflocculated Suspension**

◎ **Based on Size of Particle**

□ **Coarse Suspension**

Suspensions having particle sizes of greater than about 1 micron in diameter are called as coarse suspensions.

□ **Colloidal Suspension**

Suspensions having particle sizes of suspended solid less than about 1 micron in size are called as colloidal suspensions.