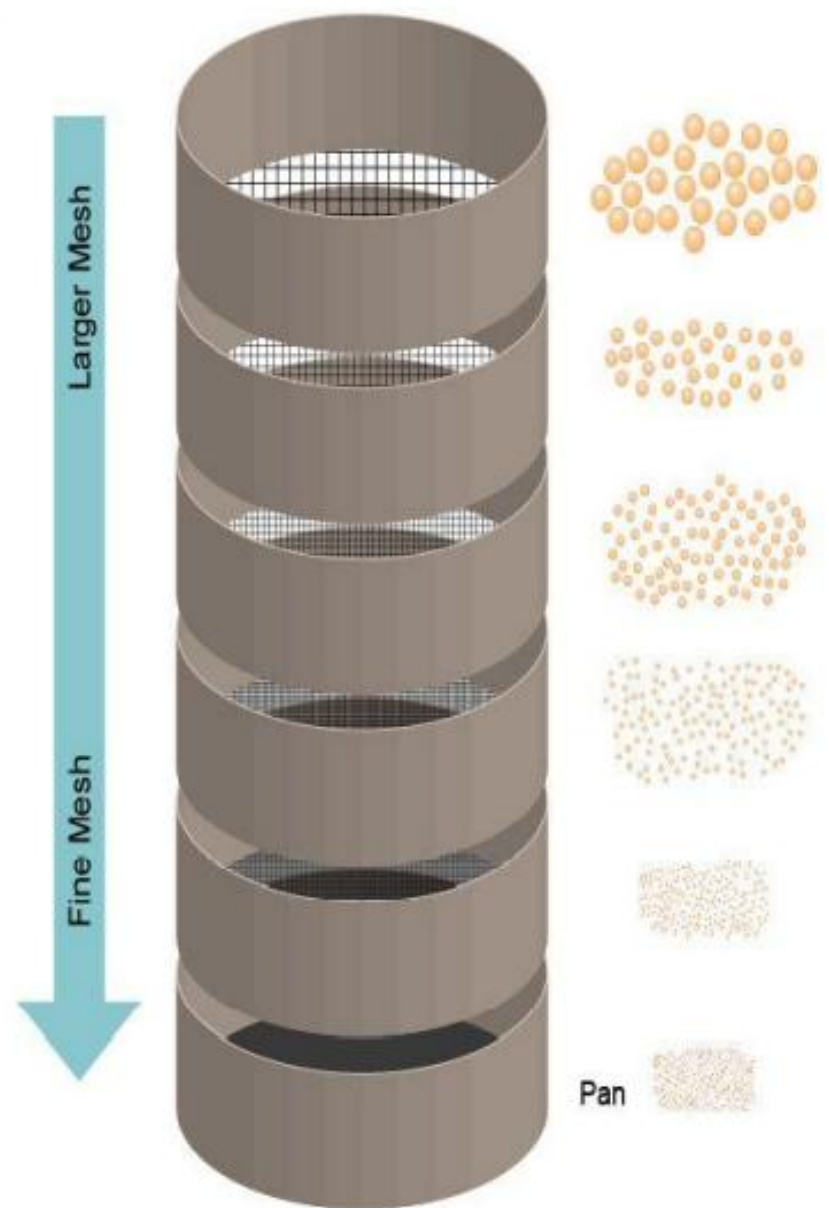


Micromeritics
SIEVING METHOD

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SIEVING METHOD

- Particle size in the range of 30–5000 μm can be measured.
- Sieving method is an ordinary and simple method.
- It is widely used as a method for the particle size analysis
- Sieve analysis is usually carried out using dry powders.
- Although, for powders in liquid suspension or which agglomerate during dry sieving, a process of wet sieving can be used.
- Sieving method directly gives weight distribution.
- It find application in dosage form development of tablets and capsules.
- Normally, 15% of fine powder should be present in granulated material to get proper flow of material and achieve good compaction.
- Thus percent of coarse, moderate, fine powder is estimated by this method



➤ Sieve analysis utilizes a wire mesh made of brass, bronze or stainless steel with known aperture (hole) diameters which form a physical barrier to particles.

➤ The standard sieve sizes are as per the pharmacopoeia

Most sieve analyses utilize a series, stack (layer) of sieves **which have the coarser mesh at the top of the series and smallest mesh at the bottom above a collector tray.**

(The mesh size goes on decreasing from top to bottom)

METHOD OF SIEVING

1. Mechanical dry sieving method

A-Agitation method (Oscillation, Vibration, Gyration)

B-Brushing method

C-Centrifugal method

2. Wet sieving method

Method:

A sieve stack usually comprises 6-8 sieves.

Powder is loaded on to the coarsest sieve of the stack and then it is subjected to mechanical vibration for specified time.

After this time, the powder retained on each sieve is weighed.

The particles are considered to be retained on the sieve mesh with an aperture corresponding to the sieve diameter. The size is estimated as per the standards given in pharmacopoeia.

Designations and Dimensions of I.P. Specification Sieves

<i>Sieve number</i>	<i>Aperture size micrometer</i>	<i>Sieve number</i>	<i>Aperture size micrometer</i>
10	1700	44	325
12	1400	60	250
16	1000	85	35
22	710	100	36
25	600	120	34
30	500	150	36
36	425	170	35

Care should be taken to get reproducible results.

➤ The type of motion, time of operation, speed, weight of powder should be fixed and standardized.

Advantages-

Inexpensive, Simple, Rapid, Reproducible results.
(if parameters are standardized)

Disadvantages-

lower limit is 30 microns

Powder if moist, can cause clogging of apertures

Attrition between particles during the process may cause size reduction giving inaccurate results.