



Vizle



POWDERS & GRANULES

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DEFINITION

Powders

- Composed of a collection of **solid, loose, dry particles** of the same or different **chemical compositions**
- Diameters less than **-1000 μm**
- Dosage form: **drug powder** + **powdered excipients** *flavoring,*
- Pharmacopoeias \rightarrow oral powder and topical powder



DEFINITION



Granules

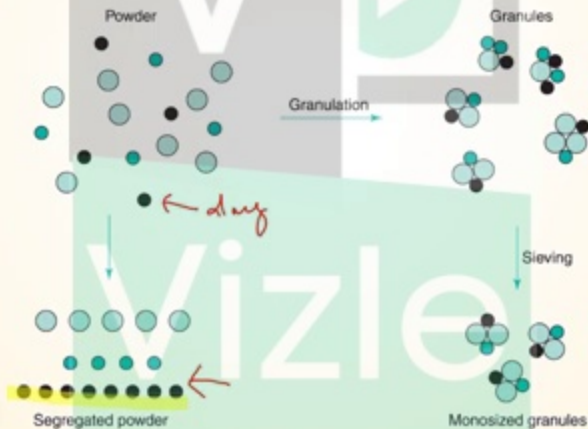
- Containing **solid, dry aggregated groups** of smaller powder particles
- Diameter greater than **1000 μm (1mm)**
For **tableting: 0.2 - 0.5 mm**
Powder dosage form: **1 - 4 mm**
- **Granulation**: adherence of dry primary powder to form larger multiparticulate entities → granules



WHY GRANULATION?

1) Prevention of **segregation**

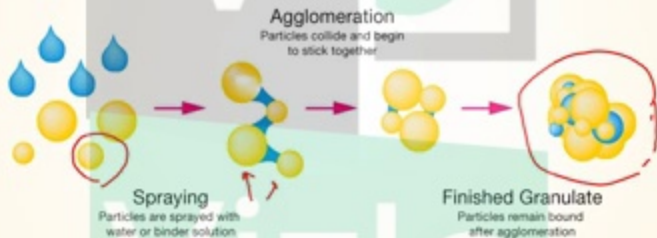
Differences in size/density of particles → segregation



WHY GRANULATION?

2) Improvement of the flow properties

Small size, irregular shape or surface characteristic → **cohesive** & **poor powder flow**



3) Improvement of the compaction characteristics Powder for tableting



WHY GRANULATION?

4) Reduce the hazard of powdered toxic materials

Fine powder can cause generation of toxic dust (e.g. anticancer drug)

Precaution during granulation process

5) Reduce hygroscopicity of the powder

If materials hygroscopic → form a cake

In granulation form → able to absorb some moisture while maintaining their flowability

6) Convenient for storage and shipment

Granules have greater bulk density → occupy less volume per unit weight





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