



**Centurion**  
**UNIVERSITY**  
*Shaping Lives...  
Empowering Communities...*

# Mixing

**Ms. Shubhashree Das**

**Assistant Professor**

**School of Pharmacy and Life Sciences**

**Centurion University of Technology and Management**

**[shubhashree.das@cutm.ac.in](mailto:shubhashree.das@cutm.ac.in)**

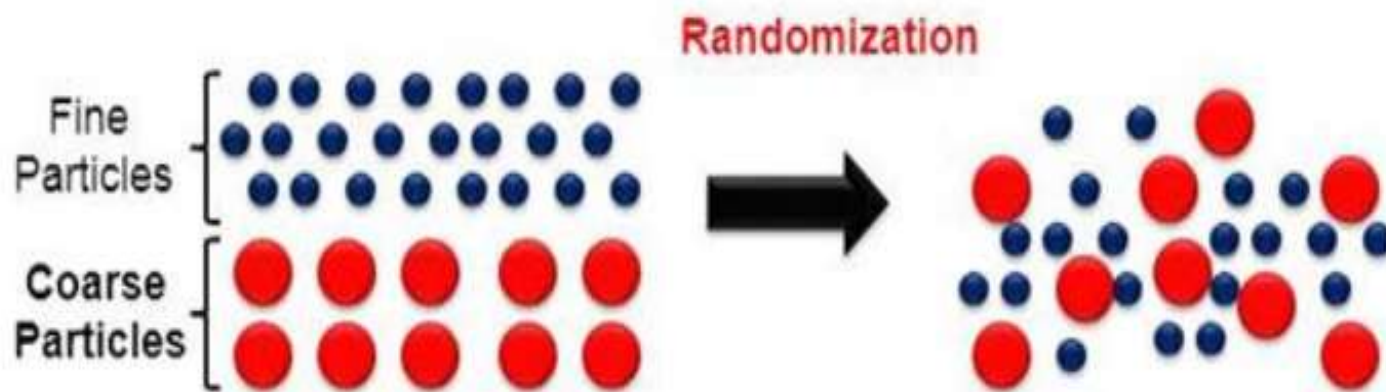


Centurion  
UNIVERSITY

Shaping Lives...  
Empowering Communities...

## Definition

- Mixing is a process that results in **randomization** of dissimilar particles within a system.





**Centurion**  
**UNIVERSITY**

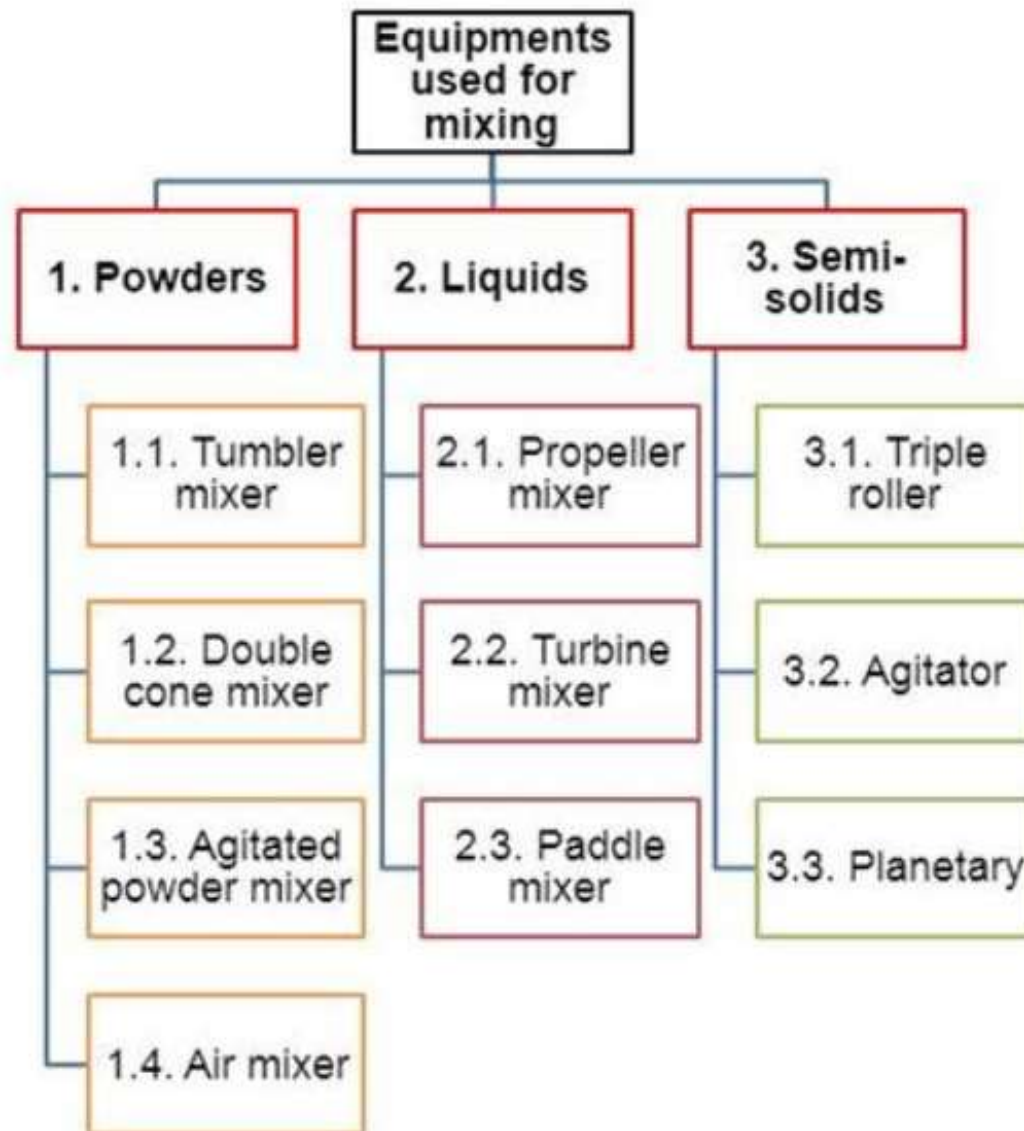
*Shaping Lives...  
Empowering Communities...*

# Objective of mixing

- ▶ To ensure uniformity
- ▶ To initiate or to enhance the physical or chemical reactions e.g. diffusion, dissolution etc.
- ▶ To make the following products:
  - Tablets
  - Suspensions
  - Emulsions
  - Pastes
  - Creams
  - Ointments
  - Solutions
  - Syrups
  - Tablet coatings



**Centurion**  
**UNIVERSITY**  
*Shaping Lives...  
Empowering Communities...*



**4. Homogenization** (Mixing of immiscible Liquids)

- 4.1. Hand homogenizer
- 4.2. Silverson homogenizer
- 4.3. Colloidal mill

**5. Viscosity**



**Centurion**  
**UNIVERSITY**  
*Shaping Lives...  
Empowering Communities...*

# 1. Mixing of powders







**Centurion**  
**UNIVERSITY**

Shaping Lives...  
Empowering Communities...

## 1.2. Double cone mixer

**Principle:** Mixing is due to **tumbling (rotate)** and **shearing (break)** action with blade.

**Construction:** Made of **stainless steel** and available in capacity ranging from 5 to 200 kg. The rate of rotation range is **30-100 rpm**.

**Working:** The material to be blended is loaded approx. **50-60% of the total capacity** of the blender. As the blender rotates the material mixes by tumbling motion and shear action.

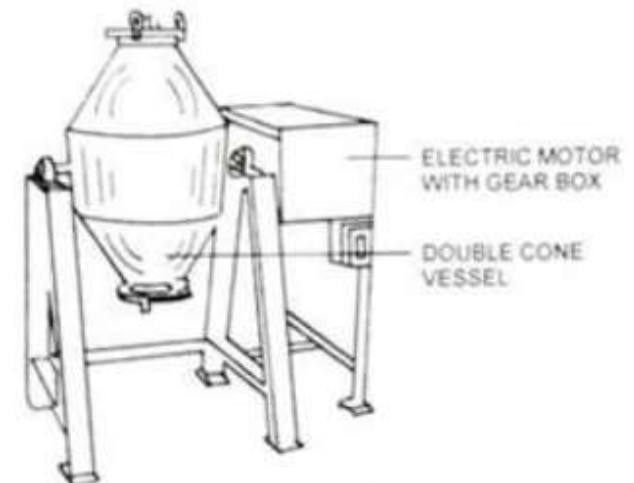
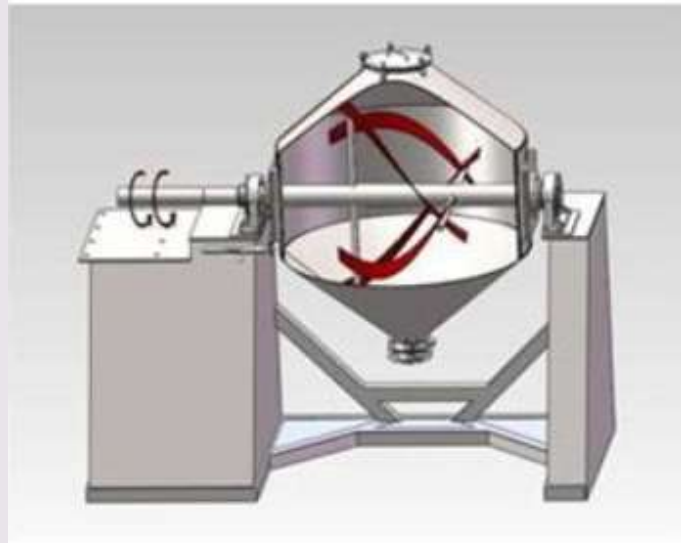


Fig. 7-1 Double cone blender



**Centurion**  
**UNIVERSITY**

*Shaping Lives...  
Empowering Communities...*

Thank you

