



12.WEEK

MIXING OF LIQUIDS

Mixing Mechanisms for Liquids

```
graph TD; A[Mixing Mechanisms for Liquids] --> B[Bulk Transport]; A --> C[Turbulan Mixture]; A --> D[Laminar Flow]; A --> E[Molecular Diffusion];
```

Bulk Transport

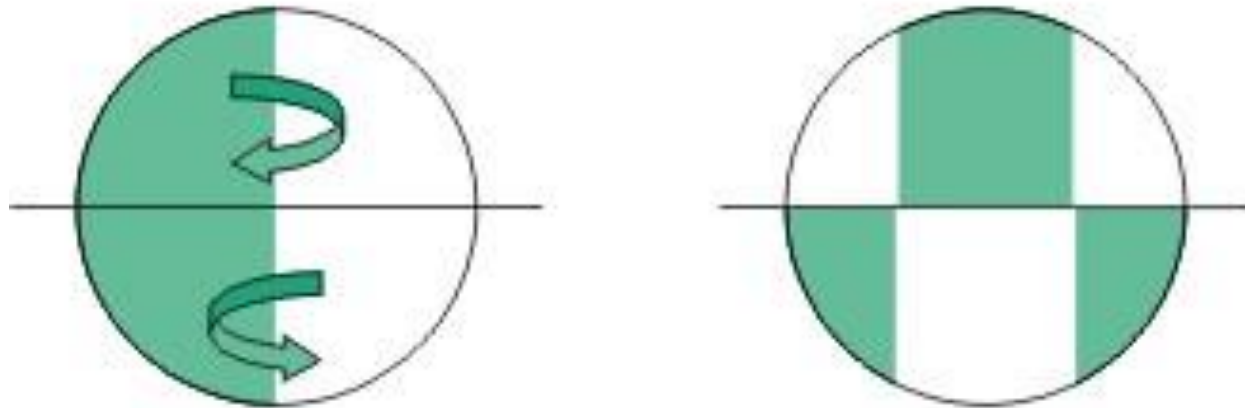
Turbulan
Mixture

Laminar Flow

Molecular
Diffusion

Bulk Transport

It is the process of transporting the material to be mixed into one mass within the system from one region to another.



Turbulan Mixture

At any point in the liquid, the flow rate of the liquid and the mixture are random. Therefore, the rate of fluid is different in different parts of the fluid.

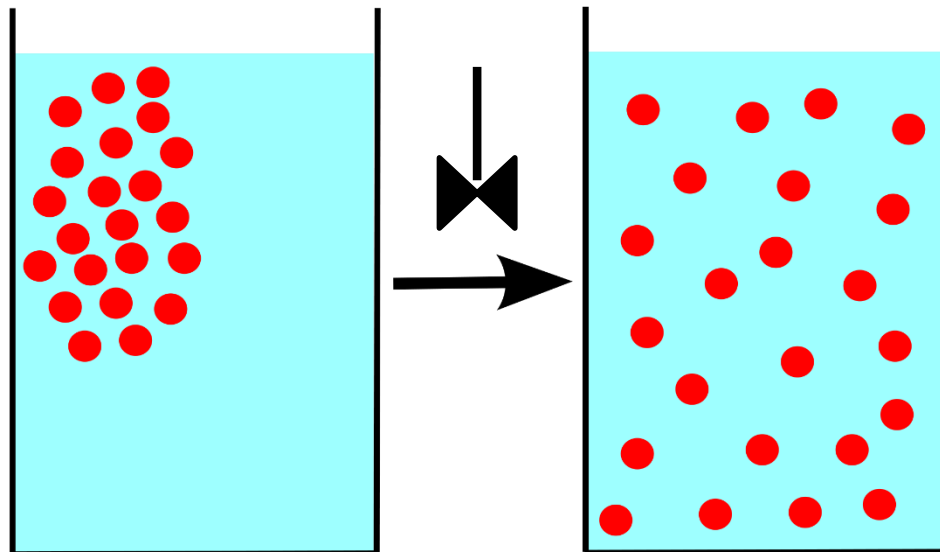
For this reason, turbulence occurs in the system as a result of the temporary and variable speed difference, and the mixing process occurs randomly.

Laminar Flow

- This mixing mechanism is observed in very viscous liquids. Two dissimilar liquid layers are observed as a result of mixing over each other.

Molecular Diffusion

Basically mixing occurs when liquid molecules which are to be mixed move randomly within each other.



Devices used for mixing liquids

- Series Mixing
- Continuous Mixing

I. Propeller Mixer

- The propeller allows the liquid to mix both vertically and centrally.
- They are used at speeds of 50 rpm and lower.
- Semi-solids and viscous liquids

2. Air Jets

The air from the bottom of the boiler is sent into the vapor and mixed. This ensures that a circulation occurs in all directions of the liquid mass and the mixing process takes place.

3.Liquids Jets

It is a mixing process carried out by pumping liquids into the tank by means of jets.



4. Pallet Mixers

This type mixers used for mixing large masses.