

What is Mixing/ Blending?

Mixing is the process of combining different materials to produce a homogeneous product. Homogeneous can be defined as “Uniform in structure or Composition”

Why mix or blend?

A homogeneous mixture may be mixed to a certain weight (batch size) with:

- Consistent particle size distribution
- Consistent colour
- Consistent texture
- Specific ratios of components

Blends which are very concentrated are often termed “Pre-mixes” or “Master batches”.

Mixing and blending are terms which are often interchanged but there are differences. Blending is often a gentle process combining materials whereas mixing often involves a more vigorous combination.

Poor mixing can affect the quality of the product resulting in non-homogeneous product which can affect chemical composition, colour, reactivity and particle size.

Over blending can lead to separation, aeration and with liquids also viscosity increases.

What types of mixers/blenders are available?

The three main classifications include:

Blenders: Generally for Solid-Solid blending or the addition of small amounts of liquid with solids. For solids both the vessel shape and agitator define the mixer.

Examples of Industrial Blenders include:

- a) Convection Blenders such as Ribbon Blenders, Paddle Blenders, Vertical Screw Blenders, Plough Sheer mixers
- b) Tumble Blenders such as Drum Blenders, Double Cone Blenders, V-Blenders
- c) Fluidization Blenders/ Mixers
- d) High Sheer mixers
- e) Static/in-line mixers

Agitators: Typically used for Liquid-Liquid mixing and solid suspensions in liquids and use rotating impellers. For liquids the agitator type defines the mixer and agitator types include Gate, Propeller, Saw Type, and Paddle.

Heavy Duty Mixers: Generally used for high viscosity materials such as putty.

Which Industries are blending and milling required?

Used extensively in Speciality Chemical sectors such as:

Biocides

Water treatment

Animal Feed Additives

Crop Protection

Plastics & Polymers

Detergents

Oilfield Chemicals