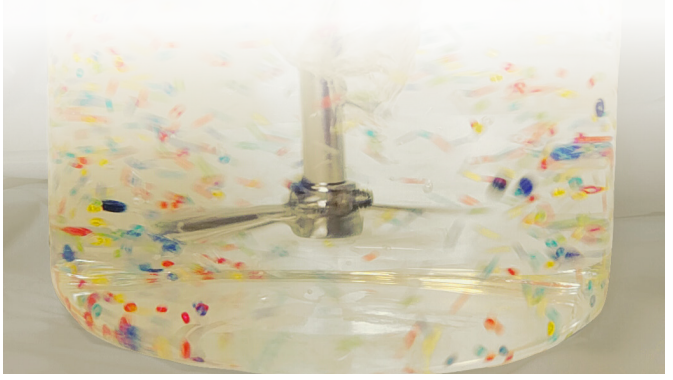
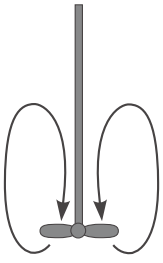
What Do You Know About Flow?

Caframo® LabSolutions

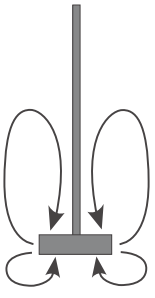


Understanding flow patterns is an important part of choosing the right impeller for the job. The three primary types of flow are described below.



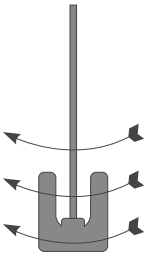
Axial

The fluid travels parallel to the axis of rotation and pumps liquid from the top to the bottom of a vessel. Axial flow impellers are used for blending, solids suspension, solids incorporation, or draw down (introducing air). Applications suited to this type of mixing are low viscosity and high speed. The most common impeller style is the propeller.



Radial

The fluid is forced radially outward to the vessel wall. Compared to axial flow impellers, radial flow impellers provide higher shear and turbulence levels with lower pumping. Radial flow draws the liquid from the top and bottom. This style of impeller is chosen for liquid dispersion applications of low to medium viscosity fluids and high speed. Common impeller styles are the straight blade and crossed blade.



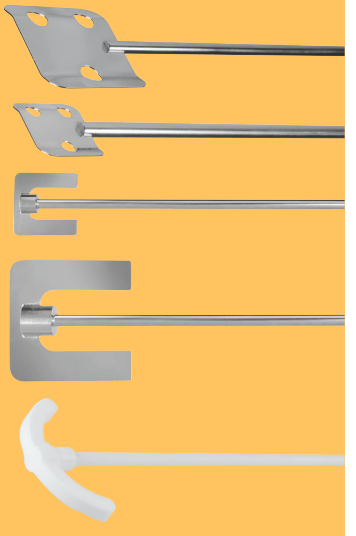
Tangential

The movement created by tangential or rotational flow is a swirling of the tank contents, often with a surface vortex. It is often used when mixing high viscosity fluids at lower speeds. The most common impeller styles are the U-shaped anchor and square blades, providing maximum surface area for product contact.

Axial
Low Shear

Radial
Moderate to High Shear

Tangential
Low Shear; High Shear at edges



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