Fluid Mixing and Gas Dispersion in Agitated Tanks

Gary B Tatterson

This book is a comprehensive literature review of research in mixing, power requirements, and gas dispersion in agitated tanks up to 1991. It provides a thorough understanding of the fundamentals of mixing and examines various methods used in different industries. Tatterson describes the basics of mixing and gas dispersion and investigates their applications in various processes. The text is an essential resource for anyone involved in industrial fluid mixing, and it serves as a valuable reference for engineers and researchers in the field.
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Agitation and mixing

Agitation vs. Mixing

Agitation induced motion of a material in a specified way. Usually a circulatory pattern inside a container.

Mixing. Sometimes gas is absorbed from lower liquid level to disturb operation.

Solution 1: Install baffles on tank wall. Maximum 8 baffles (usually 4), called fully baffled.

Baffles and draft tube mixing through controlling the flow velocity and direction, reducing the short cut. Especially for particle suspension.

Solution 2: Off-central installed agitator will improve the operation with increased power consumption.

Side entering impellers:

Large tanks agitation: side entering impellers. Vortex inhibition. Crystallization, …) are often carried out in agitated systems. The role of agitation is to