

# Newmix® - Levtech® Application note

## Mixing with High Solid Load in Pad-Drive™

Mixing system: Newmix®- Levtech® Pad-Drive™ 1000 system

Mixing bag: 200L

Mixing type: Solid-liquid

The Newmix-Levtech Pad-Drive system is a scalable and non-invasive single-use mixing system. The heart of this mixer is an innovative top-mounted mixing paddle that allows effective and uniform mixing in demanding applications, such as preparation of contained high-solids solutions or mixing of high-viscosity liquids.

## Introduction

Mixing large quantities of a solid and a liquid, such as during the preparation of high-concentration buffer solution, can be challenging for single-use disposable mixing systems. Often, the force needed to suspend the solid can lead to stalling of the impeller.

In this experiment, a Pad-Drive 1000 was used to prepare 200L of a high concentration salt solution. The objective was to demonstrate how the paddle impeller is able to suspend large loads of solid without stalling.



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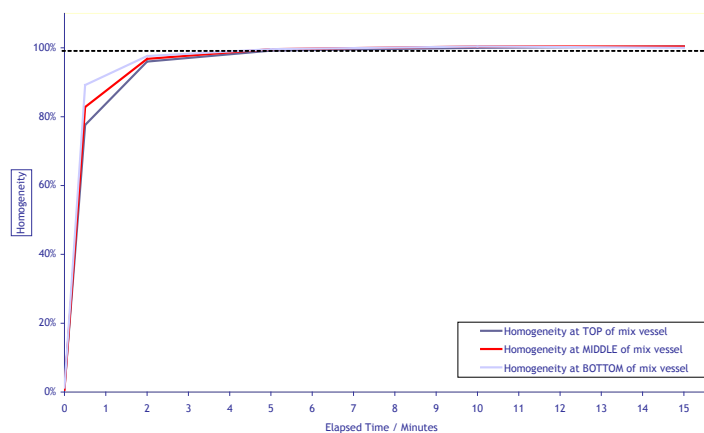
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## Experimental

A 200L mixing bag was filled with 170L of DI water and 60Kg of solid sodium chloride. After the solid was added and had settled on the bottom of the bag, mixing was started with a paddle speed of 50rpm and a mix angle of 9°.

Solution homogeneity was determined via conductivity readings taken at the top, middle and bottom of the mixing bag during the mixing process.



Mixing efficiency in 200L C-Mix bag

## Results

The accompanying chart shows the solution homogeneity in the bag during mixing.

Mixing was 98% complete within 2 minutes, with steady state reached in 5 minutes. At no time during the mixing cycle did the paddle impeller stall or hesitate.

## Conclusions

The paddle mixing action of the Newmix-Levtech Pad-Drive 1000 system is capable of high mixing efficiency without stalling in high-load solid-liquid applications.