

Preparing 160L of a 150mM Salt Solution using a LevMixer™

Mixing system: Newmix®- Levtech® LevMixer™

Mixing bag: 200L L-Mix bag

Mixing type: Powder-liquid

The Newmix-Levtech LevMixer is a compact and non-invasive single-use mixing system. The heart of this system is a mixing bag incorporating a bottom-mounted levitating impeller designed for powder-liquid and liquid-liquid mixing applications. The impeller is frictionless and generates no particles. All product-contacting surfaces are 100% disposable.

Introduction

Powder-liquid mixing is a common requirement in biopharma processing. In order to maximize mixing efficiency for powder-liquid applications, a variant of the LevMixer is available with a large (6.35"), centrally-located impeller.

In this experiment, a LevMixer was used to prepare ~160L of a typical buffer solution.



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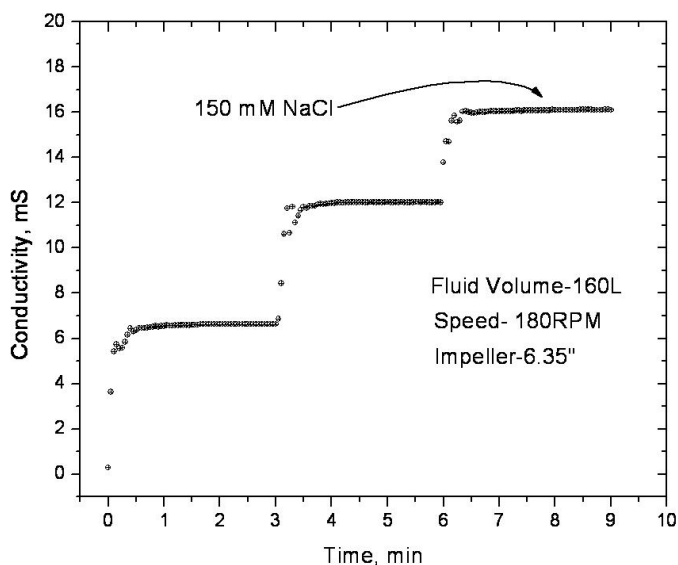
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Application note XA200E 0806rev1

Experimental

A 200L LevMixer mixing bag was filled with 160L of water, and mixing speed was set to 180rpm. In total, approximately 1.4kg of sodium chloride (NaCl) powder was added to the mixing bag, resulting in a 150mM solution. The NaCl additions were made in three increments, each approximately 500g, at t=0 minutes, t=3 minutes and t=6 minutes. Solution homogeneity was monitored via real-time conductivity readings after each addition



Results

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

After each NaCl powder addition, mixing was found to be 95% complete within 30 seconds, and 100% complete within 90 seconds. At no time during the mixing cycle did the impeller stall or hesitate.

Conclusions

The Newmix-Levtech LevMixer system is well suited for preparation of buffer salt solutions. A powder-liquid mixing bag, which includes a centrally-mounted, large, levitated impeller, is a good choice for such applications.

Mixing times in the 60-90 second range are typical at the tested volume and salt concentration.