

## Dilution of 25% Salt Solution at the 2000L Scale using a LevMixer™

Mixing system: Newmix®- Levtech® LevMixer™

Mixing bag: 2000L L-Mix bag

Mixing type: Liquid-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

Liquid-liquid mixing is a common requirement in biopharma processing. In order to maximize mixing speed for liquid-liquid applications, various impeller sizes and locations are available.

In this experiment, a LevMixer was used to prepare 2000L of a dilute salt solution.



Hoegaarden, Belgium - Europe

Phone: +32 (0) 16.76.61.59

Lexington, KY - USA

Phone: 859.263.1135

Minneapolis, MN - USA

Phone: 952.942.0855

[www.atmi-lifesciences.com](http://www.atmi-lifesciences.com)

[info@atmi-lifesciences.com](mailto:info@atmi-lifesciences.com)

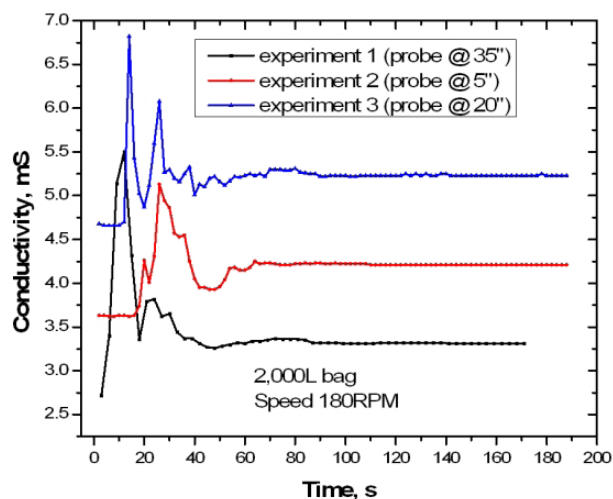
© 2008 ATMI, Inc. All Rights Reserved.

ATMI, the ATMI logo, LevMixer, Levtech, the LevTech logo and Newmix are trademarks or registered trademarks of Advanced Technology Materials, Inc in the United States, other countries or both.

Application note XA203E 0806rev1

### Experimental

A 2000L LevMixer mixing bag with a large (6.35"), off-center, levitating impeller, was filled with 1991L of water, and mixing speed was set to 180rpm. In total, 9L of a 25% w/v sodium chloride (NaCl) solution was added to the mixing bag, resulting in a 0.11% w/v solution. The NaCl solution was added in three successive 3L increments, and mixing effectiveness was verified at three different heights in the mixing vessel. Solution homogeneity was monitored via real-time conductivity readings taken at locations opposite the salt addition location.



### Results

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

It can be seen that mixing was complete in each case within 90 seconds.

### Conclusions

The Newmix-Levtech LevMixer system is well suited to performing rapid dilution of concentrated aqueous solutions. For this application, at the 2000L scale, mixing is complete within 90 seconds