



Application Note

USD 3039

Dilution of 25% Salt Solution at the 2000 L Scale Using a LevMixer® System

Mixing system: LevMixer system

Mixing biocontainer: 2000 L LevMixer biocontainer

Application mixing type: Liquid-liquid

The LevMixer system is a compact single-use mixing system. The heart of this system is a mixing biocontainer incorporating a bottom-mounted levitating impeller designed for powder-liquid and liquid-liquid mixing applications. The impeller is frictionless and generates no particles.

Introduction

Liquid-liquid mixing is a common requirement in biopharmaceutical processing.

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



Experimental

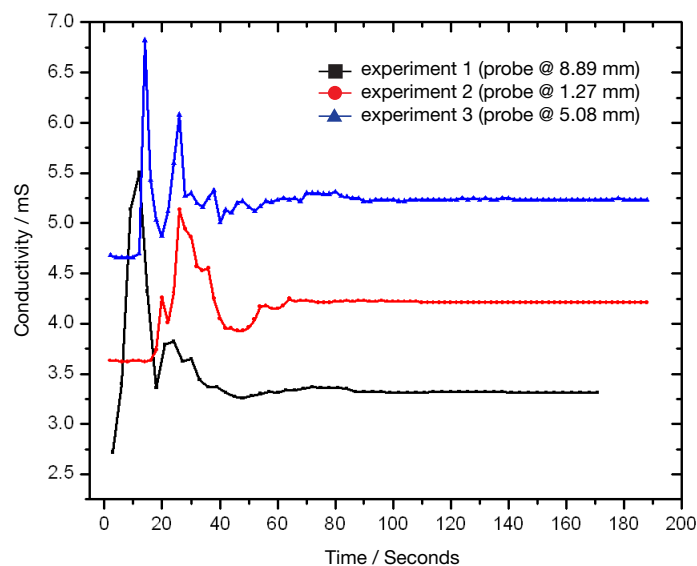
A 2000 L LevMixer mixing biocontainer with a 16.13 cm diameter, off-center, levitating impeller, was filled with 1991 L of water, and mixing speed was set to 180 rpm. In total, 9 L of a 25% w/v sodium chloride (NaCl) solution was added to the mixing biocontainer, resulting in a 0.11% w/v solution. The NaCl solution was added in three successive 3 L 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

Figure 1 shows solution homogeneity in the biocontainer during mixing. It can be seen that mixing was complete in each case within 90 seconds.

Figure 1

Solution homogeneity in the biocontainer during mixing



Conclusions

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



Life Sciences

Corporate Headquarters

Port Washington, NY, USA
+1.800.717.7255 toll free (USA)
+1.516.484.5400 phone
biopharm@pall.com e-mail

European Headquarters

Fribourg, Switzerland
+41 (0)26 350 53 00 phone
LifeSciences.EU@pall.com e-mail

Asia-Pacific Headquarters

Singapore
+65 6389 6500 phone
sgcustomerservice@pall.com e-mail

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Visit us on the Web at www.pall.com/mixing

E-mail us at allegro@pall.com

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