Life Sciences

Application Note

USD 3049

The Effect of Mixing Speed on Pall® Wand Mixer Efficiency at Medium Scale

Mixing system: Pall Wand Mixer

Mixing biocontainer: 75 L Mixer biocontainer

Application mixing type: Powder-liquid

The Pall Wand Mixer is a compact and non-invasive single-use mixing system. The heart of this system is a mixing biocontainer incorporating an innovative top-mounted impeller capable of providing efficient mixing for powder-liquid and liquid-liquid mixing applications. The impeller comprises a rotating wand inside an inert polymer sleeve, and is designed to ensure low particle shedding and total containment while serving effectively in a wide variety of mixing tasks.

Introduction

Powder-liquid mixing is a common requirement in biopharmaceutical processing. In order to optimize mixing efficiency for powder-liquid applications, the Pall Wand Mixer is available with a large, diagonally-mounted helical mixing wand.

In this experiment, a Wand Mixer was used to prepare 75 L of a concentrated salt solution.

Experimental

A 75 L Wand Mixer mixing biocontainer was filled with water, and impeller speed was set to 150 rpm. A quantity of sodium chloride (NaCl) powder was added to the mixing biocontainer, and the solution homogeneity was monitored via real-time conductivity readings.

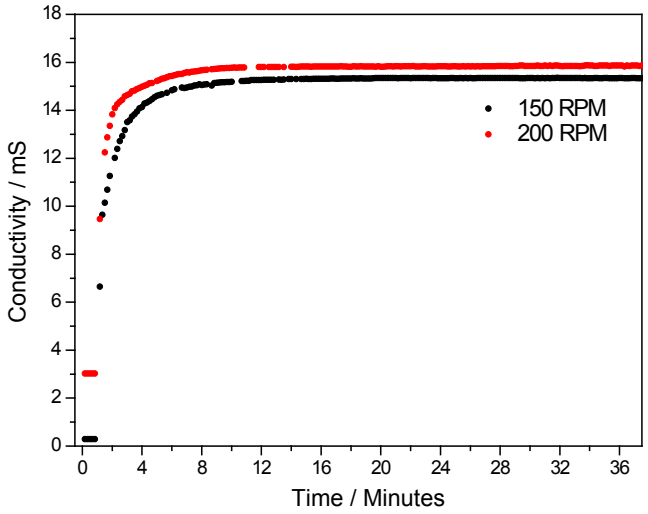
The entire experiment was repeated using an impeller speed of 200 rpm.

Results

Figure 1 shows solution homogeneity in the biocontainer during mixing; the plateau areas indicate steady state. Impeller speed had a modest but measurable impact on mixing times, which ranged from 10 minutes at 200 rpm up to 15 minutes at 150 rpm.

Figure 1

Shows solution homogeneity in the biocontainer during mixing



Conclusions

The Pall Wand Mixer is well suited to preparation of concentrated salt solutions. A powder-liquid mixing biocontainer, which includes a top-mounted wand impeller, is a good choice for such applications.

PALL 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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