Life Sciences

Application Note

USD 3025

Preparing 200 L of 10x PBS Buffer Concentrate using a Pall® Magnetic Mixer

Mixing system: Pall Magnetic Mixer

Mixing biocontainer: 200 L Mixer biocontainer

Mixing type: Powder-liquid

The Pall Magnetic Mixer is a compact single-use mixing system. The heart of this system is a mixing biocontainer incorporating an innovative bottom-mounted magnetically-driven impeller capable of providing efficient high-torque mixing for all powder-liquid and liquid-liquid mixing applications. The impeller rides on a low-friction, inert bearing assembly designed to ensure low particle shedding while allowing mixing of high powder loads in large liquid volumes.

Introduction

Powder-liquid mixing is a common requirement in biopharmaceutical processing. In order to maximize mixing efficiency for powder-liquid applications, the Magnetic Mixer is available with a 16.13 cm (6.35 inch) impeller.

In this experiment, a Magnetic Mixer was used to prepare a quantity of a 10x concentrated solution of phosphate buffered saline (PBS), a buffer that is ubiquitous in downstream bioprocess steps.

Experimental

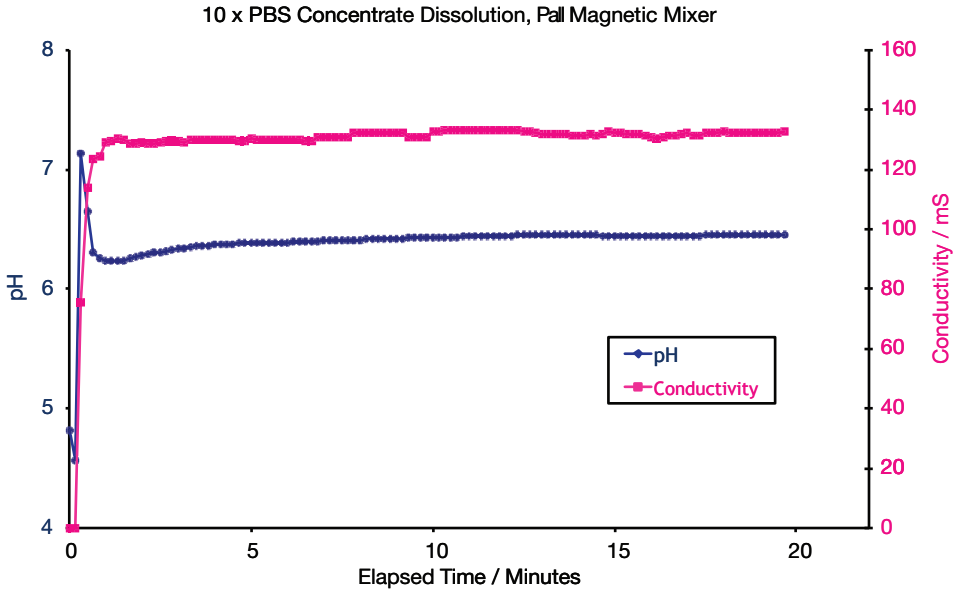
A 200 L Magnetic Mixer biocontainer was filled with 160 L of water, and mixing speed was set to 300 rpm. Powder buffer components were added all at once via a Pall powder bag; 16 kg NaCl + 0.4 kg KCl + 2.88 kg $Na_2HPO_4.12H_2O$ + 0.48 kg KH_2PO_4. The solution homogeneity was monitored via real-time conductivity and pH readings.

Results

After the buffer powder addition, conductivity and pH data indicated that mixing was complete within approximately 10 minutes.

Figure 1

Solution homogeneity in the biocontainer during mixing



Conclusions

The Pall Magnetic Mixer system is well suited to preparation of high-concentration buffer solutions. A powder-liquid mixing biocontainer, which includes a large, bearing-mounted magnetic impeller, is a good choice for such applications. Mixing times in the 10 minute range are typical at the tested volume and concentration.

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

Filtration. Separation. Solution.SM

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

E-mail us at allegro@pall.com

International Offices
Pall Corporation has offices and plants throughout the world in locations such as: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, India, Indonesia, Ireland, Italy, Japan, Korea, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Poland, Puerto Rico, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, the United Kingdom, the United States, and Venezuela. Distributors in all major industrial areas of the world. To locate the Pall office or distributor nearest you, visit **www.pall.com/contact**.

The information provided in this literature was reviewed for accuracy at the time of publication. Product data may be subject to change without notice. For current information consult your local Pall distributor or contact Pall directly.

7/15, PDF, GN15.6131 USD3025