

Application Note

USD 3028

Preparing 2,000 L of an 8 g/L Salt Solution using a Pall® Magnetic Mixer

Mixing system: Pall Magnetic Mixer

Mixing biocontainer: 2,000 L Mixer biocontainer

Application 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 pharmaceutical processing. In order to maximize mixing efficiency for powder-liquid applications, the Magnetic Mixer is available with a 16.13 cm (6.35 inch) magnetic impeller.

In this experiment, a Magnetic Mixer was used to prepare a large volume of a highly concentrated salt solution in a single batch.



Experimental

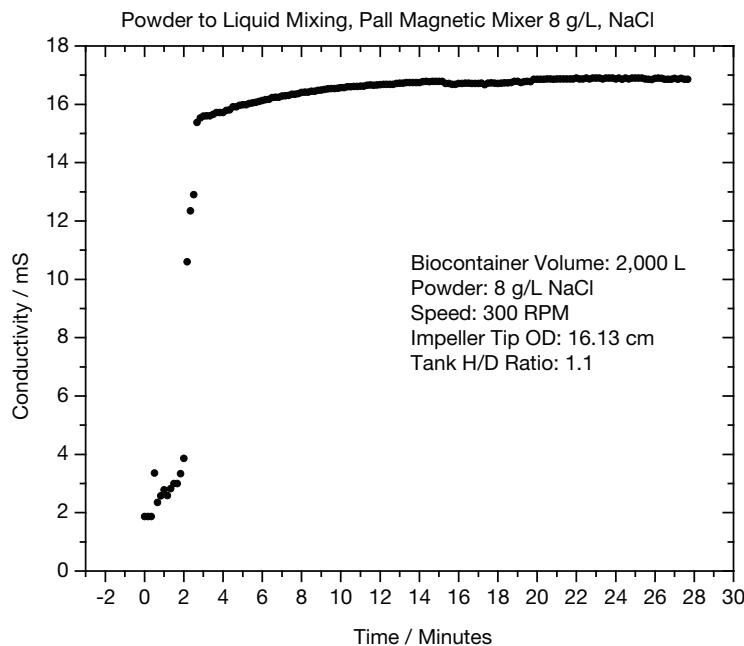
A 2,000 L Magnetic Mixer biocontainer was filled with 2,000 L of water, and mixing speed was set to 300 rpm. A single 16 kg addition of sodium chloride (NaCl) powder was made to the mixing biocontainer, resulting in an 8 g/L solution. The solution homogeneity was monitored via real-time conductivity readings.

Results

Figure 1 shows solution homogeneity in the biocontainer during mixing. After the NaCl powder addition, mixing was found to be 95% complete within approximately 6 minutes, and 100% complete within approximately 15 minutes.

Figure 1

Solution homogeneity in the biocontainer during mixing



Conclusions

The Pall Magnetic Mixer system is well suited to preparation of large volumes of high-concentration buffer salt solutions. A powder-liquid mixing biocontainer is a good choice for such applications.

Mixing times in the 6-15 minute range are typical at the tested volume and salt concentration.



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