



## Application Note

USD 3053

# Preparing 200 L of an 8 g/L Salt Solution with the Pall® Wand Mixer

**Mixing system:** Pall Wand Mixer

**Mixing biocontainer:** 200 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 200 L of a concentrated salt solution.

### Experimental

A 200 L Wand Mixer mixing biocontainer was filled with 200 L of water, and mixing speed was set to 250 rpm. A single 1.6 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.



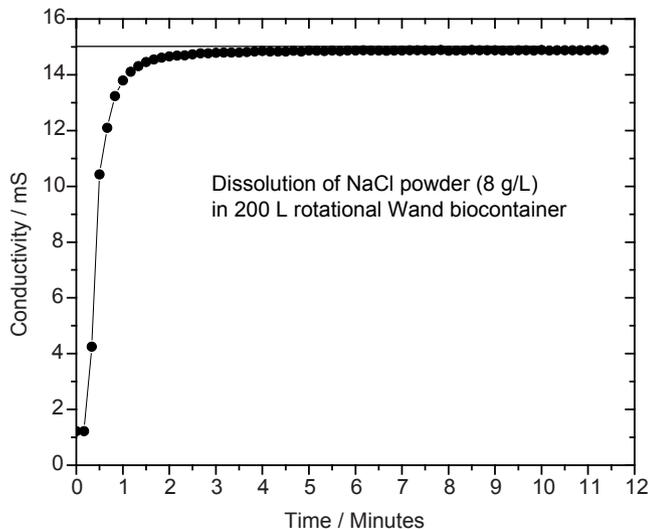
## Results

Figure 1 shows solution homogeneity in the biocontainer during mixing.

After the NaCl powder addition, mixing was found to be 95% complete within approximately 90 seconds, and 100% complete within approximately 4 minutes.

**Figure 1**

*Solution homogeneity in the biocontainer during mixing*



## Conclusions

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

Mixing times in the 90-240 second range are typical at the tested volume and salt concentration.



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