

Dilution of an Acid Solution at the 1000L Scale using a LevMixer™

Mixing system: Newmix®- Levtech® LevMixer™

Mixing bag: 1000L L-Mix bag

Mixing type: Liquid-liquid

The Newmix-Levtech LevMixer is a compact and non-invasive single-use mixing system. The heart of this system is a mixing bag incorporating a bottom-mounted levitating impeller designed for powder-liquid and liquid-liquid mixing applications. The impeller is frictionless and generates no particles. All product-contacting surfaces are 100% disposable.

Introduction

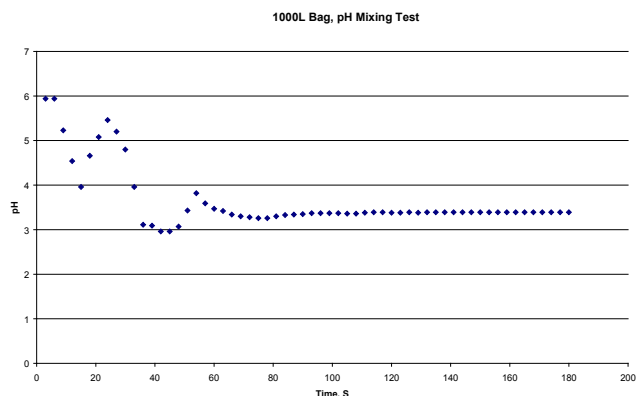
Liquid-liquid mixing is a common requirement in biopharma processing. In order to maximize mixing speed for liquid-liquid applications, various impeller sizes and locations are available.

In this experiment, a LevMixer was used to prepare 1000L of a dilute acid solution.



Experimental

A 1000L LevMixer mixing bag with a large (6.35"), off-center, levitating impeller, was filled with 1000L of water, and mixing speed was set to 175rpm. In a single dose, 100ml of 10%w/w hydrochloric acid (HCl) solution was added to the mixing bag. Solution homogeneity was monitored via real-time pH readings taken at the top of the mixing bag, opposite the acid addition location.



Results

The accompanying chart shows solution homogeneity in the bag during mixing.

It can be seen that mixing was complete within 90 seconds.

Conclusions

The Newmix-Levtech LevMixer system is well suited to performing rapid dilution of concentrated acid solutions. For this application, at the 1000L scale, mixing is complete within 90 seconds

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