

Mixing time study for wide range of fluid viscosity

Katsuhide Takenaka¹, Koji Takahashi^{2,1}

Sumitomo Heavy Industries (USA) Inc., Allentown PA USA

²Department of Chemistry and Chemical Engineering, Yamagata University, Yonezawa,
Yamagata Japan

Abstract

Recently, many of chemical companies move to specialty chemical, especially Japanese chemical industries, due to historical /geographic reasons. In many cases for special chemicals, one of the common agitator types are adopted as well, but the changing of product grade and changing to other products are often seen.

Therefore, the requirements of the reactor are the impellers, which can be used for widely and rapidly varying viscosity and also for multiuse, such as not only blending but also solid suspension/gas dispersion etc.

One of the key issues for the reactor is to select the right impeller. MAXBLEND has been mainly installed Japanese chemical industries so far. There may have these performance backgrounds.

In this study, with focusing on the mixing time with several viscosity fluids, the capability of multiuse has been experimentally verified for MAXBLEND and conventional impellers and configuration, and CFD analysis has been done to make clear the flow mechanism for each impeller in each flow region.