

Appraisal of Mathematical Modeling of Alkyd Resin Polycondensation Reactor

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March 30, 2022

Abstract

Alkyd resin polycondensation process has been subjected to extensive theoretical, mathematical, experimental and simulation research because of inadequate kinetic models. The analysis of the alkyd resin polycondensation process is outstandingly essential for the design and development of new resins suitable for a broad range of application. However, experimental methods do not only consume time but burdensome, clumsy and costly. Researchers have, therefore, introduced mathematical modeling to control the alkyd reactor polycondensation processes and to investigate and improve the fundamental understanding of the dynamics of the polymerization process, to design new alkyd resin in a shorter time with comparatively lower cost. The latest developments in the mathematical and simulation technologies that have been reported for the alkyd reactor polycondensation kinetics were reviewed. The scope of this review includes the modeling and simulation techniques used for alkyd resin polycondensation processes and future challenges.

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