Crystallization process design of isosorbide recovery for polyester production

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The development of bio-based materials for the industrial polymers has been emerged and a few monomers has been adapted for industrial polymer applications. Bio-based materials have benefits such as bio-degradability, renewability, and reduction of carbon dioxide concentration against fossil resource-based materials.

A significant amount of isosorbide lost during polymerization process due to its low reactivity requires recycling due to reduce production cost. A crystallization process can reduce energy cost without thermal decomposition or color change by heat. In this study, a crystallization process is suggested for recovery of isosorbide, the monomer, of polyester production.

We present solubility of isosorbide and the growth behavior in ethylene glycol as a solvent.