

RESEARCH PAPERS

悬浮态乳液聚合条件对聚氯乙烯树脂颗粒特性的影响

包永忠, 魏真理, 翁志学, 黄志明

State Key Laboratory of Polymer Reaction Engineering, Zhejiang University, Hangzhou 310027, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 Suspended emulsion polymerization of vinyl chloride was carried out in a 5 L autoclave. The influence of agitation, polymerization conversion, dispersant and surfactant on the average particle size (PS) and particle size distribution (PSD), particle morphology and porosity of polyvinyl chloride (PVC) resin was investigated. It showed that the agitator had great influence on the smooth operation of polymerization, PS and PSD. The PS increased and PSD became narrow as polymerization conversion became high. The porosity decreased with the increase of conversion. A convenient choice of additives, both dispersants and non-ionic surfactants, allows one to adjust PS and PSD. The PS decreased with the addition of polyvinyl alcohol or hydroxypropyl methylcellulose dispersants, and increased with the addition of Span surfactants. The addition of dispersants or surfactants also affected the morphology and porosity of resin, and PVC resin with looser agglomeration and homogeneous distribution of primary particles was prepared.

关键词 [suspended emulsion polymerization](#) [vinyl chloride](#) [dispersant](#) [particle size](#) [particle size distribution](#) [porosity](#)

分类号

DOI:

Influence of Suspended Emulsion Polymerization Conditions on Particle Characteristics of Polyvinyl Chloride Resin

BAO Yongzhong, WEI Zhenli, WENG Zhixue, HUANG Zhiming

State Key Laboratory of Polymer Reaction Engineering, Zhejiang University, Hangzhou 310027, China

Received Revised Online Accepted

Abstract Suspended emulsion polymerization of vinyl chloride was carried out in a 5 L autoclave. The influence of agitation, polymerization conversion, dispersant and surfactant on the average particle size (PS) and particle size distribution (PSD), particle morphology and porosity of polyvinyl chloride (PVC) resin was investigated. It showed that the agitator had great influence on the smooth operation of polymerization, PS and PSD. The PS increased and PSD became narrow as polymerization conversion became high. The porosity decreased with the increase of conversion. A convenient choice of additives, both dispersants and non-ionic surfactants, allows one to adjust PS and PSD. The PS decreased with the addition of polyvinyl alcohol or hydroxypropyl methylcellulose dispersants, and increased with the addition of Span surfactants. The addition of dispersants or surfactants also affected the morphology and porosity of resin, and PVC resin with looser agglomeration and homogeneous distribution of primary particles was prepared.

Key words [suspended emulsion polymerization](#); [vinyl chloride](#); [dispersant](#); [particle size](#); [particle size distribution](#); [porosity](#)

通讯作者:

包永忠 baoyz@che.zju.edu.cn

作者个人主页: 包永忠; 魏真理; 翁志学; 黄志明

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF](#) (1650KB)

▶ [\[HTML全文\]](#) (0KB)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中包含“suspended emulsion polymerization”的相关文章](#)

▶ 本文作者相关文章

· [包永忠](#)

· [魏真理](#)

· [翁志学](#)

· [黄志明](#)