

催化、动力学与反应器

环氧环己烷与二氧化碳合成碳酸环己烯酯的化学反应动力学

刘百萍, 方云进

化学工程联合国家重点实验室, 华东理工大学, 上海 200237

收稿日期 2007-9-12 修回日期 2007-11-10 网络版发布日期 2008-4-21 接受日期

摘要

关键词

[环氧环己烷](#) [动力学](#) [碳酸环己烯酯](#) [环加成反应](#) [二氧化碳](#)

分类号

Chemical reaction kinetics for cyclohexene carbonate synthesis from cyclohexene oxide and carbon dioxide

LIU Baiping, FANG Yunjin

Abstract

The reaction of cyclohexene oxide with CO_2 to synthesize cyclohexene carbonate, catalyzed by a complex catalyst, under 1.4—2.6 MPa of pressure, at 130—170°C of temperature was studied experimentally. After eliminating the influence of external diffusion, the rate constants of positive and reverse reactions were estimated by fitting the experimental data to a macro-kinetics model. The results indicated that the reaction was an exothermal reaction. The reaction heat was $-42.11 \text{ kJ}\cdot\text{mol}^{-1}$. The activation energy was $27.51 \text{ kJ}\cdot\text{mol}^{-1}$ for the positive reaction, and $69.66 \text{ kJ}\cdot\text{mol}^{-1}$ for the reverse reaction.

Key words

[cyclohexene oxide](#) [kinetics](#) [cyclohexene carbonate](#) [cyclo-additive reaction](#) [carbon dioxide](#)

DOI:

通讯作者 方云进 yjfang@ecust.edu.cn

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(1188KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [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](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“](#)

[环氧环己烷” 的相关文章](#)

▶ [本文作者相关文章](#)

· [刘百萍](#)

· [方云进](#)