

论 文 摘 要

## 工业脂肪酸和松香 Diels-Alder 反应 合成新型二聚酸

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**摘 要:** 以工业脂肪酸和松香为原料, 经 Diels-Alder 反应, 合成一种新型二聚酸, 并采用高效液相色谱测定了产物的单体、二聚体和三聚体的含量。考察了松香与工业脂肪酸物料比、催化剂组成、反应温度、反应时间和反应压力对产物组成和性质的影响。结果表明, 采用自制的催化剂体系, 松香-脂肪酸的质量比为 1:19, 反应温度 250 °C, 反应时间 6 h, 反应压力 0.6 MPa 的条件下, 产物中二聚体达到 53.7%。聚合产物在 40 °C 的黏度为 300 mPa·s、酸值为 189.9 mg/g。用红外光谱对产物进行了表征。

**关键词:** 松香; 工业脂肪酸; Diels-Alder 反应; 二聚酸

## Synthesis of A Novel Dimeric Acid by Diels-Alder Reaction between Industrial Fatty Acid and Rosin

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**Abstract:** A novel dimeric acid was synthesized by Diels-Alder reaction between industrial fatty acid and rosin. The contents of monomer, dimer and trimer were detected by high performance liquid chromatogram (HPLC). The effects of influencing factors such as rosin-fatty acid ratio, catalyst, reaction temperature, reaction time and reaction pressure on the content and properties of product were investigated. The result showed that the optimum conditions were as follows: rosin-fatty acid ratio 1:19, reaction temperature 250 °C, reaction time 6 h and reaction pressure 0.6 MPa. Dimeric acids of 53.7% can be obtained in the product by using self-made catalyst. The viscosity of product is 300 mPa·s at 40 °C and acid value of the product is 189.9 mg/g. The product was characterized by infrared spectroscopy (IR).

**Key words:** rosin; industrial fatty acid; Diels-Alder reaction; dimeric acid

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