

Enzymatic transesterification of acrylic polyol

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Abstract

Transesterification reaction of acrylic polyol with methyl acrylate was examined using *Candida antarctica* lipase B (Novozym 435) as biocatalyst in organic solvent. These enzyme-catalyzed synthesis provides an attractive alternative approach to chemical synthesis, the reaction of isocyanates with hydroxyl groups ¹⁾.

We synthesized polyol macromer with copolymerization of styrene and acrylic monomers such as 2-ethylhexylacrylate, 4-hydroxybutylacrylate, hexylmethacrylate and acrylic acid. Acrylic polyol macromer were characterized depending on the variation of molecular weight and conversion according to the monomer ratio, initiator concentration,

The products of transesterification reaction with vinyl acrylate can be commonly used for UV-curable resin ²⁾. The enzymatic transesterification of acrylic polyol was confirmed by the reduction of methyl acrylate concentration after reaction. The reaction conversion and molecular weight were analyzed by gas chromatography (GC) and gel permeation chromatography (GPC). In addition, the effects of solvents and acrylate species on enzymatic transesterification were also examined.

References

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