

Novel chiral and achiral benzoxazine monomers and their thermal polymerization.

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Rok wydania

2009

Czasopismo

Macromolecules

Numer woluminu

42

Strony

4008-4015

DOI

10.1021/ma900336m

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

New chiral and achiral benzoxazine monomers (S)- α -3-methylbenzyl-3,4-dihydro-6,8-di-*tert*-butyl-2H-1,3-benzoxazine and *rac*- α -3-methylbenzyl-3,4-dihydro-6,8-di-*tert*-butyl-2H-1,3-benzoxazine were prepared by Mannich condensation from enantiomerically pure (S- α) and racemic (*rac*) methylbenzylamine $\text{H}_2\text{NCH}(\text{CH}_3)\text{C}_6\text{H}_5$, formaldehyde and 2,4-di-*tert*-butylphenol. Their DSC exhibit exotherms at 291 and 263 °C which correspond to oxazine thermal polymerization. The resulted polymers show very low T_g values of 31 and 19 °C for poly-S-**1** and poly-*rac*-**1**, respectively. Higher value for the polymer obtained from enantiomerically pure monomer results from the monomer derived stereoregularity of the polymer. A comparison of thermal stabilities of both polymers showed significantly lower heat resistance for the polymer obtained from racemic monomer. The resulted data are compared with those obtained for similar *rac*- α -3-methylbenzyl-3,4-dihydro-8-(1,1,3,3-*tetra*-methylbutyl)-2H-1,3-benzoxazine with a free *ortho* position at the phenyl.

Adres publiczny

<https://doi.org/10.1021/ma900336m>

Strona internetowa wydawcy

<https://www.acs.org/content/acs/en.html>