

Accepted Manuscript

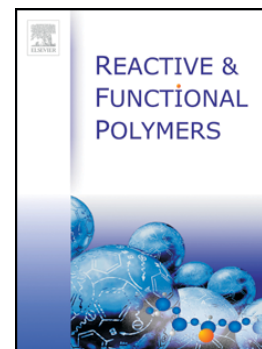
Ring-opening reactions of backbone epoxidized polyoxanorbornene

Ufuk Saim Gunay, Erhan Demirel, Gurkan Hizal, Umit Tunca, Hakan Durmaz

PII: S1381-5148(15)30023-7  
DOI: doi: [10.1016/j.reactfunctpolym.2015.07.004](https://doi.org/10.1016/j.reactfunctpolym.2015.07.004)  
Reference: REACT 3542

To appear in:

Received date: 28 May 2015  
Revised date: 12 July 2015  
Accepted date: 15 July 2015



Please cite this article as: Ufuk Saim Gunay, Erhan Demirel, Gurkan Hizal, Umit Tunca, Hakan Durmaz, Ring-opening reactions of backbone epoxidized polyoxanorbornene, (2015), doi: [10.1016/j.reactfunctpolym.2015.07.004](https://doi.org/10.1016/j.reactfunctpolym.2015.07.004)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# RING-OPENING REACTIONS OF BACKBONE EPOXIDIZED POLYOXANORBORNENE

Ufuk Saim Gunay, Erhan Demirel, Gurkan Hizal, Umit Tunca, Hakan Durmaz

Department of Chemistry, Istanbul Technical University, Maslak, 34469, Istanbul, Turkey

Corresponding author:

Hakan Durmaz

Department of Chemistry

Istanbul Technical University

Maslak

34469 Istanbul

Turkey

Tel: +90 212 285 3167

Fax: +90 212 285 6386

E-mail: durmazh@itu.edu.tr

## ABSTRACT

In this article, we report the synthesis of poly(oxanorbornene imide) (PONB) with internal epoxy groups (epoxidized-PONB<sub>30</sub>) and its ring-opening reactions with various nucleophiles, such as amine, azide, and thiols. The ring-opening reactions with amines yielded the amine-hydroxyl PONBs in the range of 36–95% of functionalization depending upon the amine content per epoxy. An allylamine-hydroxyl functionalized PONB was further functionalized efficiently with 1-octanethiol by radical thiol-ene reaction. The ring-opening reaction of the main chain epoxy using thiols resulted in a lower functionalization than amines with a similar functional group (e.g., allyl). In addition, sodium azide together with NH<sub>4</sub>Cl, was employed

Download English Version:

<https://daneshyari.com/en/article/5209710>

Download Persian Version:

<https://daneshyari.com/article/5209710>

[Daneshyari.com](https://daneshyari.com)