

Home > List of Issues > Table of Contents > Evaluation of Some Diphenylamine Derivatives as Thermal Stabilizers and Antifatigue Agents in Natural Rubber Vulcanizates

Browse journal

View all volumes and issues

Current issue

Most read articles

Most cited articles

Authors and submissions

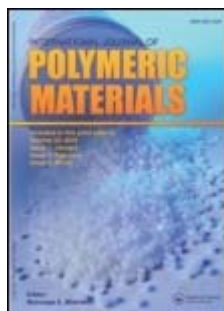
Subscribe

Journal information

News & offers

International Journal of Polymeric Materials

Volume 54, Issue 10, 2005



Evaluation of Some Diphenylamine Derivatives as Thermal Stabilizers and Antifatigue Agents in Natural Rubber Vulcanizates

Preview
Buy now

DOI: 10.1080/009140390504799

F. M. Al-Nowaiser^{a*}

pages 963-973

Available online: 01 Sep 2006
Alert me

- TOC email alert
- TOC RSS feed
- Citation email alert
- Citation RSS feed

ABSTRACT

Four compounds of diphenylamine derivatives were prepared and evaluated as thermal stabilizers and antifatigue agents in natural rubber (NR) mixes. The efficiencies of these compounds were compared with phenyl-B-naphthylamine, which is widely used in rubber industry. The rheological characteristics were determined using an oscillating disc rheometer. The physico-mechanical properties of the rubber vulcanizates were measured before and after exposure to accelerated thermooxidative ageing. The results revealed that the prepared compounds were good antioxidants and antifatigue agents for rubber vulcanizates. In addition, it was found that the chemical structure of the compounds has a great effect on their efficiency as stabilizers, that is, the presence of electron donating group increases their efficiency, whereas the presence of electron withdrawing group decreases it.

- View full text
- Download full text

Keywords

- diphenylamine derivatives,
- thermal stability,
- natural rubber,
- rheological characteristics,
- physico-mechanical properties,
- accelerated ageing,
- antifatigue agents

-  SHARE
- Add to shortlist
- Link

Permalink

<http://dx.doi.org/10.1080/009140390504799>

- Download Citation
- Recommend to:
 - A friend

- Information
- Full text
- References
- Reprints & permissions

Details

- **Available online:** 01 Sep 2006



Author affiliations

- ^a Department of Chemistry, Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia