

This article was downloaded by:

On: 19 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Polymeric Materials

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713647664>

Polymer Aging and Stabilization and Practical Problems

G. E. Zaikov^a

^a Institute of Chemical Physics, Academy of Sciences of the USSR,

To cite this Article Zaikov, G. E.(1990) 'Polymer Aging and Stabilization and Practical Problems', International Journal of Polymeric Materials, 13: 1, xi

To link to this Article: DOI: 10.1080/00914039008039456

URL: <http://dx.doi.org/10.1080/00914039008039456>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Introduction

Polymer Aging and Stabilization and Practical Problems

G. E. ZAIKOV

Institute of Chemical Physics, Academy of Sciences of the USSR

The study of polymer aging by no means is the aim in itself, it only enables solution of certain practical problems connected with improvement of polymer ware, the production of new polymer materials.

Investigation of the kinetic regularities and aging mechanisms of different class polymers provides insight into a number of problems, such as:

- 1) Improvement of reliable duration and storage times of polymer ware, which is akin to their wider production and better quality.
- 2) Prognostication of the polymer ware "lifetimes," which would enable wider use of polymer ware with no risk of their dropping out of service.
- 3) Warranted possibility of secondary use of polymer ware and polymer waste.
- 4) Promoted solution of the ecology problems, since now most polymer waste is burnt down with no secondary processing, thus polluting the biosphere.
- 5) Use of the degradation process as a means of modifying polymers and polymer ware by imparting them new important properties, such as creating hydrophilicity in hydrophobic polymers.
- 6) Production of polymers with a prefixed "lifetime," thus enabling their wider use, for instance in agriculture.

The cooperation of socialistic Academies of Sciences in the problem of polymer aging and stabilization proceeds along three projects' "Antioxidant," "Photo-stabilizer," "Antipyrene." The selection of admitted papers has been conducted accordingly.

The solution of many problems of the kinetics and mechanisms of polymer aging will promote realization of the above practical problems.

It will be noted in conclusion that prolonged preparatory work preceded the first joint symposium on this topic. From the beginning of the nineteen seventies the cooperating countries worked under bilateral agreements that became multilateral towards the middle of the nineteen eighties. As a result of it many papers have been prepared jointly by scientists from two countries.