RHEOLOGY OF CROSS-LINKED POLYMERS AND POLYMER FOAMS: THEORY AND EXPERIMENTAL RESULTS
Chapter 1

Introduction

In the literature review (Courtney, 2005; Findley et al., 1989), it is observed that the focus is on the simple creep test, while either ignoring or only giving a cursory mention of the stress relaxation test. This chapter provides a comprehensive summary of both.
Chapter 2

Polymers and Rheology

A myriad of information has been written on the subject of polymers. Indeed, there are many individuals who have spent their life’s work advancing the field of polymer science. One aim of this chapter is to simply introduce the reader to this vast field, and briefly review some key points of polymer mechanics to aid in the understanding of the work herein. For additional insights, the reader is encouraged to review works by Courtney, Flory, and Gibson (Courtney, 2005; Flory, 1990; Gibson and Ashby, 1997).

Microgeometry. The rheology of Evonik’s Rohacell IG, a thermoset foam manufactured from polymethacrylimide, is studied herein. This material is widely used as a core material in sandwich plate construction in the aviation, marine, and sports industries (Black, 2014; Evonik Industries, 2014).
Bibliography


