Cambridge Polymer Group

Accelerated Aging

Determine Shelf Life and End-Use Performance of Your Material or Medical Device

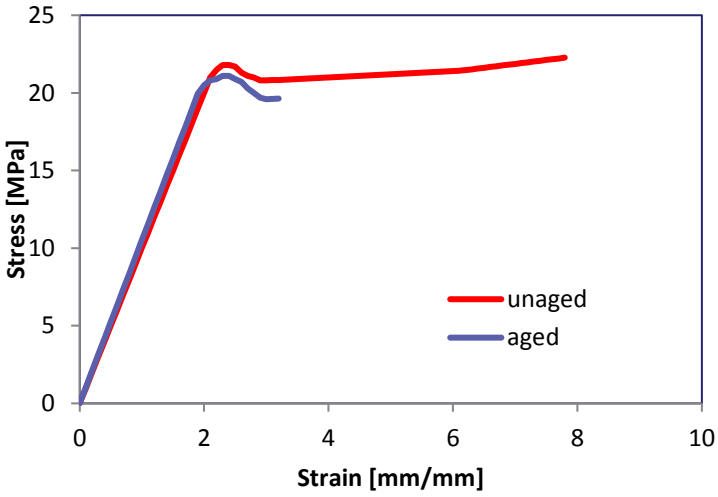
Summary

CPG routinely performs accelerated aging tests on materials in a variety of environments to assess shelf life, *in vivo* performance, and to determine possible failure modes of materials and devices.

Description

Manufacturers usually need to set a shelf or operational life for manufactured devices, dictated by when the device no longer meets its required function. Rather than wait and test devices that have aged in real time, accelerated aging methods are often used to accelerate these processes via use of elevated temperatures and/or higher levels of oxygen or oxidizing species. Following accelerated aging, functional testing of the material or device proceeds to see if there is an unacceptable loss of properties.

CPG performs accelerated aging according to ASTM standards, employing ovens, pressure vessels, multiple gas environments and relative humidity, and has also developed aging conditions to mimic *in vivo* performance of medical devices, including gastric environments and permanent implant environments. Our full range of analytical testing can then determine if the material or device has changes in chemical or mechanical properties following the accelerated aging, even if those changes are localized to the surface. We have assisted clients in establishing shelf-lives of devices based on accelerated aging for regulatory submissions, and to test their devices under worst-case aging conditions.



Key Points

- Standard and custom accelerated aging
- Post-aging analysis
- Shelf life and *in vivo* performance
- Potential failure mechanisms due to aging

ANALYTICAL TESTING
BIOMEDICAL MATERIALS
MATERIALS CONSULTATION
RESEARCH & DEVELOPMENT

ISO 9001
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Cambridge Polymer Group, Inc. is a contract research laboratory specializing in materials. We partner with our clients to solve the world's toughest polymer problems utilizing our multi-disciplinary research team and full service laboratory.

We work with clients throughout the product life cycle to:

- Develop new materials
- Design prototypes for proof-of-concept studies
- Create and execute experimental design
- Validate and verify manufacturing processes
- Perform root-cause analysis in product failures

Cambridge Polymer Group, Inc. was founded in 1996 to provide a cost-effective resource for testing, research and development to clients who need periodic access to Ph.D.-level scientists and their support structure. We have developed a host of testing methods and materials for our clients, which number more than 1,000.

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