

Method To Determine Degree Of Cure Or Molecular Weight Of Polymers

Tech ID: 34310 / UC Case 2026-630-0

BRIEF DESCRIPTION

A non-destructive, spatially resolved, and real-time technique monitors the curing and molecular weight of adhesives and sealants without chemical modification.

FULL DESCRIPTION

This technology utilizes imaging microscopy to measure curing progress and molecular weight in adhesives, sealants, and polymers. It enables in situ, nondestructive, and spatially resolved monitoring across a wide range of materials including epoxies, silicones, polyvinyl acetate, cyanoacrylate, paints, and polyurethanes. Unlike some traditional methods requiring sample destruction or chemical probes, this method detects cure status and molecular weight changes in real time through imaging. Importantly, this approach does not require additives.

SUGGESTED USES

- » Nondestructive and real-time cure monitoring
- » Spatial resolution enables detection of uneven curing
- » No chemical modification or probes needed
- » Applicable to a wide variety of adhesive and sealant chemistries
- » Enables in situ measurement of insoluble polymer molecular weight
- » Allows precise control over material properties during processing

ADVANTAGES

- » Nondestructive and real-time cure monitoring
- » Spatial resolution enables detection of uneven curing
- » No chemical modification or probes needed
- » Applicable to a wide variety of adhesive and sealant chemistries
- » Enables in situ measurement of insoluble polymer molecular weight
- » Allows precise control over material properties during processing

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OTHER INFORMATION

CATEGORIZED AS

- » **Materials & Chemicals**
- » Chemicals
- » Composites
- » Other
- » Polymers

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2026-630-0

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