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Plastics — Epoxy resins — Determination of degree of crosslinking of crosslinked epoxy resins by differential scanning calorimetry

*Plastiques — Résines époxydes — Détermination du degré de
réticulation des résines époxydes réticulées par analyse calorimétrique
différentielle*



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Foreword

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ISO 14322 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

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Introduction

It is possible to determine the degree of crosslinking of a crosslinked epoxy resin by observing changes in its mechanical, electrical or thermal properties.

However, such an approach is inadequate in cases in which the test sample is to be evaluated as is or is to be examined under various crosslinking conditions. This International Standard provides a method whereby the degree of crosslinking is determined without the need for complicated procedures for preparing, conditioning or configuring the test sample. The degree of crosslinking is determined by comparing the heat of the crosslinking reaction for the test sample with that of a reference sample, using a differential scanning calorimeter.

The advantages of this method are that sample preparation is simple and measurements can be made with very small amounts of sample. For these reasons, this International Standard is useful for investigations of, and in establishing conditions for, crosslinking reactions. It can also be used for production and quality control.

Finally, since epoxy resin systems are highly diverse, the applicability of this International Standard to each resin system needs to be established. A technique to test the applicability to an epoxy resin system is included in the standard.