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Standard**

ISO 22206

**Kraft lignin — Glass transition
temperature by differential
scanning calorimetry**

*Thiolignine — Température de transition vitreuse par analyse
calorimétrique différentielle*

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Foreword

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Introduction

Lignin exists naturally in plants and trees and is one of the main components in wood. Given its abundance and its aromatic structure, lignin has the potential to replace fossil-based starting materials in a range of products including polymeric materials and fine chemicals. It is currently being evaluated by companies around the world as an alternative to petroleum-based chemicals for products such as carbon fibres, flavour and pharmaceutical ingredients, resins, foams, rubber additives, and thermoplastics.

The majority of world commerce is governed by regulations-based product standards. An absence of standards for products and properties therefore limits market access. With international interest and ongoing work in developing and commercializing new products from lignin, a strong knowledge of the physicochemical properties of lignin including chemical structure, molecular weight (MW) distribution, and thermal properties is required.

The glass transition temperature (T_g) of an amorphous material including lignin is used to determine the softening point and to speculate on the level of crosslinking when processing these materials at elevated temperatures. It is of special relevance in the drying of lignin as well as in determining suitable processing conditions for lignin in a range of chemical and polymer industry processes.

The present method aims to provide a standardized method to measure the glass transition temperature of kraft lignins for various applications. It will provide lignin producers and manufacturers an advantage to improve access to the lignin and lignin derivatives marketplaces globally.