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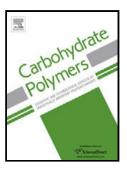
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Solubilization of cashew gum from Anacardium Occidentale in aqueous medium

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Highlights

Effect of pH on the dissolution of cashew gum in water was investigated.

Molecular weight of cashew gum was measured with SEC.

Aggregates of cashew gum disintegrate at higher pH than 6.2.

Cashew gum thermally degrades at higher than 100 °C.

Carboxylic acid groups play important role in the dissolution of cashew gum.

Abstract

Although cashew gum (CG) is known to be soluble in water, the solubilized CG does not exist as

individual molecules in its solution. Instead, CG molecules form aggregates resulting in a turbid solution.

For better solubilization of CG in water, two types of approaches are attempted: thermal degradation and

changing the pH of solution medium. The thermal degradation at high temperatures does not follow the

same pattern as a similar polysaccharide, starch: instead of being thermally degraded to smaller molecules

that are readily soluble in water, the aggregated CG molecules were not fully disintegrated to individual

molecules even after the heating to 190 °C. Size Exclusion Chromatography (SEC) shows that CG exists

as entangled aggregates in aqueous solution at room temperature, and these aggregates disentangle in

neutral or alkaline medium. Therefore, raising the pH of solution turns out to be a more efficient way to

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