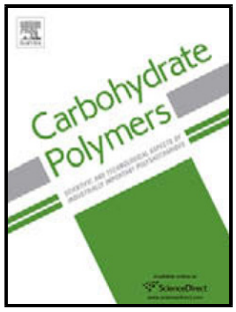

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Author: Louis M. Nwokocha Peter A. Williams

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HYDRODYNAMIC AND RHEOLOGICAL PROPERTIES OF *IRVINGIA GABONENSIS* GUM

Louis M. Nwokocha[a] and Peter A. Williams [b,*]

[a] Department of Chemistry, University of Ibadan, Ibadan, Nigeria.

[b]Centre for Water Soluble Polymers, Glyndwr University, Wrexham, LL11 2AW, UK.

*Corresponding author. Tel.: +44 1978293 083.

E-mail address: p.a.williams@glyndwr.ac.uk (P.A. Williams).

Abstract

The polysaccharide component of *Irvingia gabonensis* endosperm was isolated and its hydrodynamic and rheological properties investigated. The polysaccharide is an arabinogalactan and contains small amounts of rhamnose, galacturonic acid, glucose and glucuronic acid.

The polysaccharide displayed typical polyelectrolyte behaviour in solution. The intrinsic viscosity at infinite ionic strength, a measure of the hydrodynamic volume of the uncharged polysaccharide molecule, was obtained as 4.9 dl/g. The macromolecules have a semi flexible backbone with a Smidsrod stiffness parameter of 0.085. The polysaccharide exhibited non-Newtonian behaviour at all the concentrations (0.2% to 3.0% (w/v)) investigated. Cox-Merz plots showed that $\eta(\dot{\gamma})$ and $\eta^*(\omega)$ were closely superimposable except at low shear rates and higher concentrations, where $\eta^* > \eta$. The high Mw (1.56×10^6 g/mol) and its random coil conformation show *Irvingia gabonensis* polysaccharide has potential for application as thickener.