



## Characterization and Basic Guidelines for the Quality Control of Chitosan for Drug Delivery in Pharmaceutical Applications

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**SUMMARY.** Chitosan is increasingly used as an alternative to synthetic polymers due to its water solubility, biodegradability, and biological activity. In this work, chitosan samples from three suppliers were evaluated and characterized by physicochemical methods in an attempt to analyze pharmaceutical applications. The degree of deacetylation (DD) was determined by <sup>1</sup>H NMR, IR spectra, potentiometric titration, and UV spectrophotometry. The analysis was supplemented by the techniques of DSC, TG, loss on drying, pH of the suspension, heavy metals, sulphated ash, and triple detector size exclusion chromatography (TriSEC). The use of UV, IR, and <sup>1</sup>H NMR techniques to determine the degree of deacetylation, limit testing for heavy metals and sulphated ash to analyze inorganic waste, and TriSEC to analyze molecular weights and molecular distribution are recommended as basic requirements for pharmaceutical applications.

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