Biobased barriers for packaging papers

Biobased materials such as alginate, casein, soya protein, gluten, MFC and chitosan have a potential to substitute synthetic barriers used for coating of paper-based packaging materials. These bio-based materials, applied on packaging paper could provide interesting functionalities while still maintaining the environmentally friendly characteristics of the paper. Different types of paper were coated using renewable materials and comprehensive barrier measurements showed multifunctional barrier properties of biomaterials. Gas permeability of the coated samples was 0 mL·min⁻¹. Grease resistance was improved, while it was possible to reduce water vapor transmission rate, the migration of mineral oils, and the permeation of organic volatile compounds for both paper substrates when compared with uncoated substrates. In summary, industrially produced paperboard was upgraded by coating it with the naturally biodegradable biopolymers, thus achieving extraordinary barrier performance for various applications within the paper and packaging industry.

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