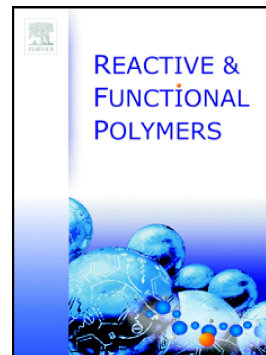


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# Surface properties and morphology of selected polymers and their blends designed to mucoadhesive dosage forms

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## Abstract

In the mucoadhesive drug delivery systems the controlling mechanism is initiated by the wetting and swelling of the polymer matrix. In view of the above, the aim of our study was to analyze the effect of model saliva and gastric fluids on the wetting properties and sorption of selected mucoadhesive (Carbopol 974P NF, HEC) and film-forming (Kollidon VA 64) polymers as well as their blends. We considered two ~~pharmaceutical formulations powders and tablets (discs)~~ types of examined materials: individual polymers and their blends in the form of powders as well as in the form of compressed discs (blanc tablets). The contact angle measurements for powders were performed according to the Washburn method, using the capillary rise technique, whereas the sessile drop method was applied to the compressed discs of mucoadhesive polymers. The surface energy was determined by the OWRK method. The influence of composition of the polymer blends and pH of ~~biological~~-model fluids on the wetting properties and sorption of the polymer formulations was evaluated. Moreover, significant differences in the morphology, surface roughness and surface properties of mucoadhesion polymers considered were discussed.

**Keywords:** mucoadhesive polymer blends; sorption; wetting; surface free energy; surface roughness

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