

# **INFLUENCE OF CHANGES IN COMPOSITION OF THE MEMBRANE-FORMING SOLUTION ON THE STRUCTURE OF ALGINATE-POLYETHERSULFONE MICROCAPSULES**

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## **Abstract**

The aim of this study was to evaluate the effects of changes in composition of the membrane-forming solution on the structure of alginate-polyethersulfone microcapsules as determined by optical microscopy and scanning electron microscopy. The microcapsules were produced from 4 solutions of different concentrations and molecular weights of synthetic polymer (polyethersulfone, PES) and porophore (polyvinylpyrrolidone, PVP). The composition of the membrane-forming solution strongly affected the structure of microcapsules. An increase in PES concentration caused a decrease in the membrane thickness. The inner and outer layers of the membrane became thinner and denser, while the pores of the middle finger-like zone turned into more regular, channel-like structures. The size of the pores was not directly affected by the molecular weight of porophore, however, an increase in its concentration resulted in formation of the larger inner surface pores, but the smaller outer surface pores.

**Keywords:** alginate-polyethersulfone microcapsules, scanning electron microscopy, optical microscopy, microcapsule structure, membrane porosity