

Morphology of ethylcellulose microcapsules according to the composition of the coagulation bath

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Abstract

To produce microcapsules, a polymeric solution containing an active ingredient is dropped onto a coagulation bath. The difference of the surface tension between the polymeric and the coagulation phases is one of the determinant factors for the precipitation of the polymer on the form of microcapsules. To produce ethylcellulose capsules, a mixture of water, sodium dodecyl sulfate (SDS) and acetic acid (HOAc) is used as a coagulation bath. By using surface tension data available in the literature and applying the Szyszkowski equation, it is possible to calculate the surface tension of the coagulation bath. Ethyl cellulose capsules were produced and characterized through Scanning Electron Microscopy (SEM) and differences in morphology were correlated to the differences in the precipitation conditions, namely the concentration of SDS, the presence of HOAc, and the total surface tension of the coagulation bath

Keywords: microcapsules, ethylcellulose, surface tension

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