

Preparation and Characterization of Biodegradable PCL/PEI Microcapsules Containing Fragrant Oil

석수자, 박수진*, 홍성권¹
한국화학연구원; ¹충남대학교 고분자공학과
(psjin@kRICT.re.kr*)

The biodegradable poly(ϵ -caprolactone) (PCL)/poly(ethylene imine) (PEI) microcapsules containing Al_2O_3 and fragrant oil were prepared with various concentrations of PEI. The prepared microcapsules were investigated in the effect of an addition of PEI. Inclusion of fragrant oil into microcapsules was confirmed by 2935 cm^{-1} , 1440 cm^{-1} , 880 cm^{-1} peak through FT-IR. The effect of PEI content on the diameter and shape of microcapsules were observed in image analyzer and scanning electron microscope (SEM), respectively. As a result, the surface morphologies of the PCL/PEI microcapsules were changed from smooth surfaces to skin-like rough surfaces with an addition of PEI. The average particle size of the PCL/PEI microcapsules was increased with increasing the PEI concentration. Also, the release rate of the fragrant oil from microcapsules was increased with increasing the PEI concentration. These results could be explained that PEI was swollen well in hydrophilic solution due to its hydrophilic nature.