

Characterization of encapsulated titanium dioxide using engkabang fat esters for cosmeceutical purposes

ABSTRACT

The formulations of encapsulated and non-encapsulated titanium dioxide using engkabang fat esters (EFE) and beeswax were produced by emulsification method using high shear homogenizer. All formulations were stable in freeze -thaw cycles test, at room temperature (25°C) and 45°C for three months. The particle sizes of the formulations were in the range of 80 nm to 406 nm. Surface charge measurements of formulations denoted the presence of stable dispersions. All formulations could be classified as the pseudo plastic materials under a non-Newtonian fluid. The formulations containing encapsulated TiO₂ gave higher absorbance compared to the formulations containing non-encapsulated TiO₂.

Keyword: Engkabang; Sunscreen; Titanium dioxide; Ultraviolet