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(54) Title: CLAY-POLYACRYLATE COMPOSITES SUSPENSION VIA IN SITU POLYMERIZATION

(57) Abstract: The present disclosure relates to a clay-polyacrylate composite comprising layers of clay intercalated with polyacrylate, wherein the layers of clay comprises at least one organosilane coupling agent comprising an acrylate moiety; and wherein the polyacrylate comprises a first acrylate monomer and a second acrylate monomer having different solubility. A surfactant-free method of synthesizing the said clay-polyacrylate composite and a method for coating are also provided. In a preferred embodiment, the first acrylate monomer is a hydrophilic acrylate monomer, e.g. 2-hydroxyethyl acrylate, and the second acrylate monomer is a hydrophobic acrylate monomer, e.g. 2-ethylhexyl acrylate. The clay-acrylate composite can be used for forming a barrier coating, which exhibits low water and low oxygen permeability.



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