

Title (en)
MAGNETIC NANOCAPSULES AS THERMOLATENT POLYMERIZATION CATALYSTS OR INITIATORS

Title (de)
MAGNETISCHE NANOKAPSELN ALS THERMOLATENTE POLYMERISATIONSKATALYSATOREN ODER -INITIATOREN

Title (fr)
NANOCAPSULES MAGNÉTIQUES UTILISÉES EN TANT QUE CATALYSEURS OU INITIATEURS DE POLYMÉRISATION THERMOLATENTS

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Abstract (en)
[origin: WO2018033550A1] The present invention relates to a process for producing special nanocapsules employable as thermolatent polymerization catalysts, in particular for the polymerization of polyurethanes, by means of a high shear process, wherein the process comprises: (i) emulsifying a first reaction mixture (a) in a continuous aqueous phase comprising at least one stabilizer, wherein the first reaction mixture, based on the total weight of the reaction mixture, comprises 10.0 to 99.0 wt% of a monomer mixture, wherein the monomer mixture, based on the total weight of the monomer mixture, comprises (a1) 2.5 to 19.0 wt% of at least one ethylenically monounsaturated C3-5-carboxylic acid monomer; (a2) 76.0 to 97.5 wt% of at least one ethylenically monounsaturated C3-5-carboxylic acid-C1-10-alkyl ester monomer; and (a3) 0.0 to 5.0 wt% of at least one monomer bearing at least two ethylenically unsaturated groups; (ii) emulsifying a second reaction mixture (b) in a continuous aqueous phase comprising at least one stabilizer, wherein the second reaction mixture, based on the total weight of the reaction mixture, comprises: (b1) 1.0 to 80.0 wt% of magnetic nanoparticles; (b2) optionally 0.0 to 70.0 wt% of at least one polymerization catalyst or initiator; (b3) optionally 0.0 to 89.0 wt% of at least one hydrophobic release agent; and (b4) optionally 0.0 to 10.0 wt% of at least one ultrahydrophobic compound distinct from the release agent; (iii) combining the first reaction mixture from step (i) and the second reaction mixture from step (ii); and (iv) polymerizing the monomers. The invention further relates to the nanocapsules produced by means of the described process, to the use thereof, and to agents which contain these nanocapsules.

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