

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.

IPC 8 full level

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