Claims

1. A process for making a core-composite shell microcapsules slurry, which comprises:

(i) providing as a dispersion in an aqueous vehicle, a hydrophobic internal phase comprising at least one polyisocyanate having at least three isocyanate functional groups and a hydrophobic active ingredient;

(ii) mixing a first and second polyelectrolytes in the aqueous vehicle under conditions sufficient to form a suspension of complex coacervate nodules;

(iii) depositing the complex coacervate nodules at an interface of the aqueous vehicle adjacent to the hydrophobic internal phase to form an outer shell of microcapsule, wherein the hydrophobic internal phase forms the core and contains the polyisocyanate and the hydrophobic active ingredient therein; and

(iv) providing conditions sufficient to induce interfacial polymerization of the polyisocyanate inside the outer shell to form an inner shell at the interface between the internal phase and the outer shell to form a core- composite shell microcapsule slurry,

characterized in that no amine or polyamine susceptible to polymerize with the polyisocyanate to form the inner shell is added at any stage of the process, and

characterized in that the pH of the microcapsule slurry obtained in step (iv) is not adjusted above 7.

2. The process according to claim 1, wherein no amount of other water-soluble reactant than an amine or polyamine susceptible to polymerize with the polyisocyanate is added at any stage of the process, said water-soluble reactant being chosen in the group consisting of polyols, thiols, ureas, urethanes, and mixtures thereof.

3. The process according to of claim 1 or 2, characterized in that the first polyelectrolyte is gelatin and the second polyelectrolyte is selected from the group consisting of carboxymethyl cellulose, sodium carboxymethyl guar gum, xanthan gum and plant gums.

4. The process according to claim 3, characterized in that the second polyelectrolyte is acacia gum.

5. The process according to any one of claims 1 to 4, characterised in that the at least one polyisocyanate having at least three isocyanate functional groups is present in an amount comprised between 0.1 and 30 wt% of the hydrophobic internal phase.

6. The process according to any one of claims 1 to 5, characterized in that the at least one polyisocyanate having at least three isocyanate functional groups is an aromatic polyisocyanate.

7. The process according to any one of the preceding claims, characterized in that the hydrophobic active ingredient is selected from the group consisting of a perfume, a flavor, nutraceuticals, cosmetics, insect control agents, biocide actives and mixtures thereof, preferably a perfume or flavor.

8. The process according to any one of the preceding claims, wherein it comprises a further step of drying the slurry obtained in step (iv) to obtain dried core- composite shell microcapsules.

9. A perfuming composition comprising:

(i) core-composite shell microcapsules comprising an outer shell of a coacervate, an inner shell consisting essentially of polymerised polyisocyanate formed from at least one polyisocyanate comprising at least three isocyanate functional groups in the absence of a reactant consisting of a polyamine or an amine, and an internal phase comprising an hydrophobic active ingredient, wherein the inner shell and outer shell form a composite structure, and wherein the hydrophobic active ingredient comprises a perfume;

(ii) at least one ingredient selected from the group consisting of a perfumery carrier and a perfumery co-ingredient; and

(iii) optionally at least one perfumery adjuvant.

10. A consumer product in the form of a home- or personal-care product, in liquid or powder form, that includes:

- core-composite shell microcapsules comprising an outer shell of a coacervate, an inner shell consisting essentially of polymerised polyisocyanate formed from at least one polyisocyanate

comprising at least three isocyanate functional groups in the absence of a reactant consisting of a polyamine or an amine, and an internal phase comprising an hydrophobic active ingredient, wherein the inner shell and outer shell form a composite structure, or
- a perfuming composition as defined in claim 9.

11. The consumer product according to claim 10, wherein it is in the form of a detergent composition, a fabric softener, a hard surface cleaning composition, a dishwashing composition, a shampoo, a hair conditioner, a shower or bath mousse, oil or gel, a deodorant, or an antiperspirant.

12. A consumer product according to claim 10 or 11, comprising from 0.1 to 50% by weight of surfactant.