Claims

1. Process for producing an impact modifier comprising following steps
   a) synthesis of a core shell copolymer latex by emulsion polymerization
   b) control and adjusting of pH value of the core shell polymer particle after the synthesis step to a pH between 4 and 8
   c) coagulation of the core shell polymer at a pH between 4 and 8 by addition of an aqueous electrolyte solution.

2. Process according to claim 1 wherein the pH of the latex of the core-shell copolymer particle before the coagulation step is between 4 and 7.5.

3. Process according to any of claims 1 or 2 wherein the pH of the latex of the core shell copolymer particle before the coagulation step is between 6 and 7.

4. Process according to any of claims 1 to 3 wherein the pH of the coagulation step c) is between 6 and 7.

5. Process according to any of claims 1 to 4 wherein the pH value of step b) is al is adjusted by addition of an aqueous buffer solution.

6. Process according to claim 5 wherein the aqueous buffer solution is an aqueous phosphate buffer solution.

7. Process according to any of claims 1 to 6 wherein the electrolyte used for coagulation in step c) is magnesium sulfate

8. Process according to any of claims 1 to 7 comprising an additional step d) after c) wherein step d) is adjusting of pH value of the core shell polymer after the coagulation step between pH 6 to 7.5.

9. Process according to claim 8 wherein the adjusting of the pH of step d) is made by an aqueous electrolyte solution chosen from inorganic salts ; preferably among phosphates and sulfates anions and among sodium, potassium, magnesium and calcium cations and advantously from magnesium sulfate, calcium sulfate, disodium hydrogenophosphate and potassium dihydrogenophosphate or mixtures therof.

10. A thermoplastic polymer composition comprising

A) one thermoplastic polymer

B) a core-shell impact modifier obtained by a process according to any of claims 1 to 9.

11. A thermoplastic polymer composition comprising according to claim 10, wherein the thermoplastic polymer is chosen from poly(vinyl chloride) (PVC), polyesters as for example poly (ethylene terephtalate) (PET) or poly(butylen terephtalate) (PBT)or polylactic acid (PLA), polystyrene (PS), polycarbonates (PC), polyethylene, poly (methyl methacrylate)s , (meth)acrylic copolymers, thermoplastic poly(methyl methacrylate-co-ethylacrylates), poly(alkylene-terephtalates), poly vinylidene fluoride , les poly(vinylidenchloride), polyoxymethylen (POM) , semi-crystalline polyamides, amorphous polyamides, semi-crystalline copolyamides, amorphous copolyamides, polyetheramides, polyesteramides, copolymers of styrene and acrylonitrile (SAN), or their mixtures.

12. A thermoplastic polymer composition comprising according to claim 10, wherein the thermoplastic polymer is chosen from polycarbonate (PC) and/or polyester (PET or PBT) or PC or polyester alloys.

13. A thermoplastic polymer composition comprising according to any of claims 10 to 12, wherein core-shell impact modifier comprises a polymeric core and at least two polymeric layers, each layer with a different polymer composition, wherein at

least one polymeric layer comprises a polymer that is a gradient polymer.

14. A thermoplastic polymer composition comprising according to claim 13, wherein one polymeric layer is a polymeric core layer, the core layer with a different polymer composition then the core, wherein polymeric core layer comprises a polymer that is a gradient polymer.

15. A thermoplastic polymer composition comprising according to claim 13, wherein at least one polymeric core layer and at least two polymeric shell layers, the core layer with a different composition then the polymeric core and the shell layers, wherein the polymeric core layer comprises a polymer that is a gradient polymer; and each shell layer with a different polymer composition, wherein at least one polymeric shell layer comprises a polymer that is a gradient polymer.

16. A thermoplastic polymer composition comprising according to any of claims 13 to 14, wherein the glass transition temperature of the polymeric core is under 0°C.

17. A thermoplastic polymer composition comprising according to any of claims 13 to 16, wherein the glass transition temperature of the polymeric core is under -40°C.

18. A thermoplastic polymer composition comprising according to any of claims 13 to 17, wherein the glass transition temperature of the polymeric core is between -80°C and -40°C.

19. A thermoplastic polymer composition comprising according to any of claims 13 to 18, wherein the polymeric core comprises polybutadiene.

20. A thermoplastic polymer composition comprising according to any of claims 13 to 19, wherein polymeric core layer comprises butadiene and styrene.

~~21. A thermoplastic polymer composition comprising according to~~ any of claims 13 to 20, wherein the polymeric shell layers comprises methylmethacrylate.

22. A thermoplastic polymer composition comprising according to any of claims 13 to 21, wherein the gradient polymer comprises styrene.