Claims:

1. A process for the preparation of an aqueous slurry comprising a plurality of elastomer particles suspended therein, the process comprising:

polymerizing monomers comprising at least one isoolefin and at least one multiolefin in a reaction medium comprising an organic diluent and an initiator system to form an organic medium comprising:

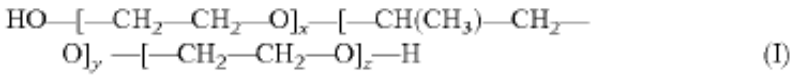
i) at least one elastomer, and

ii) the organic diluent;

contacting the organic medium with an aqueous medium comprising at least one lower critical solution temperature (LCST) compound, and

removing at least a portion of the organic diluent to obtain an aqueous slurry comprising elastomer particles.

2. The process according to claim 1, wherein the at least one LCST compound is selected from the group consisting of: poly(N-isopropylacrylamide), poly(N-isopropyacrylamide-co-N,N-dimethylacrylamide, poly(N-isopropylacrylamide)-alt-2-hydroxyethytmethacrylate, poly(N-vinylcaprolactam), poly(N,N-diethylacrylamide), poly[2-(dimethylamino)ethyl methacrylate], poly(2-oxazoline) glycopolymers, Poly(3-ethyl-N-vinyl-2-pyrrolidone), hydroxylbutyl chitosan, polyoxyethylene (20) sorbitan monostearate, polyoxyethylene (20) sorbitan monolaurate, polyoxyethylene (20) sorbitan monooleate, methyl cellulose, hydroxypropyl cellulose, hydroxyethyl methylcellulose, hydroxypropyl methylcellulose, poly(ethylene glycol) methacrylates with 2 to 6 ethylene glycol units, polyethyleneglycol-co-polypropylene glycols, compounds of formula (I)



(I)

with y=3 to 10 and x and z=1 to 8, whereby y+x+z is from 5 to 18,

with 2 to 8 ethylene glycol units and 2 to 8 polypropylene units, ethoxylated Iso-$C_{13}H_{27}$-alcohols, polyethylene glycol with 4 to 50 ethyleneglycol units, polypropylene glycol with 4 to 30 propyleneglycol units, polyethylene glycol monomethyl, dimethyl, monoethyl and diethyl ether with 4 to 50 ethyleneglycol units, polypropylene glycol monomethyl, dimethyl, monoethyl and diethyl ether with 4 to 50 propyleneglycol units.

3. The process according to claim 1, wherein:

the elastomers are selected from the group consisting of butyl rubbers, halogenated butyl rubbers, polyisobutylene, ethylene propylene diene M-class rubbers (EPDM), nitrile

butadiene rubbers (NBR), hydrogenated nitrile butadiene rubbers (HNBR), and styrene-butadiene rubbers (SBR); and

the at least one LCST compound comprises a cellulose selected from the group consisting of alkylcelluloses, hydroxyalkyl celluloses, hydroxyalkyl alkyl celluloses and carboxyalkylcelluloses.

4. The process according to claim 1, wherein the aqueous medium further comprises non-LCST compounds selected from the group consisting of:

ionic and non-ionic surfactants, emulsifiers, and antiagglomerants,

salts of mono- and multivalent metal ions,

carboxylic acid salts of multivalent metal ions, stearates and palmitates of mono- and multivalent metal ions, and

calcium and zinc stearates and palmitates.

5. The process according to claim 1, wherein the weight average molecular weight of the elastomer is 10 to 2,000 kg/mol.

6. The process according to claim 1, wherein the elastomer has a polydispersity of elastomers of 1.1 to 6.0, as measured by the ratio of weight average molecular weight to number average molecular weight as determined by gel permeation chromatography.

7. A process for preparing an aqueous slurry comprising a plurality of elastomer particles suspended therein, the process comprising:

contacting an organic medium comprising:

an elastomer having a Mooney viscosity of at least 10 (ML 1+8 at 125° C., ASTM D 1646), and

an organic diluent,

with an aqueous medium comprising a lower critical solution temperature (LCST) compound, wherein the LCST compound is a cellulose having a cloud point of 0 to 100° C.; and

removing at least a portion of the organic diluent to obtain an aqueous slurry comprising elastomer particles.

8. The process according to claim 1, wherein:

the elastomer comprises a polymer of:

at least one isoolefin selected from the group consisting of isoolefin monomers having from 4 to 16 carbon atoms; and

at least one multiolefin selected from the group consisting of isoprene, butadiene, 2-methylbutadiene, 2,4-dimethylbutadiene, piperyline, 3-methyl-1,3-pentadiene, 2,4-hexadiene, 2-neopentylbutadiene, 2-methyl-1,5-hexadiene, 2,5-dimethyl-2,4-hexadiene, 2-methyl-1,4-pentadiene, 4-butyl-1,3-pentadiene, 2,3-dimethyl-1,3-pentadiene, 2,3-dibutyl-1,3-pentadiene, 2-ethyl-1,3-pentadiene, 2-ethyl-1,3-butadiene, 2-methyl-1,6-heptadiene, cyclopentadiene, methylcyclopentadiene, cyclohexadiene and 1-vinyl-cyclohexadiene;

the organic diluent comprises at least one of: hydrochlorocarbons, hydrofluorocarbons, hydrochlorofluorocarbons, and hydrocarbons; and

the LCST compounds are LCST compounds having a cloud point of 20 to 70° C.

9. The process according to claim 1, wherein:

the elastomer comprises a polymer of isobutylene and isoprene; and

the at least one LCST compound is a cellulose in which at least one of the hydroxyl functions --OH Is functionalized to form one of the following groups: OR^c with R^c being methyl, 2-hydroxyethyl, 2-methoxyethyl, 2-methoxypropyl, 2-hydroxypropyl, $--(CH_2--CH_2O)_nH$, $--(CH_2--CH_2O)_nCH_3$, $--(CH_2--CH(CH_3)O)_nH$, $--(CH_2--CH(CH_3)O)_nCH_3$ with n being an integer from 1 to 20.

10. A process for the preparation of elastomer particles, the process comprising:

A) contacting an organic medium comprising:

i) at least one elastomer, and

ii) an organic diluent

with an aqueous medium comprising at least one lower critical solution temperature (LCST) compound selected from the group consisting of alkylcelluloses, hydroxyalkyl celluloses, hydroxyalkyl alkyl celluloses and carboxyalkycelluloses, and

B) removing at least a portion of the organic diluent to obtain an aqueous slurry comprising elastomer particles,

C) separating the elastomer particles contained in the aqueous slurry to obtain isolated elastomer particles, and

D) drying the Isolated elastomer particles.

11. Elastomer particles obtained according to the process according to claim 10.

12. The elastomer particles according to claim 11, wherein the particles comprise:

I) 96.0 wt. % or more of the elastomer,

II) 0 to 3.0 wt. % of salts of mono- or multivalent metal ions; and

III) 1 ppm to 5,000 ppm of the at least one LCST compound, and the LCST compound has a cloud point of 0 to 100° C.

13. The elastomer particles according to claim 11, wherein the particles comprise:

I) 100 parts by weight of the elastomer;

II) 0.0001 to 0.5 parts by weight of the at least one LCST compound;

III) none or 0.0001 to 3.0 parts by weight of salts of mono- or multivalent metal ions;

IV) none or 0.005 to 0.3 parts by weight of antioxidants; and

V) 0.005 to 1.5 parts by weight of volatiles having a boiling point at standard pressure of 200° C. or less.

14. Blends or compounds obtained by blending or compounding the elastomer particles according to claim 11.

15. The blends or compounds according to claim 14, wherein the blends comprise a ratio of elastomer to carboxylic acid salts of mono- and multivalent metal ions of at least 250:1.

16. A method for making an article of manufacture comprising an elastomeric component, the method comprising producing the elastomeric component from the elastomer particles according to claim 11.

17. Articles of manufacture comprising the elastomer particles according to claim 11, wherein the articles of manufacture comprise inner liners, bladders, tubes, air cushions, pneumatic springs, air bellows, accumulator bags, hoses, conveyor belts, pharmaceutical closures, automobile suspension bumpers, auto exhaust hangers, body mounts, shoe soles, tire sidewalls, tire tread compounds, belts, hoses, shoe soles, gaskets, o-rings, wires/cables, membranes, rollers, bladders, curing bladders, Inner liners of tires, tire treads, shock absorbers, machinery mountings, balloons, balls, golf balls, protective clothing, medical tubing, storage tank linings, electrical insulation, bearings, pharmaceutical stoppers, adhesives, containers, bottles, totes, storage tanks, container closures, container lids; seals, sealants, material handling apparatus, augers, conveyor belts, cooling towers; metal working apparatus, any apparatus in contact with metal working fluids, an engine component, fuel lines, fuel filters, fuel storage tanks, gaskets, seals, a membrane, appliances, baby products, bathroom fixtures, bathroom safety, flooring, food storage, garden, kitchen fixtures, kitchen products, office products, pet products, sealants and grouts, spas, water filtration and storage, equipment, food preparation surfaces and equipments, shopping carts, surface applications, storage containers, footwear, protective wear, sporting gear, carts, dental

equipment, door knobs, clothing, telephones, toys, catheterized fluids in hospitals, surfaces of vessels and pipes, coatings, food processing, biomedical devices, filters, additives, computers, ship hulls, shower walls, tubing, pacemakers, implants, wound dressing, medical textiles, ice machines, water coolers, fruit juice dispensers, soft drink machines, piping, storage vessels, metering systems, valves, fittings, attachments, filter housings, linings, and barrier coatings.