

**Claims**

1. Process for manufacturing of a coloured moulding composition, wherein the process comprises the following steps:
- 5 a) providing a thermoplastic polymer; and  
b) adding to the thermoplastic polymer from step a) a colouring preparation or a liquid composition or a masterbatch comprising said colouring preparation,
- 10 wherein the colouring preparation comprises a monoazo dye comprising at least one heteroaromatic moiety;  
and the colouring preparation comprises  
less than 100 ppm, preferably less than 50 ppm of aluminium or a compound thereof and  
less than 300 ppm, preferably less than 200 ppm of silicon or a compound thereof.
- 15 2. Process according to Claim 1, wherein the liquid composition added in step b) comprises, based on the weight of the liquid composition:
- from 1.0 to 30.0 wt.-% of a dispersing additive  
20 from 0.5 to 50.0 wt.-% of the monoazo dye and  
from 0.0 to 50.0 wt.-% of auxiliary additives and  
liquid, preferably demineralized water, where the portions by weight of the components of the liquid composition add up to 100 wt.-%.
- 25 3. Process according to Claim 1, wherein the masterbatch added in step b) comprises, based on the weight of the masterbatch:
- from 0.01 to 50.0 wt.-% of the monoazo dye  
from 50.0 to 99.99 wt.-% of the thermoplastic polymer.  
30 from 0.0 to 10.0 wt.-% of auxiliary additives,  
from 0.0 to 10.0 wt.-% of further colourants  
where the portions by weight of the components of the masterbatch add up to 100 wt.-%.
4. Process according to any of Claims 1 to 3, wherein the monoazo dye is selected from the  
35 list consisting of  
5-[(3,4-dichlorophenyl)azo]-1,2-dihydro-6-hydroxy-1,4-dimethyl-2-oxonicotinonitrile,  
2,3-dihydro-2,2-dimethyl-6-((4-(phenylazo)-1-naphthyl)azo)-1*H*-perimidin,  
cyano-5-[[5-cyano-2,6-bis[(3-methoxypropyl)amino]-4-methylpyridin-3-yl]azo]-3-methyl-2-  
thiophenecarboxylic acid methyl ester,  
40 5-methyl-2-phenyl-4-phenylazo-4*H*-pyrazol-3-one,

4-[(2,4-dimethylphenyl)azo]-2,4-dihydro-5-methyl-2-phenyl-3*H*-pyrazol-3-one,  
3-[(1-oxonaphthalen-2-ylidene)methylhydrazinylidene]-1-prop-2-enylindol-2-one,  
4-[(*o*-methoxyphenyl)azo]-3-methyl-1-phenyl-2-pyrazolin-5-one, and  
5-methyl-2-phenyl-4-phenylazo-4*H*-pyrazol-3-one.

5

5. Process according to any of Claims 1 to 4, wherein the thermoplastic polymer is selected from the group consisting of polyalkyl (meth)acrylate, polymethylmethacrylimide, polymethyl methacrylate copolymer, polystyrene, polystyrene copolymer, acrylonitrile copolymers, polycarbonates, polyesters, polyamides, polyvinylidene fluoride or a mixture thereof.

10

6. Process according to any of Claims 1 to 5, wherein the thermoplastic polymer comprises a polymer matrix and scattering particles dispersed in said polymer matrix, wherein the scattering particles have a weight average particle diameter of from 0.01  $\mu\text{m}$  to 100.0  $\mu\text{m}$  and refractive index of the scattering particles differs from that of the polymer matrix by at least 0.01.

15

7. Process according to any of Claims 1 to 6, wherein the thermoplastic polymer comprises an impact modifier selected from particulate impact modifier and thermoplastic impact modifier.

8. Process according to any of Claims 1 to 7, wherein the colouring preparation has a mass loss in dried form of not more than 15 wt.-%, preferably 0.0 to 10 wt.-%, more preferably 0.0 to 7.0 wt.-%, even more preferably 0.0 to 5.0 wt.-% and especially preferably from 0.0 to 4.0 wt.-% in isothermal thermogravimetric analysis at 260 °C for 15 min.

9. Process according to any of Claims 1 to 8, wherein the step b) is carried out in an extruder, preferably at a temperature ranging from 200 °C to 320 °C, more preferably from 230 °C to 300 °C.

10. Process according to any of Claims 1 to 9, wherein the thermoplastic polymer is polymethyl methacrylate having a weight average molecular weight  $M_w$  of from 80 000 g/mol to 180 000 g/mol and is obtainable by polymerization of a composition whose polymerizable constituents comprise, based on the weight of the polymerizable composition:

- (i) from 50.0 to 99.9 wt.-%, preferably from 80.0 to 99.9 wt.-% of methyl methacrylate
- (ii) from 0.1 to 50.0 wt.-%, preferably from 0.1 to 20.0 wt.-% of an acrylic acid ester of a C1-C4 alcohol
- (iii) from 0.0 to 30.0 wt.-% of at least one further monomer copolymerizable with the monomers (i) and (ii).

11. Process according to any of Claims 1 to 10, wherein the masterbatch or the liquid composition added in step b) further comprises

40

- at least one further dye selected from perinone dye, quinophthalone dye and anthraquinone dye;
  - at least one inorganic pigment;
  - at least one phthalocyanine pigment; or
  - 5 • any mixture of the above.
12. A coloured moulding composition comprising a thermoplastic polymer and a monoazo dye, wherein the thermoplastic moulding composition is obtainable by the process according to any of Claims 1 to 11.
- 10 13. Coloured moulding composition according to Claim 12, comprising less than 100 ppm, preferably less than 50 ppm of aluminium or a compound thereof and less than 300 ppm, preferably less than 200 ppm of silicon or a compound thereof.
- 15 14. Coloured moulding composition according to Claim 12 or 13, wherein the coloured moulding composition has a melt flow rate from 0.5 to 10.0 g / 10 min, measured at 230 °C with a load of 3.8 kg.
- 20 15. A process for the manufacturing of a moulded part, wherein the process comprises a step of injection moulding of a coloured moulding composition according to any of Claims 12 to 14 at a temperature ranging from 200 °C to 320 °C, preferably from 230 °C to 300 °C, wherein the coloured moulding composition is injected into a mould which can produce the moulded part,
- 25 wherein the coloured moulding composition comprises a monoazo dye comprising at least one heteroaromatic moiety and
- the coloured moulding composition comprises less than 100 ppm, preferably less than 50 ppm of aluminium or a compound thereof and less than 300 ppm, preferably less than 200 ppm of silicon or a compound thereof.
- 30 16. A process for the manufacturing of an extruded part, wherein the process comprises an extrusion process of a coloured moulding composition according to any of Claims 12 to 14 at a temperature ranging from 200 °C to 320 °C, preferably from 230 °C to 300 °C, wherein the coloured moulding composition is melted and die-casted to the final part,
- 35 wherein the coloured moulding composition comprises a monoazo dye comprising at least one heteroaromatic moiety and
- the coloured moulding composition comprises less than 100 ppm, preferably less than 50 ppm of aluminium or a compound thereof and
- 40 less than 300 ppm, preferably less than 200 ppm of silicon or a compound thereof.

17. Process according to Claim 15, wherein the moulded part has different wall thicknesses, one or more perforations, at least one non-planar surface or a combination of these features.
- 5 18. A moulded part or an extruded part obtainable by the process according to any of Claims 15 to 17.